Estonian Human Development Report 2023

# Mental Health and Well-Being

**The ant's scramble is a metaphor for each of us every day carefully putting in the effort to keep our homes, relationships and communities in good shape. And then these environments will also take care of us.**

**ALAR KARIS**
President of the Republic of Estonia

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Estonian Human Development Report 2023

# Mental Health and Well-Being

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**PHOTO:** Kiur Kaasik (Delfi)

## DEAR READER

This Estonian Human Development Report could not be more timely. Mental health as a social concern has come out of the shadows in recent years, and it has started to receive the attention it deserves, given the scale of the problems associated with it. This development has been boosted by the crises and insecurities of our time, which have caused more of us to feel mental tensions of one kind or another.

The voices of experts who have felt concerned for a long time have also become louder, and those affected have shared their stories more openly. This last aspect is crucial in order to shake the stigmas so long associated with mental health – particularly the belief that these kinds of problems are not a 'real' disease or are merely a sign of weakness. We are all vulnerable and need to know when and how to seek and offer help.

I often experience the importance of this topic in my work, especially when meeting with young people. No matter where the conversation starts, sooner or later, the young people themselves lead the discussion to performance stress, family relationships, bullying and other mental health concerns and risks.

Thanks to the spotlight that mental health has received in recent years, we are already better aware, better able to notice and more willing to speak out. We know that mental health concerns that go unnoticed are like a subterranean current eating away at the soil beneath our feet until the fertile, level ground collapses, leaving behind a black hole. Too many sinkholes and the land becomes barren. Too many broken souls and the nation loses its ability to move forward. In fact, even a single sinkhole is too much.

We know where assistance is lacking. We have a shortage of psychologists and psychiatrists, especially those dealing with children and young people. But one of the main messages of this year's Estonian Human Development Report is the importance of prevention. Self-care skills, community support in the family, school and neighbourhood, and the ability to recognise and support early – if this level works effectively, we may be able to avoid more serious problems that require specialist help.

It is an age-old truth that prevention is better than cure, even in economic terms. This includes simple things like good sleep, healthy meals and adequate exercise, which, in turn, connects this year's topic with the discussion of spatial policy in the previous Estonian Human Development Report.

In response to one of my posts on mental health, someone on Facebook once asked if Estonia needed another Tiger Leap, this time in mental health. It sounds tempting, I admit. If we managed to reinvent ourselves as one of the most successful digital states in the world, then surely a concerted effort would also help us achieve mental resilience.

It seems to me, though, that a tiger's leap might not be the appropriate metaphor here. The tiger picks up speed,

takes off and lands some distance away from where it took off. A couple of decades ago, we bought a lot of computers and gave a large part of the population access to the World Wide Web. Similarly, we can (and should) now share mental health first-aid skills and improve the availability of specialist medical care. But the key message of this report is that the psychosocial, digital and physical environments surrounding us play an essential role.

We cannot extract ourselves from these environments and land somewhere better, so we must focus on improving ourselves and our surrounding environment instead. Let's think of this as an ant's scramble rather than a tiger's leap. Let's think of it as each of us every day putting in the careful effort to keep our homes, relationships and communities in good shape. And then these environments will also take care of us.

**Let's read, and act!**

**ALAR KARIS**
President of the Republic of Estonia

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# INTRODUCTION

## A mentally healthy population will carry Estonia forward

MERIKE SISASK AND AIRI VÄRNIK

### KEY MESSAGES

1

**As Estonia has joined the nations with a high level of human development, the main focus in people's daily lives has shifted from survival to improving quality of life, including the aspiration to be mentally healthy.**

Human development can continue even in this uncertain age of global crises (pandemics, climate change, threat of war) if people's mental health is supported and protected. Promoting people's mental well-being and ability to take individual and collective action is increasingly important for society to function in crises.

2

**People's mental health and society's readiness to face crises depend on people's social and emotional sense of security and their ties to the community.**

When people's sense of belonging and security declines or disappears, it decreases their mental well-being and increases their risk of developing mental health problems. Feeling like one's opinions and needs have not been heard causes frustration and defiance and promotes the emergence of alternative social media groups, the consumption of misinformation, polarisation, and a general mistrust of the state and other people.

3

**Constant changes in everyday life and the cult of success put mental health to the test, requiring adaptive skills and the ability to balance demands and resources.**

Maintaining mental health involves being able to adapt swiftly to constantly changing circumstances. This requires resilience. From a mental health perspective, it is important to strike a balance between demands and resources at work, in school, and in caring for family members. Large-scale disruptions to this balance can significantly reduce a person's ability to function.

4

**Mental health is mainly seen in terms of disorders and treatment, not contributing enough to prevention to reduce vulnerability and recognise problems early.**

The lack of mental health specialists and poor availability of services is a recognised problem in Estonia. It signals that mental health is addressed when problems have reached an advanced stage and developed into diagnosable disorders. The fact that people seek help shows increased awareness and decreased stigmatisation, but it is important to strike a balance between treating disorders and preventing problems.

5

**Many mental health determinants lie outside the field of healthcare.**

Mental health over the life course is shaped by the living environment (psychosocial, digital and physical environment) and individual lifestyle choices. Maintaining mental well-being requires a comprehensive approach to prevention across various fields of life and an increased focus on the meaning of the cultural and spiritual aspects of life: shared values and traditions and the connection between natural and social ecosystems.

## Why mental health and well-being?

We live in an age of uncertainty that has brought great volatility into people's lives. While life may not have involved less uncertainty in the past, what sets the current uncertainty apart is that it encompasses many aspects of life simultaneously and affects us all globally. The latest UN Human Development Report (HDR 2022) focuses on humanity's preparedness to cope in our new situation, in which the threat of global pandemics, climate risks and military conflicts has sharply escalated. Meanwhile, humanity has also entered a completely new technological era, with artificial intelligence irreversibly changing decision-making processes and new energy sources upending conventional trends in the economy.

As a result of economic development aimed at unlimited growth, humanity has entered the Anthropocene, an era in which human activity has begun to threaten the future of the planet. The effects on the living environment cause unprecedented changes in the natural world and in the functioning of societies – changes from which no one can safely remove themselves. Increasing the overall uncertainty is the recognition that the usual economic and political mechanisms cannot solve the problems arising from the climate crisis. Many countries are experiencing social division and political turmoil, with changes to society that are difficult to predict. Feeding this uncertainty are the extremely rapid technological advancements of the last decade, which cause many to feel unsafe in an all-too-complex environment defined by concepts such as the green transition, the digital transition, artificial intelligence and climate neutrality. Different capacities to understand and cope with these changes exacerbate the inequalities between countries, regions and groups of people.

The crisis caused by the COVID-19 pandemic has served as a strong catalyst in the field of mental health, both globally and in Estonia. It has painfully highlighted the weak points in the Estonian mental health field, including the lack of mental health specialists and poor availability of services. The COVID-19 crisis

**The crisis caused by the COVID-19 pandemic has served as a strong catalyst in the field of mental health, both globally and in Estonia specifically.**

‘The last point that I think is necessary to address is the state of the nation’s mental health. At the moment, it is greatly impacted by the global COVID-19 crisis and the consequent restrictions in Estonia. Especially in young people, the feeling of isolation due to the restrictions causes loneliness, decreased motivation, stress and, in severe cases, anxiety, behavioural disorders and depression. This is illustrated by the significant increase in suicide attempts among adolescents in the past two years. What can we do as a society to improve the situation? The first thing we can do is talk about it. Every day that goes by without us addressing this topic is like a ticking time bomb. The other thing that every person can do is to remember to stay human. It is not difficult to be considerate, friendly, helpful and supportive of others, knowing that many people need mental support.’

**Mehis Rannaveer,** 11th grade, Järva-Jaani Secondary School

**SOURCE:** ‘What Kind of Estonia Do We Want?’, the Estonian president’s writing and idea session for school students, 2022

has brought uncertainty, physical isolation, social distancing, loneliness, economic uncertainty and reduced physical activity – all factors known to increase the risk of mental health problems. We have yet to see the long-term mental health effects of the crisis unleashed by the war in Ukraine. Crises put people’s mental health under great pressure and undoubtedly cause stress. By forcing people to worry about the future, stress can sometimes embolden them to take action. However, excessive stress can often trigger a mental health disorder (e.g. anxiety, depression or post-traumatic stress disorder) and completely inhibit their ability to act.

In volatile times, people must be able to control their negative emotions, adjust their attitude and summon up the will to take action while acknowledging the risks. This makes it possible to cope with threats and crises, learn from them and find new ways to move forward. The ability of individuals and communities to cope with crises and grow through them is known as resilience. As a concept, it combines stress tolerance and the ability to cope with one’s emotions, as well as flexibility and adaptability. In other words, it is the ability to balance between standing firm and bouncing back.

**The ability of people and communities to cope with crises and grow through them is known as resilience.**

Growing insecurity and the fear of an uncertain future can pose a serious threat to people’s mental health and well-being, fuelling violent and angry moods in society. Ultimately, these tendencies weaken people’s will to take action and jeopardise humanity’s ability to show solidarity in managing impending threats. Uncertainty in society does not necessarily have to lead to negative future scenarios, but it does force us to make choices, propelling us to think about desirable changes that are attainable in our quest for furthering human development. From a cultural perspective, this may require rethinking our values.

‘In my opinion, a small nation like ours should support each other at every step and stop inciting hate. This way, we could improve cooperation on a national level and pave the way for a better future. I encourage the idea that every person in every community should stick together with others living around them. People need to stop glorifying the open display of intolerance. Instead of stifling life in our communities, we should all contribute to advancing it.’

**Henry Merilaid,** 19 years old, Tallinn 32nd Secondary School

**SOURCE:** ‘What Kind of Estonia Do We Want?’, the Estonian president’s writing and idea session for school students, 2022

Looking beyond the assumption that people are mainly or solely interested in their personal well-being and driven by rational self-interest and competitive needs, social norms and narratives that value solidarity, creativity and the spirit of cooperation allow us to view mental health and well-being from an entirely different perspective, one that promotes human development. From this angle, it is easy to see why mental health and well-being are at the centre of both the global United Nations Human Development Report and this edition of the Estonian Human Development Report. The UN Human Development Report directly links humanity’s future prospects to how well people are prepared to cope with the currently looming global threats and how this affects their mental health and well-being.

By employing a systemic approach that enlists the efforts of Estonian social, health and behavioural scientists, this Human Development Report aims to shed light on the functioning of mental health and well-being through factors related to the living environment and lifestyle, in order to understand their expected impact on societal development and to visualise potential future perspectives.

## Health in the context of the UN Human Development Index

According to the UN Human Development Report 2022, the Human Development Index has been in global decline for two consecutive years for the first time since it was introduced, with 90% of countries experiencing a drop in either 2020 or 2021 (HDR 2022). Estonia ranks 31st in the world with an index value of 0.890 in 2021, which places it among countries with a very high level of human development, although the Estonia’s index value and place in the ranking have fallen slightly since the last report (EHDR 2020) (Table 0.1).

**According to the UN Human Development Report 2022, the Human Development Index has been in global decline for two consecutive years for the first time since it was introduced.**

**Table 0.1.** Human Development Index and its components in selected countries

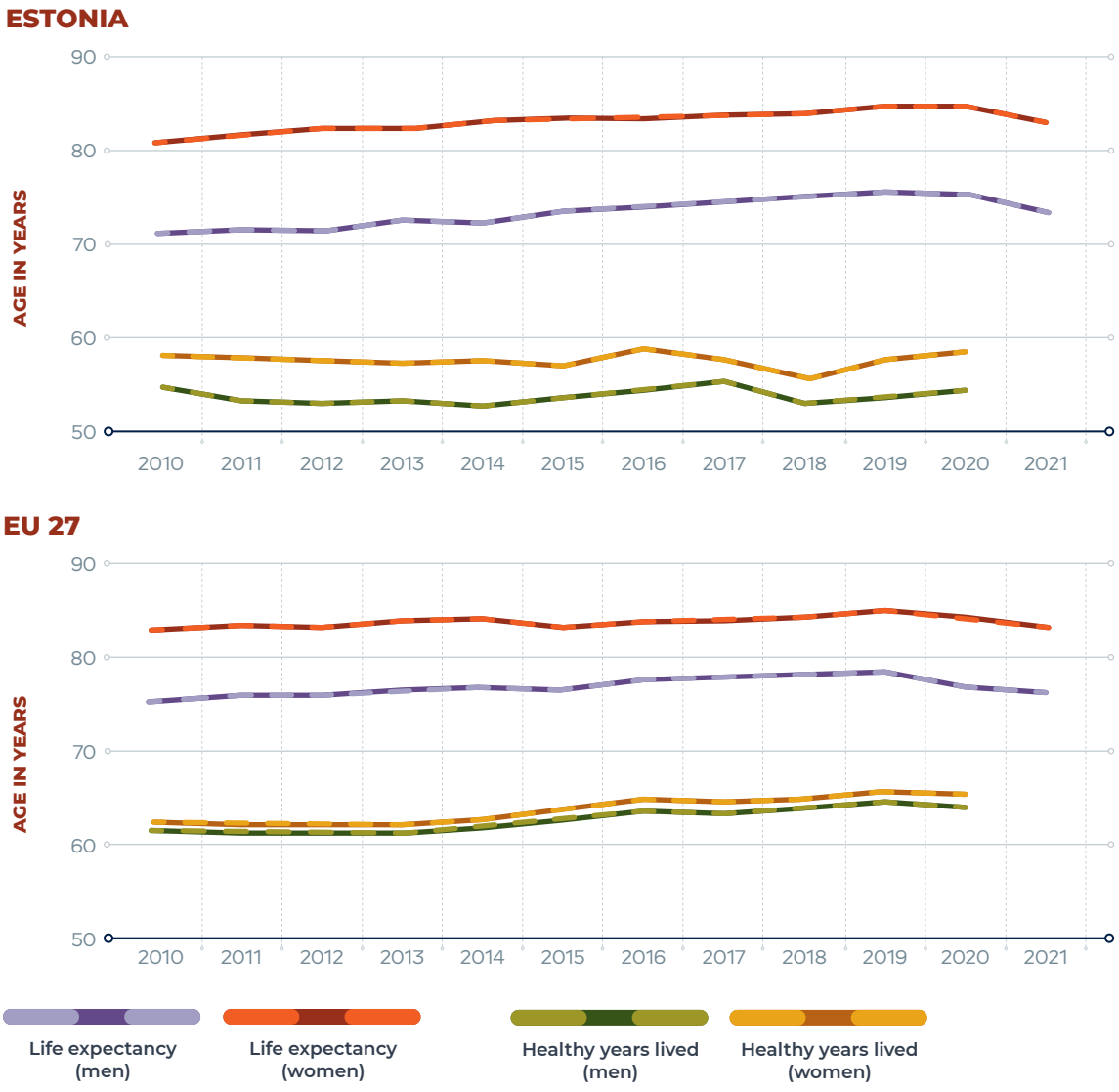
| Rank | Country | HDI 2019 | HDI 2021 | Two-year change | Life expectancy at birth | Expected years of schooling | Mean years of schooling | GNI per capita (2017 based on purchasing power parity, USD) |
|---|---|---|---|---|---|---|---|---|
| 1 | Switzerland | 0.955 | 0.962 | ▲ 0.007 | 84.0 | 16.5 | 13.9 | 66,933 |
| 2 | Norway | 0.957 | 0.961 | ▲ 0.004 | 83.2 | 18.2 | 13.0 | 64,660 |
| 3 | Iceland | 0.949 | 0.959 | ▲ 0.010 | 82.7 | 19.2 | 13.8 | 55,782 |
| 4 | Hong Kong | 0.949 | 0.952 | ▲ 0.003 | 85.5 | 17.3 | 12.2 | 62,607 |
| 5 | Australia | 0.944 | 0.951 | ▲ 0.007 | 84.5 | 21.1 | 12.7 | 49,238 |
| 6 | Denmark | 0.940 | 0.948 | ▲ 0.008 | 81.4 | 18.7 | 13.0 | 60,365 |
| 7 | Sweden | 0.945 | 0.947 | ▲ 0.002 | 83.0 | 19.4 | 12.6 | 54,489 |
| 8 | Ireland | 0.955 | 0.945 | ▼ -0.010 | 82.0 | 18.9 | 11.6 | 76,169 |
| 9 | Germany | 0.947 | 0.942 | ▼ -0.005 | 80.6 | 17.0 | 14.1 | 54,534 |
| 10 | Netherlands | 0.944 | 0.941 | ▼ -0.003 | 81.7 | 18.7 | 12.6 | 55,979 |
| 11 | Finland | 0.938 | 0.940 | ▲ 0.002 | 82.0 | 19.1 | 12.9 | 49,452 |
| 12 | Singapore | 0.938 | 0.939 | ▲ 0.001 | 82.8 | 16.5 | 11.9 | 90,919 |
| 13 | Belgium | 0.931 | 0.937 | ▲ 0.006 | 81.9 | 19.6 | 12.4 | 52,293 |
| 14 | New Zealand | 0.931 | 0.937 | ▲ 0.006 | 82.5 | 20.3 | 12.9 | 44,057 |
| 15 | Canada | 0.929 | 0.936 | ▲ 0.007 | 82.7 | 16.4 | 13.8 | 46,808 |
| 16 | Liechtenstein | 0.919 | 0.935 | ▲ 0.016 | 83.3 | 15.2 | 12.5 | 146,830 |
| 17 | Luxembourg | 0.916 | 0.930 | ▲ 0.014 | 82.6 | 14.4 | 13.0 | 84,649 |
| 18 | Great Britain | 0.932 | 0.929 | ▼ -0.003 | 80.7 | 17.3 | 13.4 | 45,225 |
| 19 | Japan | 0.919 | 0.925 | ▲ 0.006 | 84.8 | 15.2 | 13.4 | 42,274 |
| 20 | Korea (Republic of) | 0.916 | 0.925 | ▲ 0.009 | 83.7 | 16.5 | 12.5 | 44,501 |
| 21 | United States | 0.926 | 0.921 | ▼ -0.005 | 77.2 | 16.3 | 13.7 | 64,765 |
| 22 | Israel | 0.919 | 0.919 | ■ 0.000 | 82.3 | 16.1 | 13.3 | 41,524 |
| 23 | Malta | 0.895 | 0.918 | ▲ 0.023 | 83.8 | 16.8 | 12.2 | 38,884 |
| 24 | Slovenia | 0.917 | 0.918 | ▲ 0.001 | 80.7 | 17.7 | 12.8 | 39,746 |
| 25 | Austria | 0.922 | 0.916 | ▼ -0.006 | 81.6 | 16.0 | 12.3 | 53,619 |
| 26 | UAB | 0.890 | 0.911 | ▲ 0.021 | 78.7 | 15.7 | 12.7 | 62,574 |
| 27 | Spain | 0.904 | 0.905 | ▲ 0.001 | 83.0 | 17.9 | 10.6 | 38,354 |
| 28 | France | 0.901 | 0.903 | ▲ 0.002 | 82.5 | 15.8 | 11.6 | 45,937 |
| 29 | Cyprus | 0.887 | 0.896 | ▲ 0.009 | 81.2 | 15.6 | 12.4 | 38,188 |
| 30 | Italy | 0.892 | 0.895 | ▲ 0.003 | 82.9 | 16.2 | 10.7 | 42,840 |
| **31** | **ESTONIA** | **0.892** | **0.890** | ▼ **-0.002** | **77.1** | **15.9** | **13.5** | **38,048** |
| 35 | Lithuania | 0.882 | 0.875 | ▼ -0.007 | 73.7 | 16.3 | 13.5 | 37,931 |
| 39 | Latvia | 0.866 | 0.863 | ▼ -0.003 | 73.6 | 16.2 | 13.3 | 32,803 |
| 46 | Hungary | 0.854 | 0.846 | ▼ -0.008 | 74.5 | 15.0 | 12.2 | 32,789 |
| 52 | Russia | 0.824 | 0.822 | ▼ -0.002 | 69.4 | 15.8 | 12.8 | 27,166 |
| 77 | Ukraine | 0.779 | 0.773 | ▼ -0.006 | 71.6 | 15.0 | 11.1 | 13,256 |
| World | | 0.737 | 0.732 | ▼ -0.005 | 71.4 | 12.8 | 8.6 | 16,752 |
| Countries with very high human development | | 0.898 | 0.896 | ▼ -0.002 | 78.5 | 16.5 | 12.3 | 43,752 |

**SOURCE:** table by the authors, based on the UN 2021 report (HDR 2022)

The main components of the Human Development Index are life expectancy at birth, education (both expected and mean years of schooling) and GNI per capita at constant prices. The life expectancy of Estonians (77.1 years) and the country's GNI per capita (38,048 USD) are clearly below average among countries with a very high level of human development (this group includes 66 countries out of 191, with an average index value of 0.896). On the other hand, Estonia ranks relatively high in the average number of years of schooling (13.5 years). In addition, the difference between the expected and the actual mean years of schooling in Estonia is remarkably small compared to the other countries (Table 0.1).

In comparison with European countries, both the average life expectancy of Estonians and their healthy life years – another important indicator of population health – are below the European Union average. Both indicators show significant gender inequality: women have a higher average life expectancy and more healthy life years than men (Figure 0.1). On the other hand, men have a higher proportion of healthy life years (Estonian men 75%, European Union average 82%)

**Figure 0.1.** Average life expectancy and healthy life years at birth, in Estonia and the European Union (EU-27, 2020)




**SOURCE:** figure by the authors, based on Eurostat data (accessed on 28 October 2022)

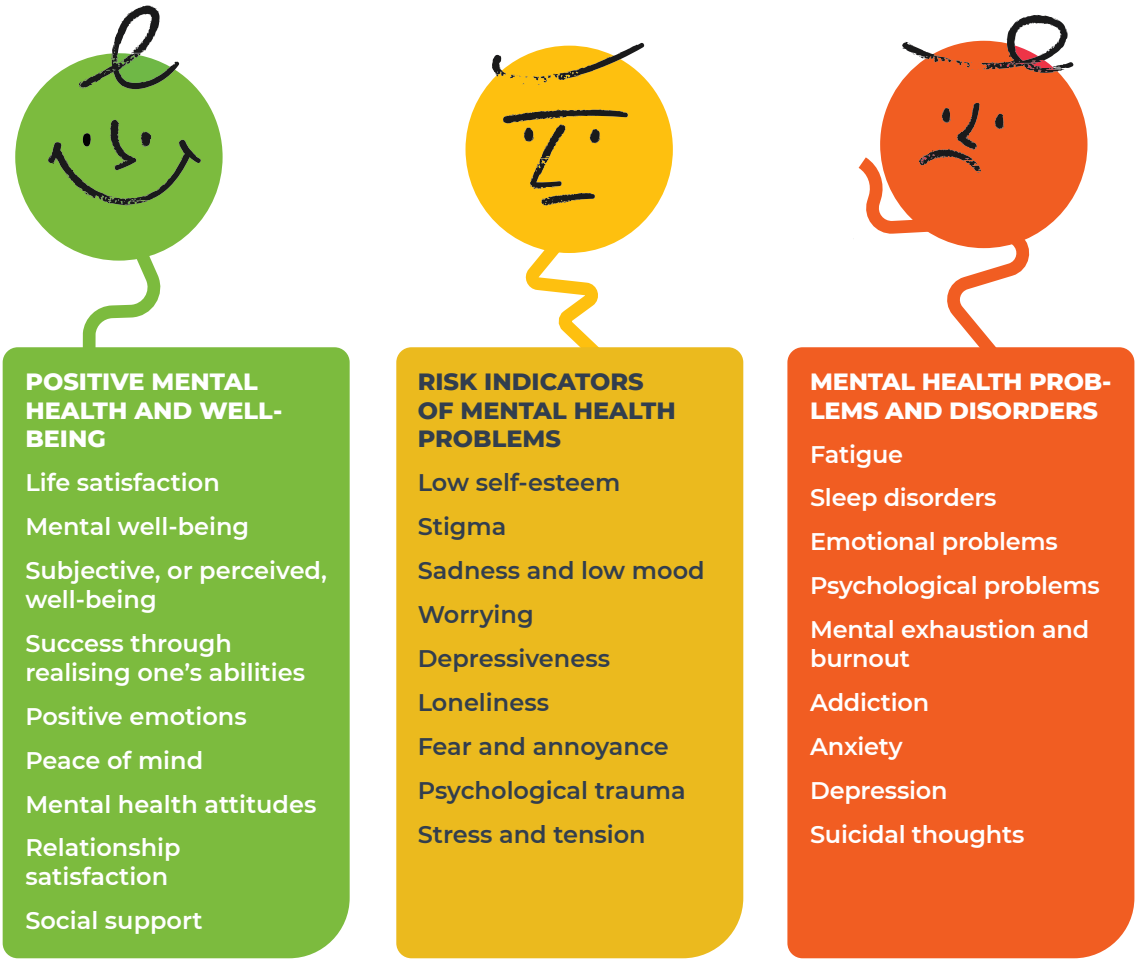
than women (Estonian women 72%, European Union average 78%). In Estonia, average life expectancy is marked not only by gender inequality but also by educational and regional inequality (Ministry of Social Affairs 2020a).

Mental health problems are among the top 10 causes of the global disease burden, with no improvements to this tendency in the past 30 years (GBD 2019 Mental Disorders Collaborators 2022). The most recent event to negatively impact average life expectancy has been the COVID-19 pandemic. The higher mortality related to the pandemic has affected the average mortality rates of the European Union since 2020 and the average rates of Estonia since 2021.

## How do we define mental health and well-being?

Our understanding of mental health and well-being and their determinants has changed over time. Medical approaches equate mental health problems with psychiatric disorders. Although acknowledging psychiatry as a medical speciality in its own right was a sign of progress, providing more effective mental health care requires psychosocial interventions and the contribution of professionals outside the healthcare field. Since the adoption of the Ottawa Charter for Health Promotion (WHO 1986), there has been a grow-

**Figure 0.2.** Mental health spectrum covered in this Estonian Human Development Report




**SOURCE:** figure by the authors, based on the chapters of this report

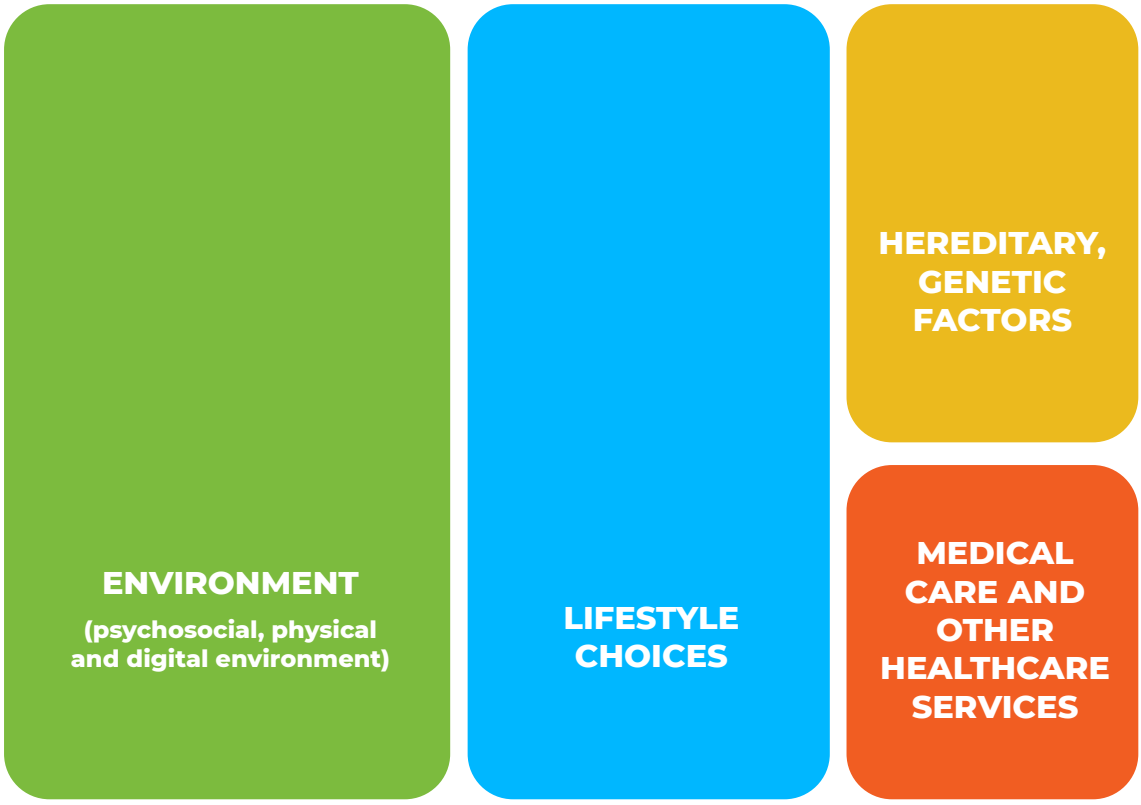
ing recognition that most health determinants, as well as most health solutions, lie outside the healthcare sector, with the focus increasingly shifting towards early recognition and prevention and the promotion of health in the wider community.

Because of its comprehensive scope, the definition of health in the Constitution of the World Health Organization remains relevant today: 'Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO 1946). But the WHO definition has also been criticised, saying that a state of complete well-being is unattainable for most people and is far removed from people's lived experience. Alternative definitions highlight adaptability to the environment and to changing conditions as an essential component of health (Frenk and Gómez-Dantés 2014). This makes it possible to view health as a coping resource, and one that can also be available in the presence of illness or disability.

**Most health determinants, and solutions, lie outside the healthcare sector, with the focus increasingly shifting towards early recognition and prevention and the promotion of health in the wider community.**

The WHO's definition for mental health does highlighting it as a resource but still treats it narrowly as a kind of mental state: 'Mental health is a state of well-being in which the individual realises his or her own abilities, can cope

**Figure 0.3.** Determinants of mental health and well-being in the population




**SOURCE:** figure by the authors based on Detels et al. (2015) and Tarlov (1999)

‘I see my parents work very hard as teachers. Their work does not end at school but often continues at home. I want people in Estonia to have more days off from work and school so that they can take time off for themselves. If people had more time for themselves, they could think about what really matters and find ways to improve life in Estonia – for themselves, their family and all of Estonia.’

**Saara Tosmin**, 12th grade, Tartu Hansa School

**SOURCE:** ‘What Kind of Estonia Do We Want?’, the Estonian president’s writing and idea session for school students, 2022

with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community.’ (WHO 2004). Other components of mental health that deserve recognition should be added to the WHO’s definition, such as internal equilibrium, the variability of emotional states, cognitive and social skills, emotion regulation, empathy, flexibility, and a harmonious relationship between body and mind (Galderisi et al. 2015).

Increasing average life expectancy and growing diagnostic capabilities in healthcare lead to a rising share of sick people and risk groups in society. Focusing on assessing medical conditions means monitoring indicators of mental health disorders and risks. Strategic approaches to mental health, on the other hand, could involve more indicators relating to mental well-being and coping potential. The definitions of mental health used in this Estonian Human Development Report cover a broad spectrum that can be divided into three segments: positive mental health and well-being; risk indicators of mental health problems; and mental health problems and disorders (Figure 0.2). Combining different approaches makes it possible to explore the mental health and well-being of the Estonian population in all its various aspects, through both a normative and measurable and a subjective and interpretive perspective.

## Factors determining mental health and well-being

Modern approaches to health suggest that a significant part of mental health and well-being is determined by factors unrelated to the healthcare field (Detels et al. 2015; Ministry of Social Affairs 2020b; Tarlov 1999; WHO 1986, 2022). While genetic factors and health services undoubtedly play an important role in a healthy life, determinants related to the environment and lifestyle actually have significantly more impact, although the exact balance between these factors depends on the circumstances (Figure 0.2). This Estonian Human Development Report explores mental health and well-being with an emphasis on the daily living environment (psychosocial, digital and physical environment) and personal lifestyle choices (health and risk behaviour).

Any approach to mental health and well-being should pay attention to vulnerability, or the interplay of determinants preceding the onset or aggravation of problems. Vulnerability does not

necessarily stem simply from belonging to a specific group, because anyone can be vulnerable under certain conditions. As humans, we are inherently vulnerable, and our well-being depends on cooperation. Vulnerability is greater at the beginning and end of the life course – in young children and older people. People may be more vulnerable during some stages of the life course that present important developmental tasks (e.g. adolescents or young adults of working age). Adverse life events, crises and traumas can cause temporary increased vulnerability. And finally, vulnerability can result from social conditions, such as people's skills and opportunities to find social inclusion (e.g. vulnerability resulting from a lack of digital competence).

As an overarching theme of the chapters of this report, we look at the challenges to mental health that arise with the increasing complexity and rising demands of life in society. In their daily lives, people face constant changes and the need to adapt, high demands and a cult of success. Both personal and social time have accelerated and been compressed (Vihalemm et al. 2017). From a mental health perspective, it is crucial to strike a balance between demands and available resources at work, in school and in caring for family members. Large-scale disruptions to this balance can significantly reduce a person's ability to function.

The opening chapter of this report provides an overview of the mental health and well-being of Estonian people in the 21st century from the perspective of life satisfaction, success, stress, mental health problems and interventions. General life satisfaction in Estonia has grown, and several of our mental health indicators now fall within the average range in a European comparison. Yet at the same time, we are seeing an increase in mental health problems, which is particularly alarming among adolescents and young adults. These seemingly paradoxical parallel trends of increased life satisfaction and increased mental health problems

**Any approach to mental health and well-being should pay attention to vulnerability, or the interplay of determinants preceding the onset or aggravation of problems.**

can probably be explained by the general improvement in the standard of living. We have reached a level in human development where our main focus is no longer survival but the quality of life, including the aspiration to be mentally healthy. While the prevalence of mental health problems signals that society needs to act, the increasing number of reported mental health disorders, especially those diagnosed and registered in the healthcare system, also carries a positive message. It suggests reduced stigmatisation, increased mental health awareness and people's willingness to seek help with their problems.

Following the time trends of Estonian mental health and well-being indicators, we see setbacks occur primarily in connection with transition periods and crises, most remarkably the COVID-19 pandemic of 2020 and 2021, which stands out starkly due to its broad and multifaceted impact. Some of its consequences include decreased well-being in children and increased stress levels in adults. In 2018, 19% of adults reported experiencing excessive stress, but by 2020, their share had grown to 52%. And while stress is not a mental health disorder in and of itself, excessive stress serves as a breeding ground for several serious mental health problems, such as anxiety, depression and suicidal thoughts.

As discussed in Chapter 2 of this report, a health-supporting lifestyle – adequate sleep, moderate physical activity, a healthy diet and abstaining from drugs – is associated with better mental well-being in all stages of the life course. The impact of these factors (both

‘As a child, I believe Estonia needs more outdoor activities. These days, almost the whole world is online, because the outside no longer offers many opportunities now that we have COVID lurking at every corner. The outdoors needs exciting activities that would invite people to join in. Towns in Estonia offer many attractions, but more remote places could also use some entertainment.’

**Hugo Toomingas**, fifth grade, Tallinn French Lyceum

**SOURCE:** ‘What Kind of Estonia Do We Want?’, the Estonian president’s writing and idea session for school students, 2022

positive and negative) can multiply as they accumulate. Lifestyle choices are not just personal choices that regulate behaviour. They largely depend on opportunities, socioeconomic inequality and the surrounding living environment, including spatial planning, proximity to nature, parental role models for children and young people, and social and physical inclusion in society for older people.

In Chapter 3 of this report, we see how important it is for people of any age to have a psychosocial environment that fosters mental well-being and how vital it is to cultivate such an environment. A stable and safe home and school environment is essential for children and young people. An encouraging learning environment and a healthy lifestyle support the mental well-being of young adults. For adults of working age, a stable work environment and work-life balance are the factors with the most impact. The mental well-being of older people largely depends not only on their family relationships but also on their inclusion in the wider community. Intergenerational contact is a factor that supports mental health and well-being all the way from early childhood to old age.

In our technology-driven life, the digital environment functions as both a psychosocial and a physical environment. As we integrate digital technologies into our daily lives, we must remember that in addition to online activities, our days must also include sufficient nutrition, exercise and sleep. As a psychosocial environment, the digital world has created many new opportunities for people to experience well-being – for example, by enabling long-distance communication with loved ones. But using these opportunities requires both access and sufficient competence, which continue to be unequally distributed in society (e.g. the generational digital divide). People’s vulnerability to the risks of the digital world depends not only on their competences

**The pyramid of Estonian mental health services is shaped more like an hourglass: people try to cope using self-care techniques, and if that fails, they turn to a psychiatrist or clinical psychologist, without first seeking help from the community or at the primary level.**

but also on their overall mental well-being ecosystem. The digital world today is not something separate from the 'real world'; it calls for the same values, traits and skills, including emotion regulation and time management. You can read more about the digital environment in Chapter 4 of this report.

There has been scarcely any research on the impact of the physical environment on mental health and well-being in Estonia so far. Chapter 5 of this report explores the topic from various perspectives. First, it looks at global climate change and related climate concerns, which can either decrease or increase mental well-being. Second, it approaches the topic from the perspective of annoyance caused by environmental effects (air and noise pollution). Third, it asks to what extent the spatial planning choices of an urbanised society enable social inclusion and a sense of community and facilitate direct contact with nature (green spaces and blue spaces). These choices have a significant impact on stress levels and thus on mental well-being.

The Green Paper on Mental Health (Ministry of Social Affairs 2020b) presents the optimal distribution of mental health services as a pyramid, with self-care as the foundation. We all need effective self-care techniques to cope with stress and strengthen our resilience in daily life, so emotion regulation and applying techniques to achieve peace of mind should be a natural part of our daily hygiene. Community care and community and primary healthcare services are located in the middle layers of the pyramid, while more expensive specialist mental health services (psychiatric and psychological care) form the top. Unfortunately, the pyramid of Estonian mental health services has so far been shaped more like an hourglass: people try to cope using self-care techniques, and if that fails, they turn to a psychiatrist or clinical psychologist, without first seeking help from the community or at the primary care level. And although it is true that the number of psychiatrists and psychologists in Estonia is far from sufficient, relying on them alone would be like relying only on the rescue services to respond to fires, or only on the police to respond to traffic accidents. Preventing accidents is more effective than waiting until they happen. The same principle applies in mental health: preventing problems is cheaper than treating them, and treating them is cheaper than doing nothing.

## The economic dimension of mental health problems

Mental health problems impose a high social and economic cost on society. The average total cost of mental health problems in the European Union (EU) amounts to 4% of the gross domestic product (GDP), or about 600 billion euros per year. In Estonia, this figure was 2.8%, or 880 million euros, in 2021 (OECD 2021a; OECD/EU 2018). About 30% of these costs are direct healthcare costs, 30% are social protection costs, and 40% are indirect costs related to reduced employment and productivity (OECD/EU 2018). The consequent loss of work capacity is what gives mental health problems a clear economic dimension and explains why the focus is shifting away from other health issues and onto mental health. Moreover, OECD calculations do not take into account all the indirect costs that may be involved, such as the increased need for social services and the treatment of concomitant physical diseases or the reduced work capacity of loved ones. Both the actual cost of mental health services and the need for them are unclear in Estonia, since the available information is fragmented, the costs are based on estimates, and many mental health disorders go undiagnosed (Foresight Centre 2020).

Estonia's healthcare expenditure, including for mental health, is relatively low. The EU average overall share of healthcare costs in GDP is 10.9%. In Estonia, it is 7.8% (OECD/EU 2022). During the COVID-19 pandemic, healthcare costs increased in most countries, in Estonia even more than elsewhere (OECD 2021b). Mental health costs account for an average 6.7% of the total healthcare budget in OECD countries but significantly less, 4.0%, in Estonia (OECD 2021a).

The economic toll from mental health problems and poor mental health may be huge, and ignoring it will come at a high price. Substantial savings could be made, however, with investments in prevention and early recognition (Le et al. 2021; McDaid et al. 2019; OECD 2021a). For depression and anxiety disorders, the return on investment has been calculated as five to one (WHO 2022). Given that various cost-effectiveness calculations often overlook indirect costs such as days missed from work, the real benefits of investing in mental health are likely to be even greater.

Governments only allocate a small share of their health budgets to prevention and promotion, even though most health outcomes are not linked to healthcare or treatment. In 2020, OECD countries spent 59% (65% in Estonia) on treatment and rehabilitation, 16% (9% in Estonia) on long-term care related to health, and 19% (20% in Estonia) on medical products, mainly medicines. The remaining 7% (6% in Estonia) was spent on collective services, which include prevention and public health, including the management and administration of healthcare systems (OECD 2022). Yet, investing in extensive and effective mental health prevention could significantly reduce the need for treatment.

**Investing in extensive and effective mental health prevention could significantly reduce the need for treatment.**

Globally, mental health problems account for a large percentage of disabled life years, with depression accounting for the second-largest percentage (5.6%) (WHO 2022). People's health behaviour and awareness play an essential role in prevention and result in financial gain as well as increased subjective well-being. For example, if the number of disability-adjusted life years caused by depression were reduced by even 1%, the gain would amount to 29 million euros per year. It is estimated that Estonians' health behaviour could reduce depression by 6,600 life years, which would mean a financial gain of 420 million euros per year (Foresight Centre 2020).

## SUMMARY

The idea for writing an Estonian Human Development Report on mental health and well-being was born out of concern for the mental health of the Estonian population. The authors soon realised that mental health has emerged as a broader and more substantial social issue than they had previously thought. In 2020, Estonia adopted a national mental health strategy in the form of a green paper, and a year later, a mental health department was set up at the Ministry of Social Affairs. In 2022, the government established a cross-sectoral commission for prevention. That same year, work started on the mental health action plan for 2023–2026, whose key topics included innovation, promotion, prevention and self-care, community care, mental health services, and crisis preparedness.

This Estonian Human Development Report explores mental health and well-being indicators from a broad perspective, placing less emphasis on disorders than has been done so far. It focuses on factors related to the living environment (psychosocial, digital and physical environment) and lifestyle choices as the key determinants of mental health. Disorder-oriented statistics are one of the reasons why mental health has primarily been associated with the healthcare field and treatment, and why relatively few resources are spent on prevention. A great deal more of these funds could be directed to education and culture, which offer more opportunities for innovation and flexible solutions for supporting mental health. Social innovation and social entrepreneurship can provide community-inclusive solutions, creating opportunities for people to participate in meaningful relationships and activities. While potential developments in health technologies and artificial intelligence could also provide solutions, there is still too little evidence-based data on their use for prevention in the mental health field.

Our aim in writing this report was not only to highlight problems and weak points but also to show the potential for solving them. The last chapter of the report explores four future scenarios that were developed based on the main global, regional and local trends affecting the future of the mental health field and on the views articulated in co-creative expert discussions. Where the mental health field is headed depends to a large extent on future policy choices and the willingness of people and communities to help find solutions.

**Disorder-oriented statistics are one of the reasons why mental health has primarily been associated with the healthcare field and treatment, and why relatively few resources are spent on prevention.**

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# Mental health stories from the past: Where do we come from?

**KEN KALLING**

For centuries, opinions have been voiced about the health of Estonian minds. First it was by strangers, who saw the local people as an object of study. And then it was by the Estonians themselves, who formulated their views on the matter in the late 19th century. This period, commonly known as the Age of Awakening, saw imported scientific ideas intersect with the emerging Estonian elite's inferiority complexes and burgeoning national ambitions. The question of Estonians' mental health emerged in various contexts, some examples of which are presented below.

Two hundred years ago, Baltic German scientist Karl Ernst von Baer thought that mental illness was uncommon among Estonians: 'This demonstrates the extent to which a cultured and refined way of life, a dangerously heightened imagination, and education, by sharpening sensibilities, contribute to the development of these diseases.' Soon, however, the situation changed, as Estonians gradually gained new rights and liberties and embarked on the course of national awakening. At the beginning of the 20th century, Estonian doctors Peeter Hellat and Juhan Luiga diagnosed many of their compatriots with a condition they called hysteria estonica. It was thought to be the 'malady of foreign ways', the kind that strikes those who have abandoned their traditional way of life. We see a parallel here with the labelling of women's emancipation, which was similarly centred on the concept of hysteria. Another condition believed to be widespread among the population was neurasthenia estonica, supposedly caused by the mental and physical stress related to urbanisation, the spread of school education, and so on.

**It was thought to be the 'malady of foreign ways', the kind that strikes those who have abandoned their traditional way of life.**


Dr Peeter Hellat (1857–1912)

These consequences of national emancipation, it was believed, hit the elite the hardest. In 1920, doctor Juhan Vilms wrote that to solve this problem, the whole nation needed to rise to a higher cultural plane, because then 'the burden of work would rest on everyone's shoulders'. Until that happened, the self-sacrificing efforts of a handful of intellectuals would lead to 'physical and nervous weakness, and therefore also limit the prospects of future generations, for it is known that intense physical and mental work has a dampening effect on sexual functions'. In 1940, the anthropologist Juhan Aul complained that city children were being pampered by the lack of physical work while being trained by their ambitious parents 'beyond the natural course of mental development, including by taking all kinds of lessons'.

The fear of tuberculosis and impaired vision were therefore not the only reasons for recommendations to shorten the period of schooling. In 1912, Marta Reichenbach-Riikoja, who later became a writer and translator, wrote: 'Mothers who have crooked spines, narrow hips and sagging breasts from sitting too much in school at a young age, who suffer from permanent fatigue and boredom with life – mothers such as these are what destroys our nation.' In the same year, writer and manor owner Peeter Lensin saw women's secondary education as guilty of fostering ambitions that could never be fulfilled, claiming it only produced women who were destined to end up as prostitutes or wander from one 'meeting' to the next. (The latter was an allusion to political activism.) Lensin, who believed that fulfilling a mother's role came first, maintained that learning housekeeping skills was all the training women needed. His argument was that the average female brain was smaller than the average male brain. The implication was that it was not as well adapted to the stresses of learning.

**The whole nation needs to rise to a higher cultural plane to solve the problem.**

It was clear that history and circumstances had not been kind to Estonians. When it came to discussions about mental health, however, some wondered whether, in addition to the external circumstances that shaped Estonians' character and diagnoses, part of our mental health was also shaped by our 'racial' attributes. Baer, who believed that the majority of Estonians were phlegmatic and the minority melancholic, spoke in the 19th century about rural people's cruelty toward the weak. A century later, Vladimir Chizh, professor of psychiatry at the University of Tartu, compared the criminal behaviour of Latvians and Estonians and believed that the latter were more violent. He claimed that even the most trivial quarrels among Estonians could end in murder. The rate of infanticide was also higher among Estonians, and it was tempting to ascribe this to the lack of communal empathy shown towards unmarried mothers (the ones typically responsible for this type of crime).

**Biological determinism was difficult to accept for Estonian thinkers, who had to trust in the possibility of change by, for example, fostering a more caring society.**

Chizh, who maintained that Estonians and Latvians belonged to different 'races', believed that his work had demonstrated that criminality was an innate vice. Such biological determinism was difficult to accept for Estonian thinkers, who had to trust in the possibility of change by, for example, fostering a more caring society.

In 1913, doctor Peeter Hellat wrote that the spiritual life of Estonians could take a

Dr Vladimir Chizh (1855–1922)

turn for the better only after 'our people rid themselves of another rudiment of perpetual agony and darkness: the beating of children'. Hellat believed that any kind of violence robs the nation of a future because 'a weak plant that grew under such conditions snaps and withers more easily under the depravities and hardships of life'. Hellat also wrote: 'We have no yardstick for measuring to what extent thousands of years of violence against women has eroded the strength, health and mental reach of humanity.' Hellat was referring to injustice against women in general, but today his remarks call to mind issues of domestic violence and alcohol abuse.

The temperance movement emerged as one of the central components of Estonian nationalism by the end of the 19th century, mainly because alcohol abuse was believed to contribute to the extinction of small nations. Psychiatrist Juhan Luiga wrote in 1910: 'Only degenerate nations can disappear.' In 1922, educator Peeter Põld asserted: 'Even moderate alcohol consumption in parents – and this has been scientifically established without dispute – increases sickliness, dullness, sluggishness and various nervous diseases among children that lead to ruination and decrepitude.' Thus, in addition to hindering population growth, alcohol was also seen as an obstacle to edification.

Considerations of the population's health and quality, or ideas of 'breed improvement', caused the temperance movement to branch out into the eugenics movement in Estonia. The members of the Eugenics Society, founded in 1924, believed that: 'A nation can survive in the struggle for existence only if it contains the most people possible who are endowed with good physical and mental qualities, character and moral strength.' Eugenics overstated the role of heredity: 'The abilities of both a normal person and a genius are predetermined by heredity; this is the great destiny that determines the path and accomplishments of each person.' Mental disorders were believed to be primarily hereditary (congenital), and experience showed that in most cases, they were also incurable (this was before the pharmacological revolution). And so there were efforts to limit the reproductive capacity of people with psychiatric diagnoses. This was facilitated by the law enabling forced sterilisation that came into force in 1937.

Regrettably, heredity was also associated with areas of life in which biological determinism is not recognised today, and psychiatric diagnoses were often misapplied. For instance, economic considerations were used as a pretext in calls to limit 'the number of feeble-minded children of feeble-minded unmarried mothers, all of whom remain in the care of society'. Terms such as 'unmarried' and 'number of children' were enough to elicit a diagnosis.

However, social policy carried out via the surgeon's scalpel was seen as an extreme position. The same can be said about eugenic, views whose proponents suggested leaving some areas of mental health (such as alcoholism and suicide) to 'natural selection'. Finding the right diagnosis was not considered enough

**In addition to hindering population growth, alcohol was also seen as an obstacle to edification.**

Dr Juhan Luiga (1873–1927)

to improve the situation; the root cause of the problems was sought. The above examples of the 'nature versus nurture' debate in determining the root cause are characteristic of an era in which pharmacological capacity to improve mental health was still in its infancy and a healthcare and welfare system like the one we have today was far from being a reality. Alongside eugenic theories, there were moralising positions that saw 'pleasure culture' as a threat to mental health. But there were also those with a more realistic mindset. The Estonian Mental Health Association was founded in 1932 with the position that 'Many illnesses stem from worries, misery and humiliation.' Both lines of thought are still alive today, with molecular biology having replaced eugenics.

What modern-day Estonia has in common with 20th-century interwar Estonia is that the nation is free. Writing before Estonia became independent, Juhan Luiga lamented that 'we are tormented by nightmares on either side', referring to the German and Russian oppressors in our history. Today, we must work to overcome our own nightmares.

**In addition to hindering population growth, alcohol was also seen as an obstacle to edification.**


**An example of the instruments used by the temperance movement in Estonia in the first half of the 20th century**

**SOURCE:** an Estonian temperance movement postcard, author unknown, from Ken Kalling's private collection

# 1 Mental health in Estonia at the beginning of the 21st century

**PHOTO:** Gustavo Fring (Pexels)

# 1.0 INTRODUCTION

# 1.0 Introduction

## Mental health in Estonia at the beginning of the 21st century

KENN KONSTABEL

### KEY MESSAGES

1. **Mental health is a broader concept than the presence or absence of mental health problems. It refers to a state of well-being in which individuals can cope with the stresses of everyday life and realise their abilities.**
2. **Mental health problems are more widespread than commonly believed, and during the COVID-19 pandemic, they became even more prevalent. Self-report surveys show a much wider prevalence than indicated by registered cases.**
3. **Mental health problems can be effectively prevented and treated. Every euro invested in systemic intervention can save tens of euros in the long term.**

### INTRODUCTION

The World Health Organization (WHO 2001) defines mental health as 'a state of well-being in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community'. This definition says something crucial: mental health is more than the absence of a disorder or of 'ill-being'; it also involves acting meaningfully within the limits of one's abilities or extending those limits.

This chapter contains five articles that discuss both positive and negative mental health. The first three articles are based on the WHO's definition of mental health cited above: the topics are life satisfaction (Ainsaar and Konstabel), stress and coping with it (Lehto et al.) and success, or realising one's abilities (Täht et al.). The fourth article looks at the occurrence of mental health problems, risk factors and protective factors (Akkermann et al.). The fifth article discusses activities and services supporting mental health in the broadest sense – from prevention to specialist medical care (Randver et al.).

**Mental health is more than the absence of disorder or 'ill-being'.**

*'I'm not crazy – my mental health is fine. Don't send me these forms or I'll call the police.'*

A person invited to participate in the survey who apparently only read the title and so was not aware of the positive definition of mental health or the fact that everyone invited to take the survey could opt out, even without the help of the police.

## How and why should we talk about mental health?

People tend to notice and think about mental health only when something is wrong. Thinking can help fix mistakes, but it can also make things worse. At the individual level, a characteristic response is 'rumination' – thinking about a negative event over and over. This may help the person avoid similar situations in the future but mostly just prolongs feeling miserable. Looking at the mental health situation of the population, on the other hand, stigmatising a specific age group or emphasising the difficulty and hopelessness of problems can exacerbate the situation.

For example, what are we to make of the information that, based on a self-report survey at the beginning of 2021, more than 50% of 18-to-24-year-olds were at risk of depression in Estonia? One might think disaster is imminent and that to avoid it, the number of psychiatrists must be increased as soon as possible. However, this conclusion should be considered in the proper context. First, we know that during the pandemic, the prevalence of depression and anxiety also increased in other countries and age groups, and negative life events and difficult life periods often lead to symptoms that later subside. We also know that depression is less stigmatised among young people. Therefore, we can assume that younger respondents more readily recognise possible symptoms of depression. Finally, the risk of depression does not automatically translate into a clinical diagnosis.

**People tend to notice and think about mental health only when something is wrong.**

These considerations do not change the conclusion that the situation is serious and needs attention. But we must pay attention to details and how we interpret the information: we cannot expect the facts to speak for themselves. By changing the emphasis, the situation can be cast as hopeless, which is not useful and limits the possible courses of action (cf. Bandura 1997).

## Measurement and research

In this chapter, we use two main sources of information on population mental health: registry data and surveys. The primary registry data we use is the Estonian Health Insurance Fund's database, where a diagnosis is recorded when services are used or medicines prescribed. These diagnosed cases provide information about mental health disorders, but with an important caveat: only services financed by the Health Insurance Fund are reflected in the database, and the in-

*'How could I behave so inappropriately? What could they be thinking about me? What will happen now?'*

dividual must first seek help to receive a diagnosis. Thus, if we rely solely on data about diagnosed cases, we underestimate the rate of 'ill-being' in the population and learn nothing about the rate of well-being. On the other hand, registry data has important advantages over surveys. The diagnosis is based on a thorough assessment by a specialist; the entire population can be included (not just a sample); the subjects do not have to be approached separately; and uncertainty and bias due to insufficient response rates are avoided.

The questions used in mental health surveys will always involve a degree of subjectivity and ambiguity, which is why verifying the informational value of the questionnaire is particularly important. Information indicating the quality of a questionnaire is described with the blanket term 'validity' (Goldstein et al. 2011). Since questionnaires are a less expensive and less accurate tool than diagnoses made by a specialist, the predictions they provide are always approximate, but it is important to know their level of accuracy. One helpful way of describing accuracy is known as 'positive predictive value' (PPV): if a respondent is at risk of a disorder according to a test result, how likely is it that they actually have the disorder? For example, the EST-Q-2 depression scale used in the article by Akkermann et al. has a PPV of 0.44, which means that 44% of respondents with a

**Diagnosed cases provide information about mental health disorders.**

If we want to avoid making a decision based on incomplete information, we should leave it to the 'day after doomsday'. While this approach has its merits, it can be slow. Even when our judgement is based on the best evidence, something can go wrong. Mäe Tanil, a master shipbuilder from the island of Kihnu, knew this when he said: 'If you do nothing, you get nothing wrong. Do something, and you get something wrong.' (A quote from Kihnu Museum.) Science aims to reduce any uncertainty associated with measurement, but uncertainty cannot be completely eliminated.

**If we rely solely on data about diagnosed cases, we underestimate the rate of 'ill-being' in the population and learn nothing about the rate of well-being.**

score exceeding the risk threshold would receive a diagnosis of depression based on the interview. That is a fairly good level of accuracy in this area.

For health and social policy planning, it is important to estimate the prevalence of disorders as accurately as possible: if we want to know the optimal number of psychologists or psychiatrists per 100,000 inhabitants, a 10% difference in the prevalence rate of the relevant disorders matters. Reliable conclusions about time trends and risk and protective factors can also be drawn from questionnaires with a less well established level of accuracy. Such conclusions are also important and can or could affect our everyday life: for example, knowing that a lack of sleep and physical activity are risk factors for depression (see Akkermann et al. in this chapter and Reile in Chapter 2).

## Determinants and interventions

According to a widely cited account (Tarlov 1999), the determinants of population health can be divided into four categories: genetic and biological characteristics, health behaviour, medical care, and social and environmental factors. Tarlov emphasises that the relative importance of these factors cannot be accurately assessed. However, Tarlov does provide a rough diagram in which social and environmental factors have the largest impact, followed by health behaviour and medical care in roughly equal proportions, and last, hereditary (genetic) differences. It is worth noting that these factors are not independent of each other. For example, social and environmental factors are largely mediated by health behaviour and medical care; medical care, in turn, depends on healthcare organisation, which is part of the social environment.

Complex human characteristics (e.g. behavioural patterns, personality traits, and mental health and related problems) arise from the interaction of genes and the environment, and they depend on many genes rather than just one or two. In this chapter, Akkermann et al. use the genetic risk score for depression, which encapsulates information on about a hundred known depression-related gene variants. The risk score is related to the likelihood of depression, but even with the highest risk score, a diagnosis of depression is far from certain, just as having the lowest possible risk score does not rule such a diagnosis out. Genetic characteristics are important but are not the only determinant.

In addition to genes, a number of environmental factors (see also Chapters 3 to 5) are known to affect the likelihood of mental health disorders. Factors that increase the likelihood of depression include physical, sexual and emotional abuse, stressful work, a sedentary lifestyle, and sleep disorders (Arango et al. 2021). Several of these factors are also discussed in the article by Akkermann et al. in this chapter; once again, the impact

**The determinants of population health can be divided into four categories: genetic and biological characteristics, health behaviour, medical care, and social and environmental factors.**

of these factors is a matter of probability rather than necessity.

Many indicators of mental and physical health are known to be associated with socioeconomic background factors, such as education, employment status and income (e.g. Marmot et al. 1991). Here, an important mediating factor is stress caused by low status, stressful work and poor living conditions, which in turn is amplified by health and risk behaviours such as smoking, lack of exercise and an unhealthy diet (McEwen 2002). With background factors, a large part of the effect is indirect, although direct effects are not impossible (e.g. better education provides better knowledge about health behaviour, and a better salary allows for a healthier diet).

So people themselves and communities working together can do a number of things to care for mental health. The article by Akkermann et al. in this chapter and the articles in Chapter 2 discuss key health behaviour factors that also affect mental health – sleep, exercise, nutrition and drug use. Ways of coping with stress, which are discussed in the article by Lehto et al. in this chapter, can also be described as health behaviour. All these factors can be modified, although changing behaviour patterns is not easy.

Society can affect how easy or difficult it is for people to make reasonable (desirable) health behaviour choices. Effective prevention and access to mental health care are important, and so are developing the right attitudes, reducing stigmas and providing health education (see Randver et al. in this chapter). Poor socioeconomic conditions and the stress that results from them are an indirect cause of both physical and mental health disorders. Such factors cannot be eliminated quickly, but measures that help reduce socioeconomic inequality or break the cycles of inequality persisting for generations are helpful (see Täht et al. in this chapter).

**Society can affect how easy or difficult it is for people to make reasonable (desirable) health behaviour choices.**

## SUMMARY

This chapter discusses mental health in a broad sense: we cover mental health problems, stress and coping with it, mental health services from prevention to specialist medical care, life satisfaction, and success. These topics derive from the WHO's definition of mental health.

Life satisfaction is a person's overall assessment of their life at a given moment: it depends both on their actual situation in life (e.g. health, education, employment status and income) and on mental health in a narrower sense (e.g. depressiveness, optimism and/or hopes for the future). Estonia is close to the European average in terms of life satisfaction. Life satisfaction increased both in Estonia and elsewhere in Europe in the decade before the pandemic.

Higher-than-usual stress levels occur more frequently among women and younger age groups, and the COVID-19 crisis has had a greater impact on women. The prevalence of stress in younger age groups rose sharply even a few years before the COVID-19 pandemic, and young people also experienced the most stress during the crisis. The rising stress levels during the COVID-19 crisis mainly concerned the health risks associated with the virus and overall uncertainty. Reasonable health behaviour and emotion regulation skills help reduce the negative effects of stress.

Success, or realising one's abilities, is an important component of mental health and well-being. Success in school and work depends on a person's home background. Success in school depends more on the educational resources accessed and attitudes encountered at home and less on the family's socioeconomic status. In Estonia, the position of children in education is not strongly limited by the economic situation of their parents. Estonians tend to have materialistic and individualistic work values: income is considered essential when choosing a job. However, this tendency is changing, and opportunities for achievement are becoming valued more highly. Success is also important as a determinant of mental and physical health. The more opportunities there are to get a good education or a job despite unfavourable background factors, the less need there is to deal with health problems caused by stress or poor quality of life. In other words, problems in education reproduce mental health problems.

Data indicate that mental health problems are widespread among the adult population of Estonia. Based on self-reports, one in four adults is at risk of depression, and one in five is at risk of generalised anxiety disorder. Young adults are at significantly higher risk. The risk of depression and anxiety disorders increased during the COVID-19 pandemic. These tendencies are similar to those in other European countries. Previous interview studies have probably underestimated the prevalence of depression and anxiety; the higher-than-usual stress levels found among young people even before the pandemic indirectly indicate this.

Preventing mental health problems is more cost-effective than treating them, and treating them is more cost-effective than not treating them at all. In Estonia, access to both prevention and treatment is limited, and the stigmatisation of mental health problems is an obstacle to receiving help. Early recognition and simpler care pathways would help improve the accessibility and effectiveness of treatment. Developing socio-emotional and self-care skills and creating an environment that supports mental health is necessary to prevent problems.

> Higher education is a value in itself for everyone: it offers the opportunity to realise, develop and educate oneself; it allows one to better understand oneself and others; and it creates the prerequisites for an informed, healthy and fulfilling life.
>
> **Marek Tamm,**
> *Postimees*, 21 June 2022

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# 1.1
# Life satisfaction in Estonia

MARE AINSAAR AND KENN KONSTABEL

## KEY MESSAGE

**Life satisfaction in Estonia continues to grow, although the COVID-19 pandemic brought some setbacks. The life satisfaction of Estonians falls within the European average. In 2022, life satisfaction was influenced not only by several mental health factors, such as depressiveness and COVID stress, but also by optimism and a hopeful view of the future. Mental health problems might be the reason why average life satisfaction fell slightly year on year by the beginning of 2022.**

## INTRODUCTION

Life satisfaction is one of the most important indicators of individual quality of life and subjective well-being. It represents a person's overall assessment of the different aspects of their life. There are various indicators for assessing subjective well-being, most of which express either a ratio of positive and negative emotions, general life satisfaction, or satisfaction related to specific areas of life (Brulé and Maggino 2021; Sirgy 2020). Life satisfaction is one of the most commonly used indicators of subjective well-being and reflects the gap between the imagined good life and reality. Life satisfaction is primarily the outcome of an evaluation of aspirations and achievements (Haller and Hadler 2006) and is related to all significant indicators of the quality of life in society, including health, economic situation, democracy, social relations, work, trust, etc. (Graham 2009).

Previous studies in Estonia have shown that the transition period that began with the restoration of national independence in 1991 led to a decline in life satisfaction (Ainsaar 2011). Only a third of the population was satisfied with their lives in 1996, and the satisfaction of different age and education groups was increasingly stratified (Easterlin 2009; Ainsaar 2011). The year 1996 marked the beginning of a stabilisation period that followed the era of rapid transition. The restructuring of the economy brought along a drop in employment and a rise in unemployment. As wealth increased, life satisfaction began to grow. By 2002–2003, life satisfaction reached the 1990 level. The period from 2002 to 2008 saw rapid economic growth and increased life satisfaction. However, the economy was not the only factor influencing life satisfaction, as this was also dependent on gender, age, health, trust and social support (Ainsaar 2006; Ainsaar 2008b). The increase in life satisfaction continued until 2006–2008. Unsurprisingly, the economic crisis that followed in 2009 led to a decrease in life

**Life satisfaction reflects the gap between the imagined good life and reality.**

**The more economically developed the country, the more complex the relationship between income and satisfaction**

satisfaction, a decline in income and cuts in social spending. Unemployment rates rose back to 2001 levels.

Previous studies have shown that, in addition to economic situation, factors that boost life satisfaction are good health and trust in people (Suldo and Huebner 2006; Ainsaar 2008b). Economic situation affects satisfaction both directly and through various coping mechanisms and changes in people's competitiveness. Looking back at the research conducted thus far, Graham (2009) concludes that the more economically developed the country, the more complex the relationship between income and life satisfaction. After reaching a certain level of economic well-being, people possess more freedom to choose between different preferences. Some may want to exchange the security of a higher income for other non-material benefits. The phenomenon of economic wealth is believed to lie in the fact that greater wealth gives people the freedom to use their resources, while having a lower income forces people to focus on meeting basic needs (Drakopoulos 2008). Drakopoulos notes, however, that taking care of basic needs has a stronger positive effect on happiness than addressing higher-level needs.

This article provides an overview of the changes in Estonians' life satisfaction over time and compares these with those of other countries and between different sociodemographic groups. In particular, we will be looking at the period between 2008 and 2021, which covers both the rapid economic growth that followed the 2009 crisis and the COVID-19 crisis of 2020–2021. In addition to presenting descriptive time series, the article analyses how life satisfaction interacts with self-rated health, income, social status and trust in other people. The last part of the article explores the relationship between life satisfaction and health, including mental health, looking specifically at the period that started with the spread of the coronavirus in 2020.

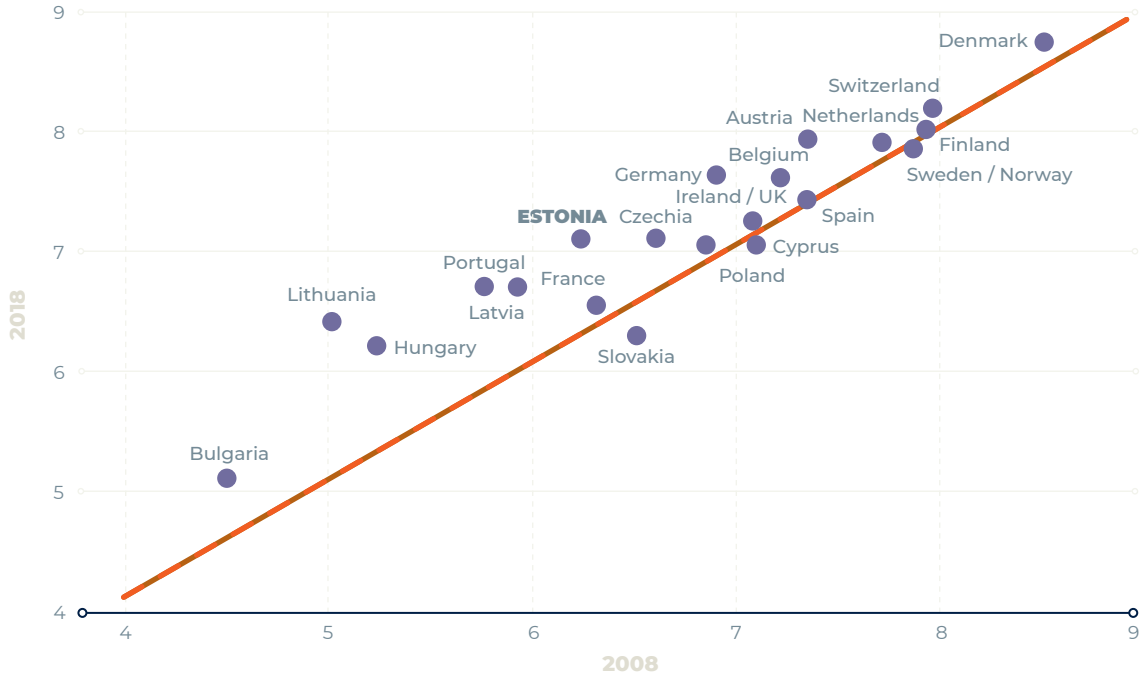
We rely on data from the 2004–2021 European Social Survey (ESS) and the 2021–2022 Estonian National Mental Health Study. To measure life satisfaction, we use the question about general subjective well-being: 'All things considered, how satisfied are you with your life as a whole nowadays? Please answer on a scale of 0 to 10, where 0 means extremely dissatisfied and 10 means extremely satisfied.' Our graphics display the share of respondents whose answers ranged from 6 to 10 (i.e. they were at least somewhat satisfied with life).

## Life satisfaction in Estonia is average compared to other countries

Between 2008 and 2018, the life satisfaction of Europeans generally increased. In Estonia, this increase was even faster than in other countries (Figure 1.1.1). In 2008, Estonia was among the countries with a below-average level of life satisfaction. Ten years later, while Estonia has still not caught up with the Nordic countries, its average satisfaction matches that of Poland, Ireland and the United Kingdom, to name a few. Throughout the Estonian population, the share of people who feel at least somewhat satisfied with their lives has increased: it was 60% in 1990, 37% in 1996, 56% in 2002, 64% in 2008, 79% in 2018 and 84% in 2021.

The studies conducted in Estonia before and during the COVID-19 pandemic enable us to take a more detailed look at how life satisfaction changed during

**Figure 1.1.1.** Average life satisfaction among people aged 15 and over in European countries in 2008 and 2018 (scale: 0 – extremely dissatisfied, 10 – extremely satisfied; a linear trendline is shown in red)



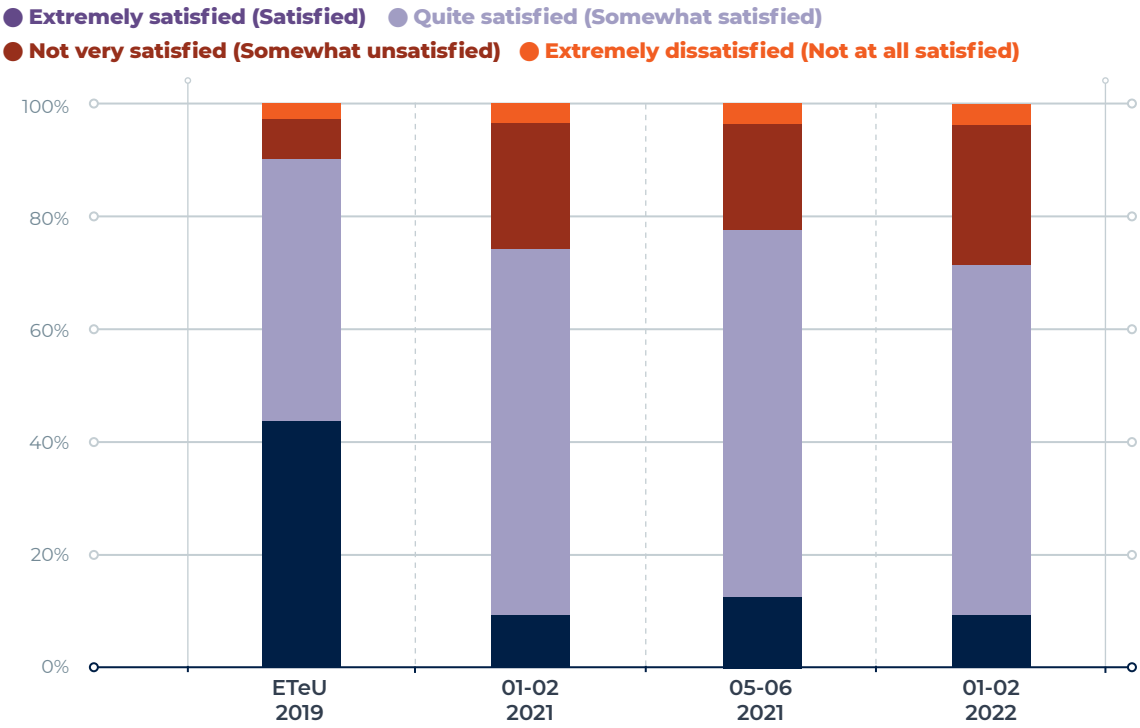

**SOURCE:** figure by the authors, based on ESS data from 2008 and 2018

**Between 2008 and 2018, the life satisfaction of Europeans generally increased. In Estonia, this increase was even faster than in other countries.**

this period (Figure 1.1.2). We used data from the 2019 Estonian Health Interview Survey and the 2021 and 2022 Estonian National Mental Health Study. The samples of these studies and their questions about life satisfaction differ from those of the ESS and thus are not comparable to them. Nevertheless, these data enabled us to conduct a more targeted temporal analysis of the COVID-19 pandemic era. The analysis revealed that the share of respondents who are at least somewhat satisfied with life has statistically significantly decreased between 2019 and February 2021 (90% in 2019, 76% in early 2021, 79% in the spring/summer of 2021, 72% in early 2022). The decrease in life satisfaction between 2019 and 2021 was likely brought on by the COVID-19 crisis and related socioeconomic problems. The differences were smaller but also statistically significant between the three waves of the Estonian National Mental Health Study conducted in 2021 and 2022. In May and June 2021, the share of people satisfied with life was slightly higher than in the first winter months of 2021 and 2022, when the coronavirus caused greater problems and society was under more pressure (Figure 1.1.2).

**The decrease in life satisfaction between 2019 and 2021 was likely brought on by the COVID-19 crisis and related socioeconomic problems.**

**Figure 1.1.2.** Life satisfaction among the Estonian adult population in 2019, 2021 and 2022




**SOURCE:** figure by the authors, based on data from Estonian Health Interview Survey 2019 (online respondents) and Estonian National Mental Health Study 2021–2022

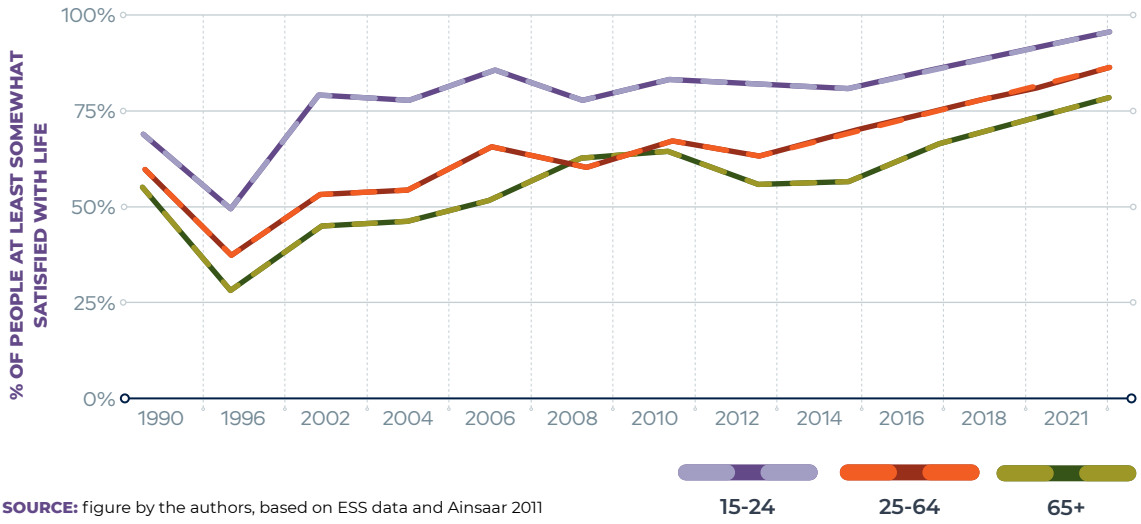
## Life satisfaction varies across socio-demographic groups

In the following, we will examine the relationship between life satisfaction and age, employment status, income and health. There have been no systematic studies on differences in life satisfaction in Estonia based on gender. However, empirical data show that in some years, women and men report the same level of life satisfaction, while in other years, women are more satisfied with life than men. As we could find no clear pattern in this category, we concluded that this topic requires separate, in-depth treatment.

One of the models often cited in the literature is the U-shaped curve in satisfaction – the idea that younger and older people are more satisfied with life than middle-aged people (Easterlin 2006). Realo and Dobewall (2011) have also found signs of U-shaped life satisfaction in Estonia, attributing it to both contemporary and generational effects. However, the long time series shows that while the life satisfaction of older people in Estonia has grown at the same pace as that of working-age people, it is not as high (Figure 1.1.3). It is only during the few years of crises in the early 1990s and again in 2008 and 2009 that the life satisfaction of older people is relatively close to that of working-age people. Although life satisfaction increased in both older people and working-age people between 2018 and 2021, the gap between the two age groups did not change.

**Life satisfaction follows a U-shaped curve, where younger and older people are more satisfied with life than middle-aged people.**

**Figure 1.1.3.** Share of people at least somewhat satisfied with life in different age groups in Estonia between 1990 and 2021

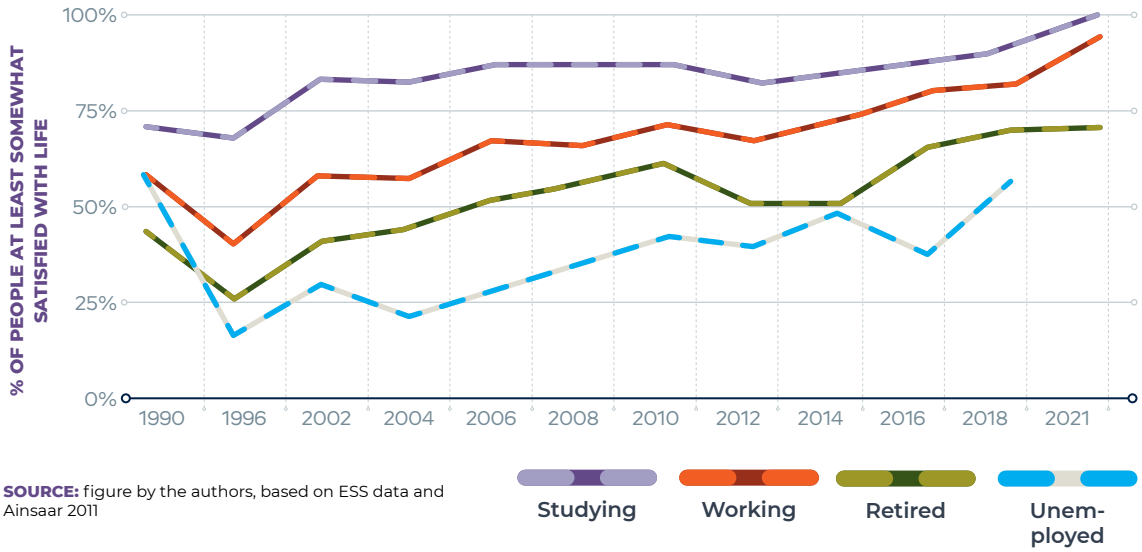



**SOURCE:** figure by the authors, based on ESS data and Ainsaar 2011

As expected, young people have the highest life satisfaction ratings of all the groups. And out of all the groups, theirs changed the least after 2008. The high life satisfaction of young people has also been observed in past studies, both in Estonia and internationally (Ainsaar 2008a). The share of people aged 15 to 24 in Estonia who are not satisfied with life is remarkably small: 5% in 2021.

In the following, we will compare life satisfaction between social groups with different employment statuses, looking at students, unemployed people and retired people versus working people (Figure 1.1.4). Although work-related activities are related to age, this relationship is not definitive. In Estonia, many people continue to work after reaching retirement age, not all young people are students, and working-age people include not only those who are employed but also those who are unemployed and out of the labour market. The number of people with

**Figure 1.1.4.** Share of people at least somewhat satisfied with life in groups with different employment statuses in Estonia between 1990 and 2021




**SOURCE:** figure by the authors, based on ESS data and Ainsaar 2011

different employment statuses and these groups' life satisfaction directly impacts the country's average life satisfaction indicators. For example, a large number of unemployed people can quickly reduce average life satisfaction.

Working people are the largest group in Estonia, and over the years, their life satisfaction has reflected the general life satisfaction trends in society: the year 1990 was followed by a decline that lasted until the mid-1990s, and the rise of the early 21st century was temporarily halted by the economic crisis of 2008–2009. When the economic crisis subsided, satisfaction continued its rapid growth, which did not stop even during the challenging years brought on by COVID-19.

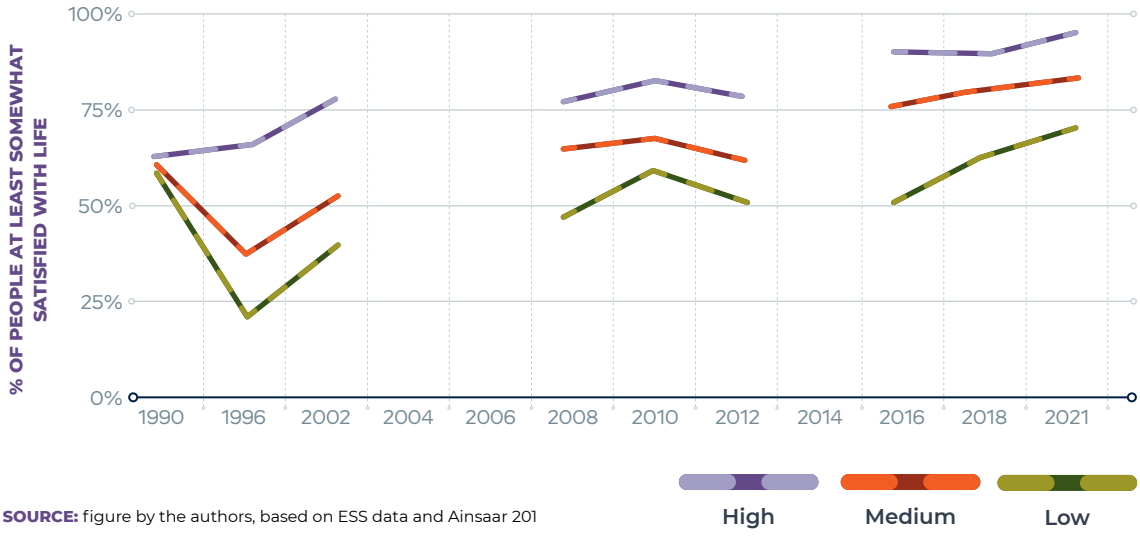
Even though the overall level of life satisfaction has increased, the gap between the life satisfaction of the wealthiest and the poorest continues to be significant (Figure 1.1.5). Between 2018 and 2021, life satisfaction increased in all income groups. Remarkably, even the poorest people were able to improve their life satisfaction.

Life satisfaction has a strong relationship with self-rated health (Ainsaar 2008a). Figure 1.1.6 shows that life satisfaction has increased in all groups and, as expected, differs depending on personal health. From 2018 to 2021, life satisfaction increased mainly in groups with good or satisfactory health, and the gap with the life satisfaction of the group with the worst health widened. It is noteworthy that, among people with the worst health, the rise in life satisfaction stopped.

## Regional differences in life satisfaction in Estonia are rather small

Where in Estonia are people most satisfied with life? In early 2022, the county with the highest level of satisfaction was Läänemaa, where 82% of respondents were satisfied or somewhat satisfied with life. There were five regions with a statistically significant difference from Läänemaa: Ida-Virumaa (59%), Pärnumaa (73%), Põlvamaa (71%), Tallinn (71%) and Võrumaa (70%). Regional differences

**Figure 1.1.5.** Share of people at least somewhat satisfied with life (score 6–10) in different income groups in Estonia between 1990 and 2021




**SOURCE:** figure by the authors, based on ESS data and Ainsaar 201

**NOTE:** Low, or the bottom two deciles: the strata of the poorest 20%; high, or the top two deciles: the wealthiest 20%; medium, or middle six deciles: the middle 60%.

in life satisfaction (especially in Ida-Viru-maa) can be largely – but not entirely – attributed to regional socioeconomic differences (e.g. different income and education).

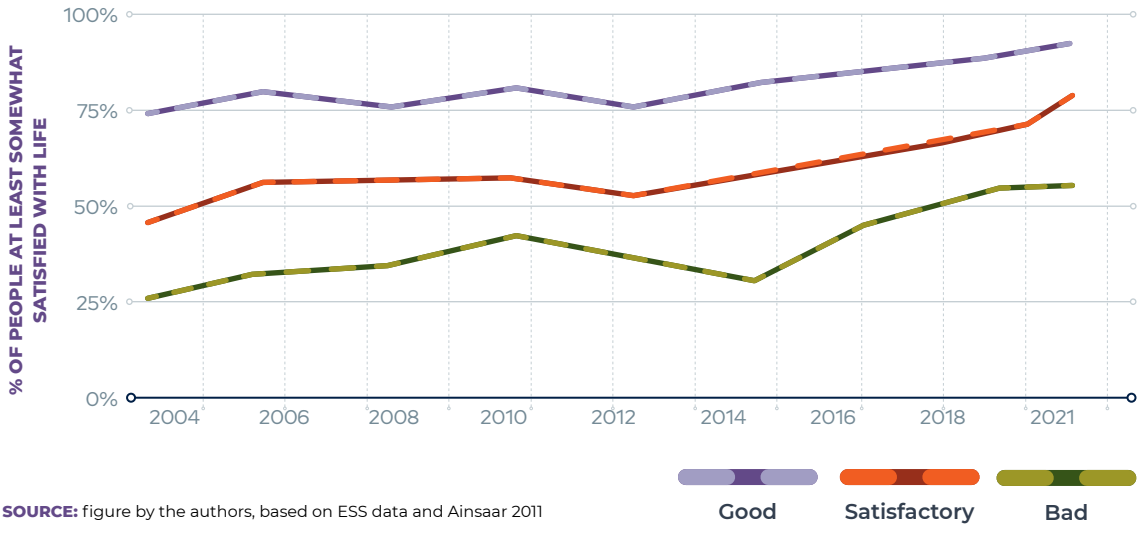
## Several mental health factors influenced life satisfaction in 2022

We have seen that life satisfaction depends on several different factors, such as age, education, income and health. But what is the contribution of these factors in interaction with and relative to each other? To find out, we used data compiled in early 2022 for the Estonian National Mental Health Study, which, in addition to the factors listed above, measured various mental health indicators. The COVID-19 pandemic led to increased mental health problems in the population (Consortium of the Estonian National Mental Health Study 2022), making it particularly relevant to include mental health indicators in a model analysing life satisfaction.

Figure 1.1.7 shows that, out of the factors discussed above, self-rated health had the strongest association with life satisfaction. Self-rated health has about as much influence as regional and social background, employment status (studying/working/unemployed) and income combined. The only mental health indicator that predicted the level of life satisfaction was depressiveness, and this association was extremely strong. The other indicators featured in our model are optimism and a hopeful view of the future ('optimism' in the figure), the level of stress the respondent experienced in connection to the COVID crisis ('COVID stress' in the figure) and the level of trust the respondent has in other people ('trust' in the figure). Taking all these variables into account, the model accounts for about 45% of the variability in life satisfaction.

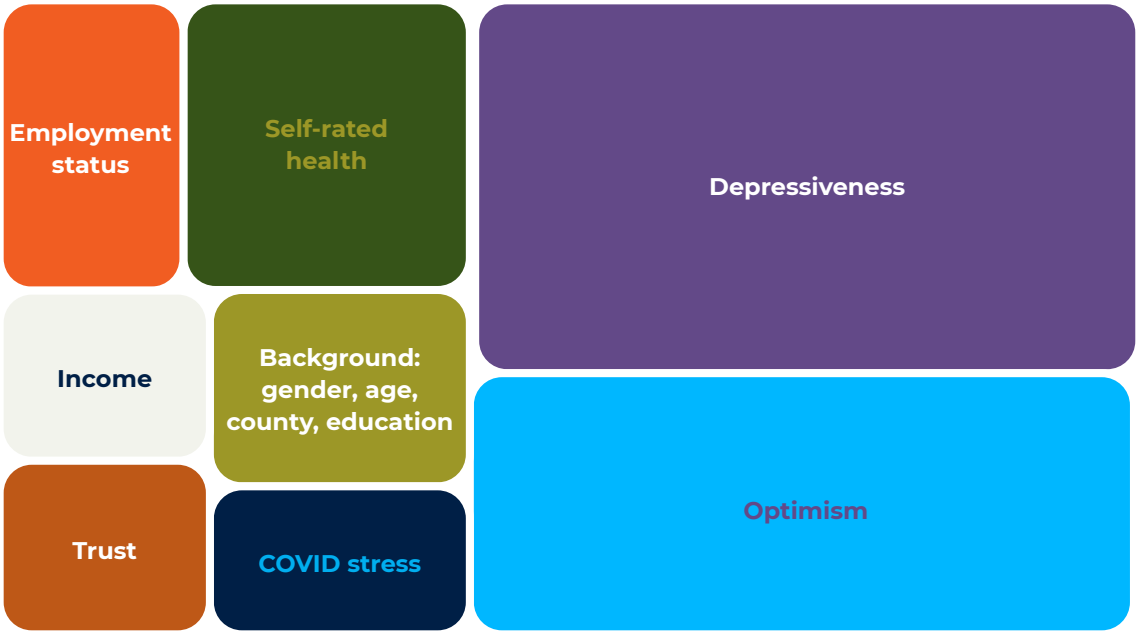
**The only mental health indicator that predicted the level of life satisfaction was depressiveness, and this association was extremely strong.**

**Figure 1.1.6.** Share of people at least somewhat satisfied with life (score 6–10) in different self-rated health groups in Estonia between 2004 and 2021




**SOURCE:** figure by the authors, based on ESS data and Ainsaar 2011

**Figure 1.1.7.** The relative influence of life satisfaction factors on life satisfaction in 2022




**SOURCE:** figure by the authors, based on weighted data compiled in January and February 2022 for the Estonian National Mental Health Study

**NOTE:** The figure is based on a linear model. The relative influence of factors has been modelled using dominance analysis (Budescu 1993).

## SUMMARY

This article aimed to provide an overview of changes in Estonians' life satisfaction over three decades and to analyse the factors that influenced life satisfaction specifically in 2021 and 2022. The data showed that life satisfaction has increased in Estonia as well as Europe, both in the long term and over the last decade, and that the increase in Estonia has been even faster than in other countries. In general, the life satisfaction of Estonians falls within the European average. The COVID-19 pandemic had a negative impact on life satisfaction: average life satisfaction fell slightly from the beginning of 2021 to the beginning of 2022.

Life satisfaction in Estonia depends on age, income, health, employment status and several other factors. In 2022, for example, the factors with the strongest influence on life satisfaction were related to mental health and included depressive tendencies, COVID stress, and optimism and a hopeful view of the future. Employment status and income combined have a stronger influence on life satisfaction than demographic factors. Health is a more important factor than income in influencing satisfaction.

**Employment status and income combined have a stronger influence on life satisfaction than demographic factors. Health is a more important factor than income in influencing satisfaction.**

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# 1.2
# Stress and coping with it: The COVID-19 pandemic in Estonia

**KELLI LEHTO, KAIA LAIDRA, KAIRI KREEGIPUU, KADRI KÕIV, RAINER REILE AND ANDERO UUSBERG**

## KEY MESSAGE

**Stress is an important factor influencing human well-being. It is more frequent in women and younger age groups. With the COVID-19 crisis, many Estonians experienced rising stress levels, which mainly concerned the health risks associated with the disease and overall uncertainty. Although the causes of stress are often beyond our control, anyone can mitigate the harmful effects of stress on well-being by using various emotion regulation skills.**

## INTRODUCTION

All living things have to cope with environmental changes and respond to challenges in order to survive. Every now and then, the quantity or difficulty of these trials can become too much and trigger a state of emotional tension or stress. Accumulating stress and unsuccessful attempts to tackle it can have a strong negative effect on well-being and mental health. For example, the COVID-19 pandemic, with its health risks, uncertainty, restrictions and other stressors, raised stress levels for many Estonians.

This article looks at the perceived stress levels among the Estonian population, including their changes both in the long term and in the context of the COVID-19 crisis. We will also present strategies that help people cope better with stress and reduce its negative effects.

There are many ways to assess stress and the ability to cope with it. In this article, we will rely on self-reported indicators of perceived stress from population-based studies. A self-report questionnaire is a convenient and valid tool for assessing the prevalence of stress, since the activation of a stress response depends in large part on how people perceive situations and stimuli (Roddenberry and Renk 2010).

More specifically, we will use data from the Health Behaviour among the Estonian Adult Population survey, which has been conducted every two years since 1990; the Estonian Biobank Mental Health Online Survey conducted in the spring of 2021 by the Estonian Genome Centre at the University of Tartu; the 2021–2022 Estonian National Mental Health Study; and the population-based survey Awareness of COVID-19 and Related Attitudes in Estonia (a COVID-19 rapid survey), conducted by the National Institute for Health Development in 2020–2021.

## What is stress?

Stress is the body's natural response to environmental changes and challenges. The word 'stress' can have slightly different meanings in different contexts, but here we use it to describe a relatively constant state of mental and physical tension that has been triggered in response to a perceived threat. The same definition is reflected in the questions that respondents are usually asked in self-report surveys measuring stress levels: 'Have you been stressed, under pressure?' and 'Considering everything that is going on in your life, how much stress have you experienced lately?'

Stress is generally caused by the interaction of three components:

(1) a stressor, i.e. a potentially dangerous stimulus in the organism's internal or external environment;
(2) perceiving the stimulus as exceeding the available coping resources;
(3) a physiological and emotional response that mobilises resources to cope with the stressor.

Any change in the internal or external environment of an organism that can disturb its equilibrium can become a stressor (Selye 1976). In a narrower sense, this disturbance is caused by stressors that disrupt the body's homeostatic equilibrium (defined as an appropriate range of temperature, fluid content or nutrients). In a broader sense, it is caused by stressors that threaten the achievement of a psychological goal, such as a short deadline for a work assignment, an important exam, or the fear of contracting COVID.

While environmental stressors are necessary for stress to occur, they alone do not trigger stress. The same situation – for example, self-isolation due to COVID – may cause stress in one person but not in another. This difference is due to the second component of stress, i.e. perceiving the stressor as exceeding available coping resources. Here, coping resources can be not only opportunities or skills but also various aids and people to turn to for help. Resources that help people cope with self-isolation, for example, include the possibility to work remotely and having time management skills. Therefore, a stressor triggers a stress response when the individual feels that the stressor poses a significant threat to them and that they lack the resources to cope with the stressor and keep the situation under control (Lazarus and Folkman 1984).

**Stress is a relatively constant state of mental and physical tension that has been triggered in response to a perceived threat.**

When perceived as a demand that exceeds available resources, the stressor triggers a series of interrelated changes in the body and mind. There are two main bodily systems that respond to it: the sympathetic nervous system[1] and the hypothalamic-pituitary-adrenal axis.[2] Together, they produce wide-ranging changes throughout the body, increasing the heart rate and respiratory rate, raising blood pressure and blood sugar levels and increasing blood flow to the muscles, liver and brain. These changes aim to help the body mobilise itself in order to cope effectively with the encountered stressor.

1 The part of the autonomic or involuntary nervous system that, when activated, causes the heart rate to rise, the blood vessels to constrict, the blood pressure to rise, the pupils to dilate, the metabolism to slow down, and so on.

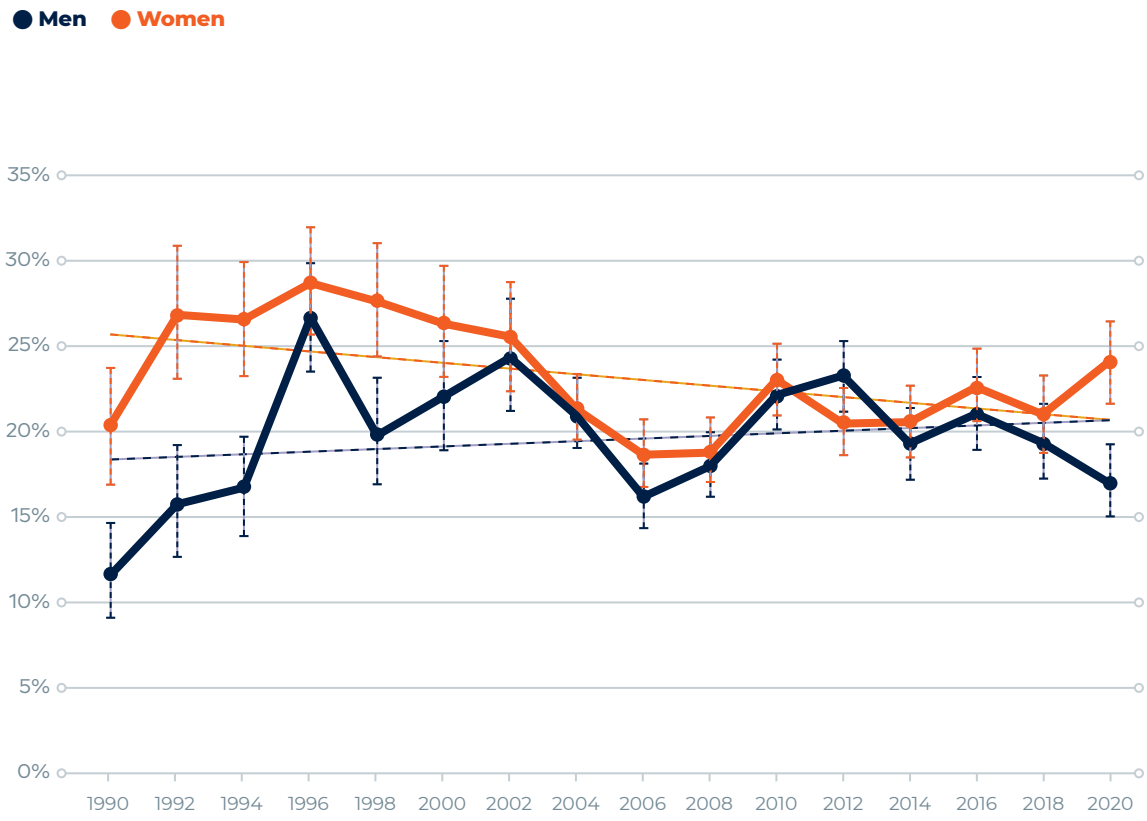
2 A system that regulates the release of stress hormones in the adrenal glands, thereby influencing many bodily functions.

A physical stress response is usually accompanied by mental changes. On the one hand, there is a sense of what people describe as unpleasant tension, worry and also stress. On the other hand, stress directs attention and other cognitive resources to processing information related to the situation. Just as the physical stress response helps the body prepare for exertion, mental changes related to stress help the mind to cope with the challenge being faced. As an unpleasant feeling, stress drives people to take action to relieve the tension they are experiencing. Investing cognitive resources increases the likelihood of that action having an effect.

Behaviours that are driven and amplified by the stress response are often effective, and as a result, the problem is resolved more quickly than under normal circumstances. Where such behaviour is ineffective, however, the person may experience a prolonged state of stress. A long-term or chronic stress response strains the body and increases susceptibility to various physical and mental illnesses.

**A long-term or chronic stress response strains the body and increases susceptibility to various physical and mental illnesses.**

**Figure 1.2.1.** Prevalence of higher stress levels with 95% confidence intervals and trend lines in women and men aged 16–64 in Estonia between 1990 and 2020




**SOURCE:** figure by the authors, based on the Health Behaviour among Estonian Adult Population survey data from 1990 to 2020

## How have the stress levels of Estonians changed since the restoration of independence?

In the Health Behaviour among Estonian Adult Population survey, perceived stress is assessed with a single question: 'In the last 30 days, have you been stressed, under pressure?' Figure 1.2.1 shows the prevalence of unbearable or higher-than-average stress levels based on the answers to this question, with 95% confidence intervals, among Estonian residents aged 16–64 in the period from 1990 to 2020.

In 1990, 11% of men and 20% of women experienced unbearable or more than average stress. Six years later, these rates rose to 27% in men and 29% in women. During this transition period, stress was statistically significantly more common among women than among men. Additionally, this period marks the fastest increase and the largest relative change in the prevalence of stress among both men and women. After 2002, the prevalence of stress in men and women has more or less converged. Stress levels fell for both men and women until 2006 and started rising again from 2008 onwards. The economic crisis that broke out in 2008 is one possible explanation. That conclusion is reinforced by the statistically significant increase in the prevalence of stress from 2008 to 2010. While the prevalence rate of stress in men has decreased slightly since 2016, in women, a change was brought about by the COVID-19 pandemic, which reached Estonia in the spring of 2020 (at the time of data collection for the study). The pandemic might help explain why the prevalence of stress, which had remained at comparable levels among men and women after 2002, is now statistically significantly different again: in the spring of 2020, 17% of men and 24% of women experienced heightened stress levels.

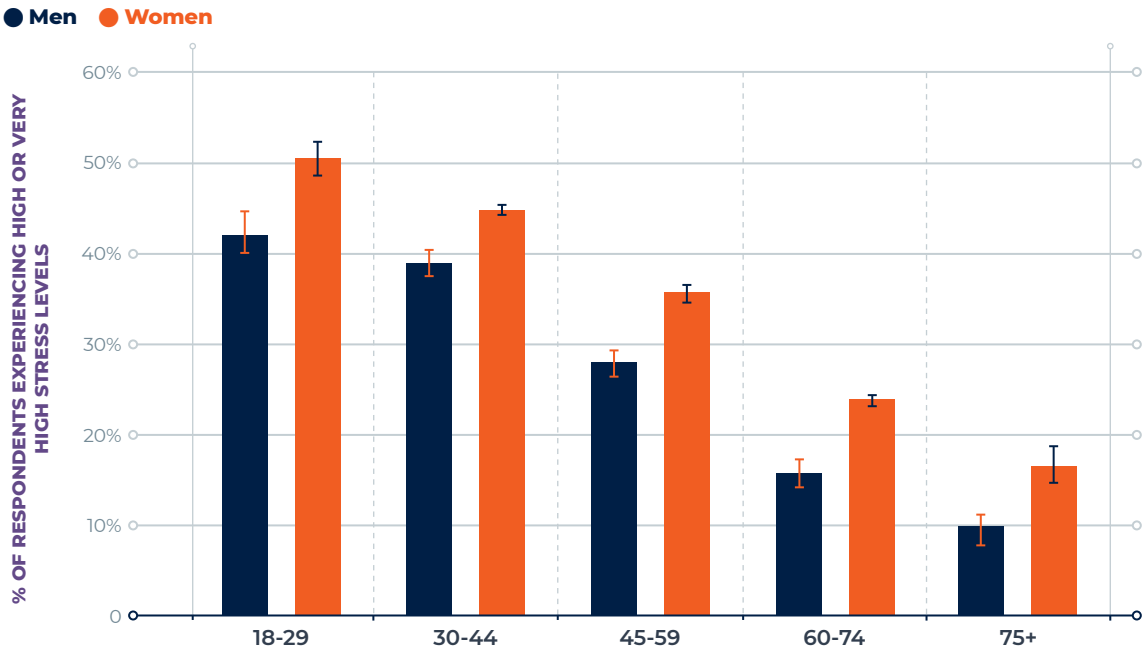
Across age groups, the long-term trend and dynamic of the prevalence of stress are quite similar to the general trend. The rapid increase in the prevalence of stress among people aged 16–29 compared to other age groups is a notable exception. In 2018, for example, 28% of people aged 16–29 felt stressed, while the same was true for only 15% of those aged 50–64. Although age differences have decreased in the 2020 data, higher levels of stress are still most common among 16-to-29-year-olds.

## How much stress did the COVID-19 crisis cause?

Because very different situations and circumstances can act as stressors, there is no way to list all the possible sources of stress for Estonians. That is why we have chosen to focus on the stress caused by the COVID-19 pandemic. The pandemic offers a unique opportunity to observe how a single event experienced by the vast majority of Estonians affected their stress levels. We will use this opportunity to answer two questions: how much stress did the COVID-19 crisis cause in Estonians, and which aspects of the crisis most contributed to this stress? To answer these questions, we will use data from the Estonian Biobank Mental Health Online Survey, the Estonian National Mental Health Study and the COVID-19 rapid survey.

The first of the three studies offers an initial glimpse into the stress caused by the coronavirus pandemic. The prevalence of stress was measured with the question 'Considering everything that is going on in your life, how stressed have you been lately?' Figure 1.2.2 shows the share of people who experienced high and very high levels of stress by gender and age group. The results demonstrated that, on average, women experienced more stress than men (38% of women and 30% of men had experienced high or

**Figure 1.2.2.** Share of respondents who experienced high or very high stress levels during the period of strict COVID restrictions in the spring of 2021, with 95% confidence intervals, by gender and age group



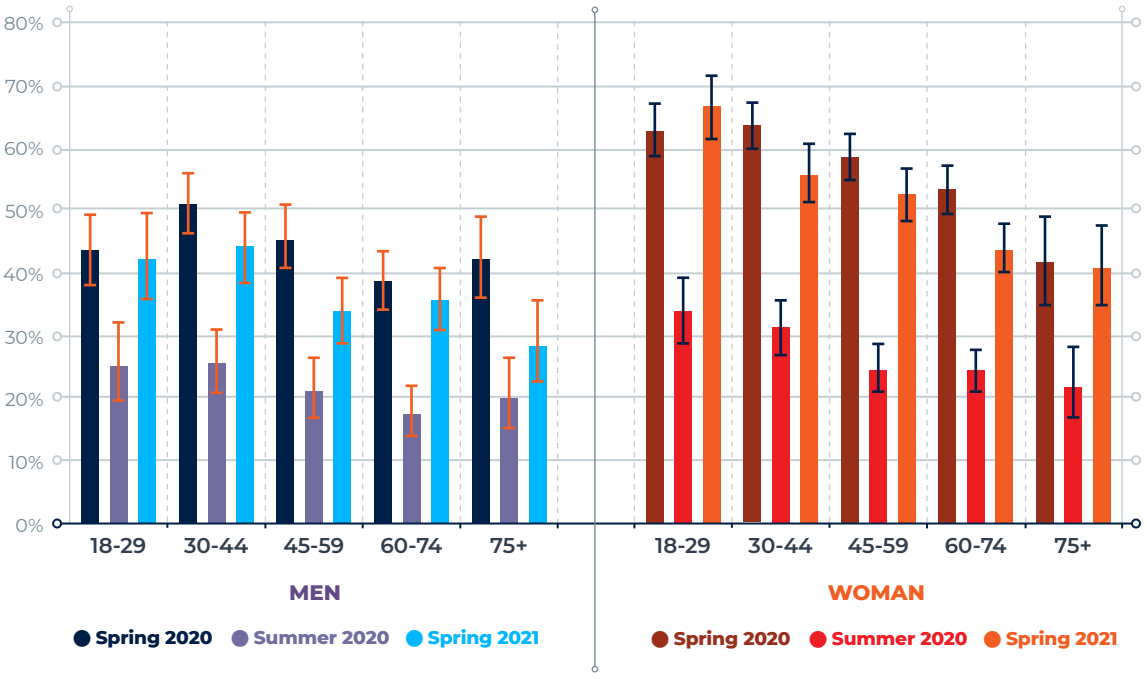

**SOURCE:** figure by the authors, based on data from the Estonian Biobank Mental Health Online Survey conducted in the spring of 2021 (N = 85,864)

very high levels of stress). In addition, the experience of stress was highly dependent on age. Respondents with a high stress level were most common in the youngest age group (50% of women, 43% of men). The share of people with high levels of stress decreased in each subsequent age group, reaching the lowest level in people aged 75 and older (17% of women and 10% of men).

Data from the COVID-19 rapid survey (Kender et al. 2021) provides another perspective on the dynamics of stress caused by the coronavirus pandemic. The online survey asked the same people how stressed or anxious they felt on three separate occasions: in April 2020, in June–July 2020 and again in April 2021. Based on the answers, the respondents were placed into two groups: (1) those who did not feel stressed or anxious at all or no more than before and (2) those who felt either somewhat or significantly more stressed or anxious than before. As in other studies, women and younger age groups were more likely to feel more stressed or anxious in all survey waves (Figure 1.2.3). Nearly half of the respondents reported experiencing increased stress or anxiety during the surveys conducted in both the spring of 2020 and the spring of 2021. These coincided with the time that the first and second waves of the pandemic reached their crest in Estonia, with infection rates peaking and the most severe restrictions put in place to prevent the spread of the virus. In the summer of 2020, when infection rates were low and there were relatively few restrictions, only one in four respondents reported experiencing greater stress or anxiety than before. However, seasonal effects cannot be ruled out here: in addition to the temporary easing of the pandemic, the holiday period and nice weather might have also had a role in reducing stress levels during summer. Unfortunately, there is no data to verify this.

A third perspective on the level of stress caused by the coronavirus pandemic is provided by the Estonian Na-

**Figure 1.2.3.** Share of respondents who experienced more stress than before, with 95% confidence intervals, by gender and age group




**SOURCE:** figure by the authors, based on weighted data from the COVID-19 rapid survey (number of respondents in the spring of 2020: N = 4,606, the summer of 2020: N = 3,464 and the spring of 2021: N = 3,604)

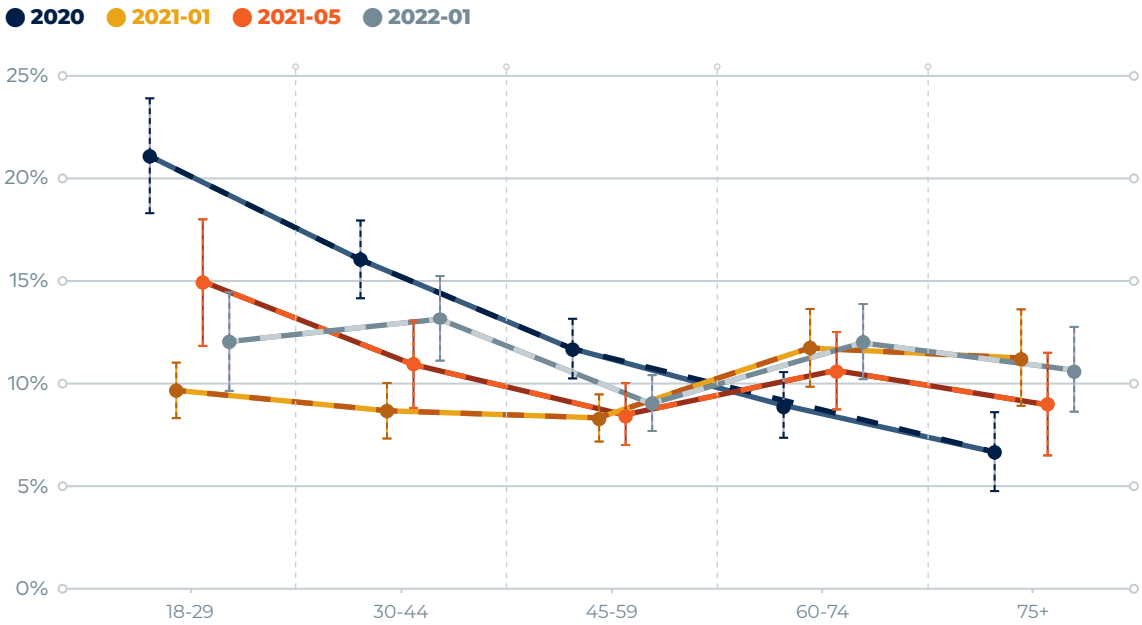
tional Mental Health Study data, which was collected over three waves: in January–February 2021, May–June 2021 and January–February 2022. The first survey wave in 2021 asked respondents to retrospectively rate the stress caused by the state of emergency in the spring of 2020, and also to rate the COVID-related stress they were experiencing at the time of taking the survey. The second and third waves only studied the respondents' self-reported COVID-related stress levels at the time of the survey.

From the results presented in Figure 1.2.4, we can see that the state of emergency in the spring of 2020 caused more stress in younger age groups and the least stress in the age group of 75 and over. It should be noted that retrospective evaluations may be affected by recall bias. In older age groups, people's accumulated life experience and their individual interpretations of events may have somewhat mitigated the perception of past stress. This is indicated by the fact that current stress levels are significantly more uniform across age groups than the retrospective experience of stress.

Young people's higher stress levels were also reflected by the results of the second survey wave, which took place in the spring of 2021, around the time that COVID restrictions were lifted. During the first wave of the Estonian National Mental Health Study, strict restrictions had not yet been re-imposed, despite the high infection rate. Figure 1.2.4 shows that during this period, COVID-related

**The COVID-19 pandemic was an important source of stress that heightened the stress level of Estonians. The stress caused by the pandemic was perceived more acutely by women and younger age groups.**

**Figure 1.2.4.** Level of stress related to the COVID-19 pandemic (share of respondents who experienced high and very high levels of stress with 95% confidence intervals) by age group, between 2020 and 2022




**SOURCE:** figure by the authors, based on data from three survey waves of the Estonian National Mental Health Study (number of respondents in January–February 2021: N = 5,636, May–June 2021: N = 3,751, January–February 2022: N = 4,702)

**NOTE:** Reports on the stress experienced during the state of emergency in the spring of 2020 were given retrospectively in January and February 2021.

stress levels were relatively similar across age groups. A striking trend, however, was the accumulation of stress in the younger age groups: their stress level was higher in the third wave than it had been in the first.

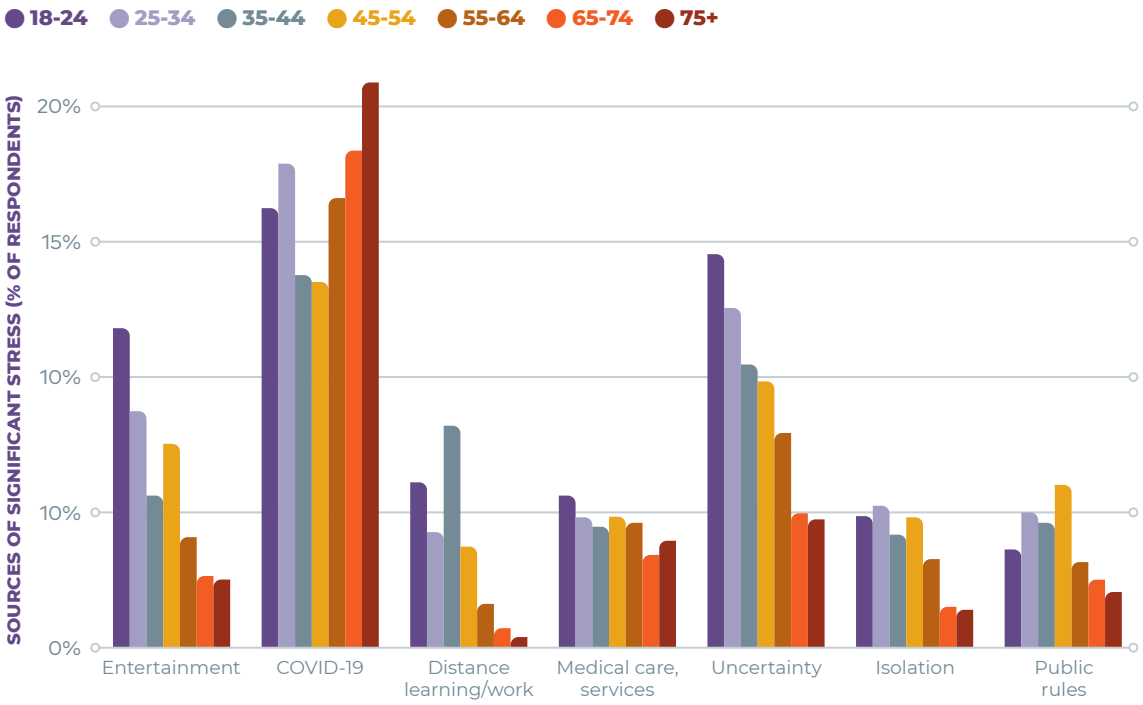
Even though there were differences between the three reviewed studies in terms of the questions used to assess stress and the epidemiological situation at the time of data collection, there were similarities in the results that allow us to conclude the following: (1) the COVID-19 pandemic was a significant source of stress that heightened Estonians' stress levels; (2) the stress caused by the pandemic was perceived more acutely by women and younger age groups; (3) the dynamics of the stress level followed the epidemiological situation and the strictness of the restrictions in force.

## Which aspects of the COVID-19 pandemic caused the most stress for Estonians?

We saw that the coronavirus pandemic caused stress for many people in Estonia. However, in order to find out exactly which aspects of the crisis were the main sources of stress, we need more detailed data. In what follows, we will look at which factors best predicted COVID-related stress with the help of data from the second wave

**The strongest stressor in all age groups was the risk of contracting COVID-19 and its potential consequences.**

**Figure 1.2.5.** How stressed were different age groups about COVID-19 containment measures and related factors? (Share of respondents who rated them as sources of significant stress)




**SOURCE:** figure by the authors, based on data from the second wave of the Estonian National Mental Health Study conducted in May–June 2021

of the Estonian National Mental Health Study (May–June 2021). In the study, people were asked to rate the extent to which various coronavirus-prevention measures and related factors caused them stress. There were a total of 27 factors, which, for the sake of clarity, have been grouped into the following sources of stress: entertainment and communication restrictions, the risk of contracting COVID-19 and its consequences, distance learning and work, restricted access to services (including medical care) and restrictions on visits, uncertainty and the ambiguity of restrictions and instructions, the requirement to self-isolate, and public rules for restricting behaviour (mask obligation, etc.).

Figure 1.2.5 shows the share of respondents who rated the corresponding source as a cause of significant stress. Somewhat surprisingly, the strongest stressor in all age groups was the risk of contracting COVID-19 and its potential consequences. For the younger age group, restrictions on entertainment and communication and uncertainty related to the pandemic were other sources of significant stress. Distance learning and work caused the most stress for people aged 35–44, who most frequently include parents of school-aged children. Public rules for restricting behaviour caused the most stress for respondents aged 45–64. In older age groups (65 and older), no sources of stress other than the risk of contracting the virus played a notable role.

## How well did Estonians cope with COVID stress?

Stress is not an inevitability that one simply has to live with. There are a number of behaviours that people use to cope with stress. James Gross has described these behaviours in his model of emotion regulation (Gross et al. 2019). This model distinguishes between

**The vicious circle of stress can be broken by either changing the situation, shifting one's attention, changing one's appraisal or altering one's response.**

various ways of coping with stress based on the stress modification mechanisms that are activated.

The model views stress and other emotional states as a cyclical process that involves:

(1) situation;
(2) attentional deployment;
(3) appraisal of the situation;
(4) physical or emotional response.

For example, stress can be caused by a difficult task at work (situation), which troubles the person even outside of work (attentional deployment) and seems hopeless (appraisal). The combination of this situation, attention deployment and appraisal causes a physical stress response to occur, which is partly reflected in an unpleasant sense of tension or anxiety. These four stages can act as a cycle of stress amplification. For example, the person experiencing unpleasant physical tension may think that they are even less likely to cope with the task in the state they are in. An appraisal of hopelessness aggravated in this way can further amplify the stress response.

The vicious circle of stress can be broken in any of the four stages: by changing the situation, shifting one's attention, changing one's appraisal or altering one's response. These four strategies are the stress modification mechanisms that people use, individually or combined, in order to cope with stress. For example, people suffering from work stress can change their situation, by seeking help, asking for an extension on their deadline, or solving the problem causing them stress in some other way. When opportunities to change the situation are scarce, people can often still shift their attention, change their appraisal or alter their response.

To shift their attention, for example, people can seek entertainment that will take their mind off the source of stress. While shifting attention often provides quick relief from stress, the effect usually ends as soon as the activity selected as entertainment is concluded. Changing the appraisal of the situation can have longer stress-relieving effects. Often, there are many ways to appraise a situation. An aspect of appraisal that is particularly important in the context of stress is the perceived manageability of impending threats. The work task may be difficult, but if the person feels that they have the necessary resources, they are likely to consider the task a surmountable challenge. The ability to change one's appraisals is often related to the ability to recover from stressful situations (resilience) (Kalisch et al. 2015). The last mechanism for coping with stress is to alter the physical or emotional response to a stressful situation. This includes, for example, going for a run in the forest or doing breathing exercises, as well as suppressing one's emotions or airing them out in the gym or on the dance floor.

**Emotion regulation techniques are helpful in both alleviating stress and limiting the unhealthy effects of long-term stress.**

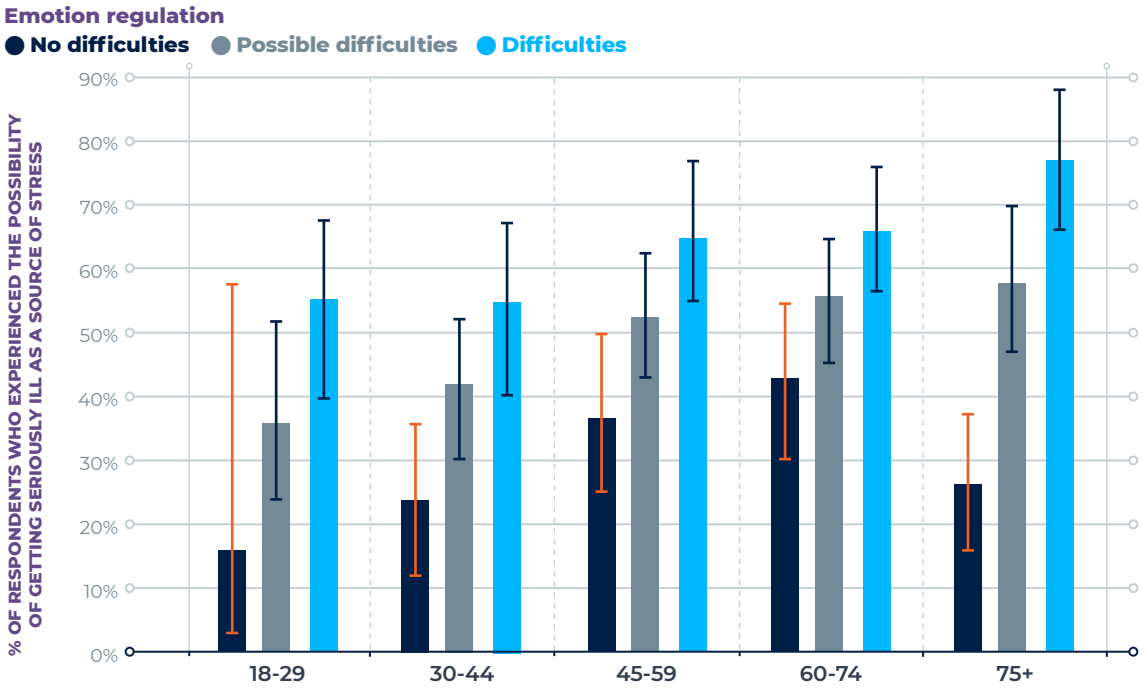
Data from the Estonian National Mental Health Study clearly show that such emotion regulation techniques are helpful in both alleviating stress and limiting the unhealthy effects of long-term stress. More specifically, the study included three statements from the Difficulties in Emotion Regulation Scale (DERS) (Gratz and Roemer 2004, in Estonian Vachtel 2011), which assessed

how frequently people find it difficult to control their behaviour when feeling upset, how often they can focus on things other than their mood in moments of distress and how much power they believe they have to improve their situation when experiencing negative emotions. Based on their answers, respondents were placed into three groups: (1) those who tend to have difficulties with emotion regulation (their answers to all three questions were 'sometimes' or more often); (2) those who tend not to have difficulties with emotion regulation (their answers to all three questions were 'almost never') and (3) those who fall in between the two groups.

Now we can ask whether people's association with one of these three groups enables us to predict how much stress the COVID-19 pandemic caused in each person. To find the answer, we looked at the strongest source of COVID stress in the summer of 2021, i.e. the risk of contracting COVID-19 and its consequences. The results provided in Figure 1.2.6 show that the level of stress caused by the possibility of contracting the virus correlated with difficulties in emotion regulation, especially among middle-aged and older people. The more a person belonging to these age groups reported difficulties with emotion regulation, the more stressed they were about the risk of contracting COVID. The association between emotion regulation and stress was weaker in younger people. This pattern may be explained by life experience: emotion regulation has a stronger effect in older people thanks to skills acquired in the course of life.

In addition to reducing the intensity of stress, emotion regulation can mitigate the negative effects of long-term stress on mental health. To illustrate this pattern, we examined whether the use of emotion regulation weakened the association between the experience of stress and the occurrence of symptoms indicating depression using data from the first wave of the Estonian National Mental Health Study (January–February

**Figure 1.2.6.** Share of people experiencing stress caused by the risk of contracting COVID-19 and facing the consequences, with 95% confidence intervals, depending on emotion regulation skills, by age group

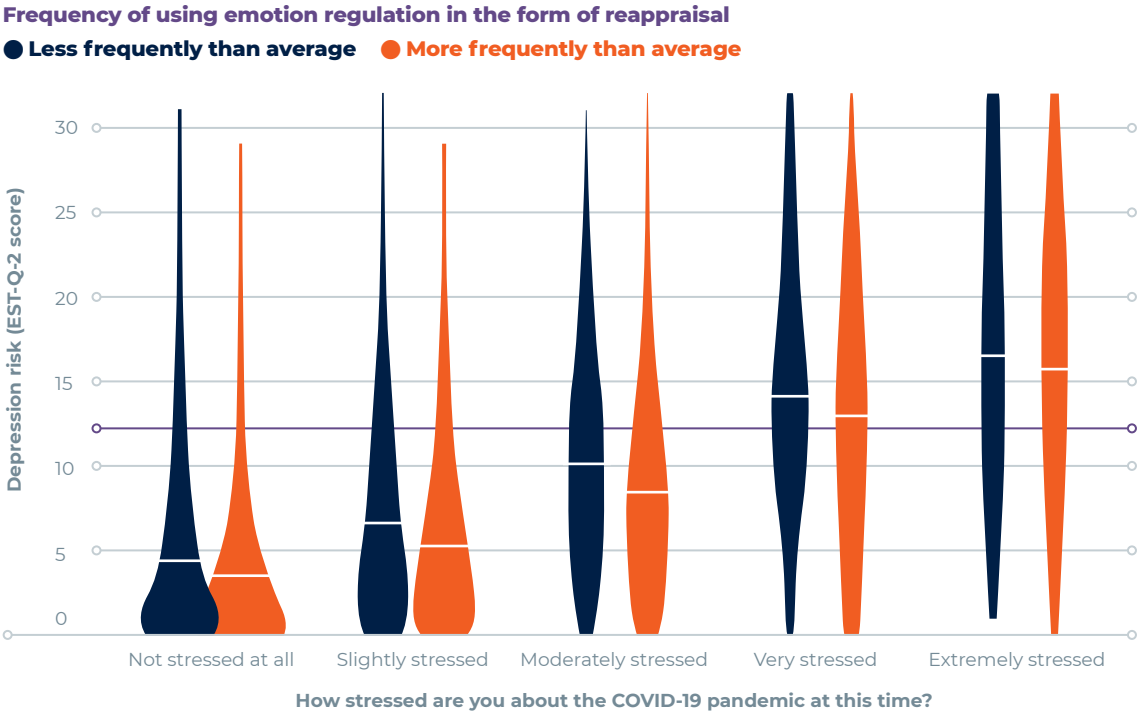



**SOURCE:** figure by the authors, based on data from the second wave of the Estonian National Mental Health Study conducted in May–June 2021

2021). To measure emotion regulation, we assessed the respondents' disposition to change their appraisal in an emotional situation, which is considered one of the most effective coping strategies. Respondents were asked to rate how often, in situations that cause negative emotions, they (a) think about what they could learn from the situation; (b) remind themselves that they are able to cope with most unpleasant situations; (c) ask themselves if the situation really means that much to them; and d) accept that unpleasant situations are an inevitable part of life. Based on the median of the average answer given to these questions, we split the respondents into two groups: those who use reappraisal strategies more than average (red shapes in Figure 1.2.7) and those who use them less than average (blue shapes). To measure stress, we used the question 'How stressed are you about the COVID-19 pandemic at this time?' To measure the symptoms of depression, we used the depression subscale of the Emotional State Questionnaire (EST-Q-2), where a score of 12 or higher is associated with a high risk of depression (Aluoja et al. 1999).

Firstly, Figure 1.2.7 shows that experiencing stress was strongly associated with depression. The higher the stress level, the higher the share of respondents above the depression risk threshold expressed in the figure. The share of respondents who exceeded the depression risk score was 68% of those feeling 'extremely stressed' about the pandemic, 36% of those feeling 'moderately stressed', and only 14% of those feeling 'not stressed at all'. Based on previous studies, there is reason to believe that the relationship between depression and stress is mutual: stress affects depression, but depression also has a moderate effect on stress.

**Figure 1.2.7.** Emotion regulation difficulties are associated with a stronger association between stress and depression risk




**SOURCE:** figure by the authors, based on data from the first wave of the Estonian National Mental Health Study (Jan–Feb 2021)

**NOTE:** The horizontal line depicted in each figure represents the median depression risk scores of each group. The solid horizontal line represents the cutoff for depression risk.

Secondly, Figure 1.2.7 shows how the use of emotion regulation moderates the effect of stress on the risk of depression: the respondents marked in red are located slightly lower in the figure than the ones marked in blue. On average, among the respondents who changed their appraisals frequently (marked in red), 4–11% less of the respondents exceeded the depression risk score than those who changed their appraisals less often (marked in blue). This pattern is consistent with the idea that changing our appraisals shields us from the negative effects of stress. The reappraisal strategy had the most impact on people who experienced moderate to high levels of stress. However, the inhibiting effect of reappraisal against depression was smaller at the margins – that is, among respondents who felt no stress or only slight stress and those who felt extreme stress. This result was expected. If there are no strong emotions, there is no significant help in regulating them. On the other hand, very strong stress is probably caused by stressors that are adequately appraised as dangerous. In these cases, reappraising the situation is not possible or advisable. Combined, these results illustrate the role of emotion regulation as a possible shielding factor in the interplay between stress and mental health.

## SUMMARY

The average stress levels of Estonians have gone through several ups and downs over the past 30 years, resting on the personal life experiences of each individual, while also reflecting broader social trends and crises. While the stress levels of women were significantly higher than those of men in the early 1990s, gender differences between stress levels became much more uniform in the following years, until the COVID-19 pandemic that reached Estonia in the spring of 2020 raised women's stress levels again.

While the pandemic caused increased stress for everyone, it had a greater impact on women's self-reported stress levels. This may be due to the increased domestic burden that resulted from the lockdown and fell mainly on women, or due to women's higher susceptibility to stress.

The prevalence of stress in younger age groups rose sharply even a few years before the COVID-19 pandemic, and young people were also under the most stress during the crisis. More than older age groups, young people suffered from the imposed restrictions, especially the decrease in entertainment and communication opportunities, as well as the uncertainty and ambiguity surrounding the crisis.

Given that the coronavirus is generally more dangerous for older people than for younger ones, it is somewhat surprising that older groups felt the least stressed during the pandemic. For them, the only significant stressor related to the crisis was the risk of contracting COVID and its consequences. The risk of contracting the virus caused less stress for those who were better at regulating their emotions.

The example of COVID-related stress demonstrates that the ability to regulate emotions and reappraise the situation can improve the ability to cope with stress and reduce the negative impact of stress on mental health and well-being.

**The average stress levels of Estonians have gone through several ups and downs over the past 30 years, reflecting broader social trends and crises.**

## WHAT MATTERS IN TIMES OF STRESS?

The World Health Organization (WHO) has put together a toolbox of simple but effective suggestions for improving well-being during times of stress. While these techniques are unlikely to completely eliminate stress, increasing your awareness can help significantly reduce your stress level and improve your focus.

1. **Grounding**. First, notice how you are feeling. Shift your awareness to what is happening in your body, slow down your breathing, and when you sit, press your feet firmly into the floor. Now refocus on the world around you: pay attention to sounds, smells and colours.

2. **Unhooking.** Negative feelings and thoughts can keep you on the hook, moving you away from the activity at hand and your values. To unhook from these feelings and thoughts, notice and name them, using labels such as 'anger' or 'unpleasant memory'. (Adding the phrase 'I notice' to the label can help you distance yourself from the negative feeling or thought.) Now return your full attention to the activity at hand or your surroundings.

3. **Acting on your values.** Your values describe what kind of person you want to be: how you want to treat yourself, others and the world around you. If you want to be attentive, caring, helpful and courageous, then follow these values even in difficult situations. Change the things you can change and accept the things you can't.

4. **Being kind to yourself and others.** Based on the values that are important to you, be friendly and gentle towards yourself and others; do not be too harsh or demanding in difficult situations. Show empathy for others and compassion for yourself.

5. **Making room for all thoughts and feelings.** Feelings and thoughts can be very different. Accept both the good and the bad, for rejecting and denying them will not make the situation any better. Assume the position of an observer, and think of feelings and thoughts like the weather: clouds may come and go, but behind them, the sun always shines.

**SOURCE:** WHO 2020

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# 1.3
# Success: Self-realisation as part of mental well-being

KARIN TÄHT, ANDU RÄMMER, INDREK SEPPO, LAURA KIVI AND KENN KONSTABEL

## KEY MESSAGE

**Success, or realising one's abilities, is an important component of mental health and well-being. Success in school and later in professional life largely depends on the individual's home background. Success in school depends more on the educational resources accessed and attitudes encountered at home and less on the socioeconomic status of the family. In Estonia, children's subsequent success in the labour market is not strongly limited by the opportunities that their parents can offer them.**

## INTRODUCTION

As the World Health Organization (WHO) defines it, mental health is a state of well-being in which the individual realises their own abilities, can cope with the normal stresses of life and can work productively. This article focuses on the topic of self-realisation, or success, in school and work life, as well as on the values associated with work and success.

Self-determination theory (Ryan 2009) is a theoretical model that describes people's psychological needs, such as the need for success through self-realisation, and the motivation related to this need. According to this theory, maintaining mental health and well-being requires satisfying three universal needs: the need for autonomy, competence and relatedness. These needs are inextricably linked to success in both school and work life. Independent achievement in any field is based on competence and supports a sense of autonomy while being connected to the psychosocial environment that one is part of and participates in on a daily basis. Self-realisation, or setting and achieving autonomous goals, encourages the development of coping mechanisms and thereby reduces stress, contributing to the maintenance and improvement of both physical and mental health and well-being (Miquelon and Vallerand 2008). It is also important to address achievement-related values. According to self-determination theory, it is values related to self-realisation that mostly contribute to well-being. Excessive emphasis on external success criteria (e.g. salary or grades) can, by contrast,

**Self-realisation encourages the development of coping mechanisms and reduces stress, helping maintain and improve both physical and mental health and well-being.**

increase stress and thereby pose a risk to mental health.

Since it is nearly impossible to measure success in its entirety, this article will focus on success in two areas where it can be measured relatively well: in school and in work life. As a third topic, we will consider work-related values that form the social background of the pursuit of success. We will look at socioeconomic factors that influence success (e.g. parents' education and income, the socioeconomic background of schools), educational resources and attitudes at home, and work values.

## Success in school

Success in education opens more avenues for self-realisation in the professional world. However, it is important to view students' success and self-realisation from a broader perspective, one that includes mental well-being. Therefore, success in school is measured not only in academic achievements but also by considering students' attitudes towards learning, the inner satisfaction they get from being in school and studying, and their learning motivation. This article focuses on academic achievements; the school environment and well-being of students at school are discussed in the article by Valk et al. in Chapter 3 of this report. The positive correlation between learning motivation and student self-efficacy with academic achievements is widely acknowledged in educational sciences. The association of academic results with students' epistemic beliefs[1] is similarly notable. More specifically, many studies have shown that more educated beliefs about the nature of knowledge (in favour of the scientific method) are associated with better academic results in mathematics and other STEM[2] subjects (Mason et al.2013; Rozgonjuk et al. 2022).

Since 2006, Estonian students have participated in the worldwide educational study Programme for International Student Assessment (PISA). The data of this study are a valuable source of information if, in addition to the students' academic results in achievement tests, we are interested in the students' attitudes towards learning, or in knowing how our students are doing in school in the broader sense.

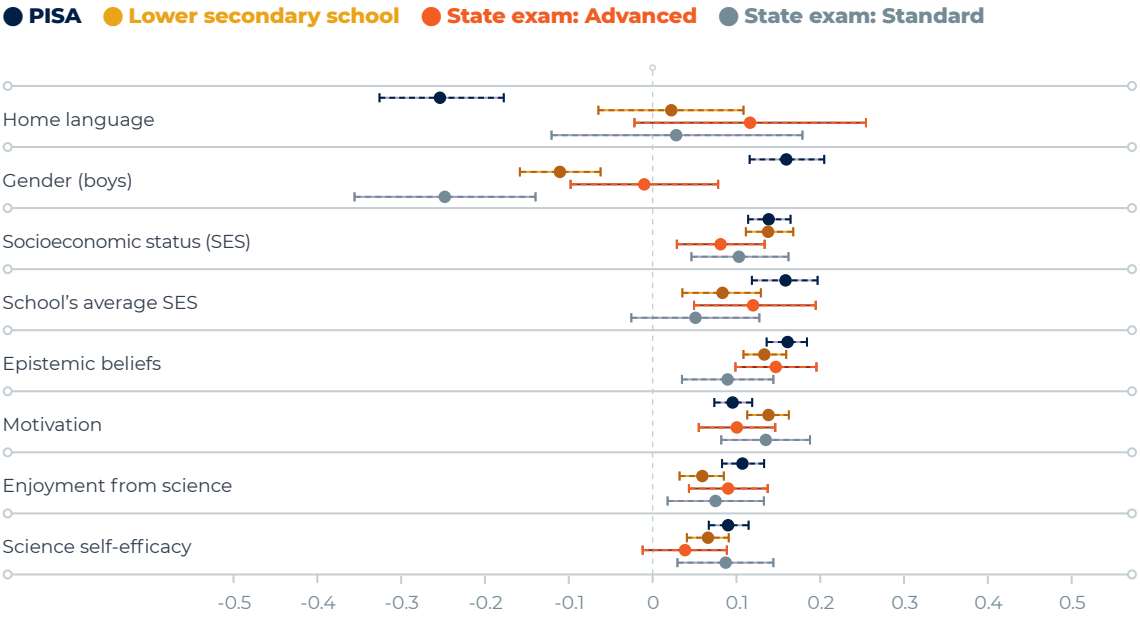
Estonian students have scored relatively high by international comparison on the most recent PISA achievement tests (OECD 2016; OECD 2019). The sample of the PISA study includes students aged around 15 years, who are typically studying in the last grades of lower secondary school. That means that they will soon be moving on to the next educational stage: upper secondary school. Which indicators characterise these students, who will soon have to choose where they want to continue their studies? And following their educational path even further: which indicators predict their success at the end of upper secondary school and thereby provide them with greater options when heading on to the next educational stage?

To answer these questions, we took a closer look at the PISA 2015 data. That year, 5,587 students from all across Estonia, or about half of all the 15-year-old students in Estonia, participated in the study (INNOVE 2016). To the PISA study data, we added the results of the students' mathematics finals taken in the last year of lower secondary school and the results of the state examination in standard or advanced mathematics taken at the end of higher secondary school three years later. In other words, we monitored the further educational path of the students who participated in the PISA 2015 study and tried to understand which attitudinal or demographic indicators measured in the PISA study predicted the students' later educational path.

1 Epistemic beliefs are individual beliefs about the nature and acquisition of knowledge.

2 STEM – science, technology, engineering and mathematics.

**Figure 1.3.1.** Mathematics results (standardised means with 95% confidence intervals) and relationship with PISA test background factors




**SOURCE:** figure by the authors, based on the results of the PISA 2015 test, the lower secondary school mathematics finals of 2015 and the mathematics state examination of 2018

**NOTE:** The points marked in different shapes show the relative influence of background factors in predicting the results of the PISA 2015 test (mathematics, science and reading test mean), the mathematics finals in the last year of lower secondary school, and the standard or advanced mathematics state examination in the last year of higher secondary school.

Firstly, Figure 1.3.1 shows us that the academic performance of 15-year-old students was related to various attitudes that the PISA background questionnaire asked them about. There were several questions about each attitude. We have extracted the underlying themes in these questions and present them in the following points.

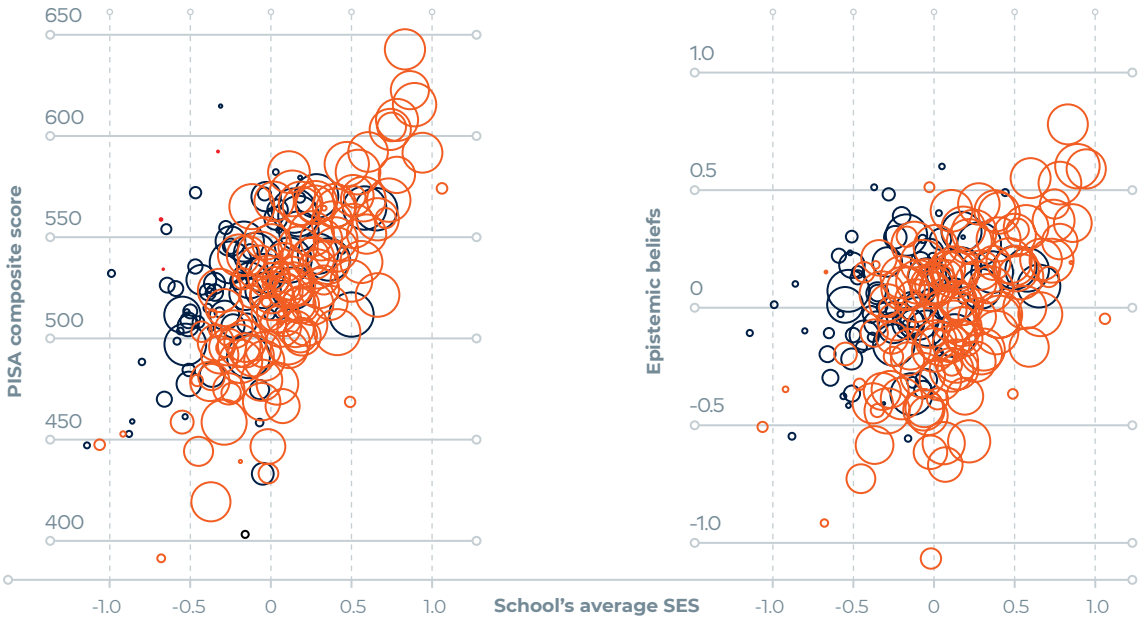
- Epistemic beliefs: the belief that scientific methods are the source of knowledge (e.g. that knowledge can change depending on the results of an experiment).
- Achievement motivation: wanting to study well and be among the best.
- Enjoyment from science: interest and positive attitude towards natural sciences.
- Self-efficacy in science: the student's belief that they can handle various science-related tasks (e.g. explain the causes of earthquakes).

All four of these attitudes had a positive correlation with both PISA performance and the results of final exams, including state exams taken three years later. Although these correlations were slight or moderate, they were almost always statistically significant. It is worth noting that these associations cannot be attributed to the students' socioeconomic background, gender or home language, which were all included in the model concurrently.

Secondly, Figure 1.3.1 demonstrates that boys performed better on the PISA test, while girls had the upper hand in the finals. An exception is the state exam in advanced mathematics, where boys and girls performed on an equal level.

Thirdly, we can see from the figure that higher socioeconomic status also predicts better performance. The socioeconomic status index of the PISA background questionnaire reflects the educational level of the student's parents, the number of books at home, the

**Figure 1.3.2.** The relationship between the average socioeconomic status (SES) indicators of Estonian schools and the average PISA composite results (left panel) and the relationship between epistemic beliefs and the school's average standardised score (right panel)




**SOURCE:** figure by the authors, based on PISA 2015 results

**NOTE:** Urban schools are shown in red and rural schools in black. A large circle indicates a school where a relatively large number of students participated in the study.

availability of digital tools, and the number of rooms and cars at home. This index is therefore less of an indicator of wealth and more of an indicator of parents' education and the educational resources available at home (dictionaries, digital tools). It is worth noting that the average socioeconomic status index of the school has just as much impact as the socioeconomic status indicator of the student's home environment.

We described the associations of success in school based on mathematics results, because mathematics shows the clearest connection between the subject studied at school and the PISA subtest. However, we found a similar association pattern with background factors (including socioeconomic status and attitudes) in the PISA reading test and science test (the latter includes questions from the physics, chemistry and biology curriculum).

Figure 1.3.2 illustrates the differences between schools. The better the average socioeconomic status index of the school, the better the average PISA score and the higher the epistemic beliefs score. Other attitudes (including in self-efficacy in the field of study and achievement motivation) were also associated with socioeconomic background, but these relationships were not as strong. In addition, the same figure highlights the differences between rural and urban schools. Only urban schools with high socioeconomic status achieve very high average PISA performance scores.

**Socioeconomic background affects students' success in school not directly but through the family's educational resources and attitudes that encourage the education process.**

### What can we conclude from these results?

- There are significant differences in academic performance between schools. Some of these differences can be attributed to differences in socioeconomic background.
- Socioeconomic background affects academic performance not directly but through mediating variables. Examples of such mediating variables are educational resources and attitudes that encourage the education process. Educational resources include financial opportunities, books and digital tools available at home, and the parents themselves. Better-educated parents are better prepared to help their children with schoolwork, as well as simply to have educational conversations.
- Socioeconomic differences between schools are significant and result from both regional differences and the concentration of students with similar backgrounds in the same schools. Socioeconomic differences are related to differences in attitudes that encourage success in school.
- Attitudes that encourage success in school affect students' success in school regardless of their gender or socioeconomic background. This effect is long-term (lasting at least from the end of lower secondary school to the end of higher secondary school) and is reflected in the results of both the PISA test and the final exams.
- Thus, in efforts to reduce inequalities between schools, it is not enough to rely only or mainly on the quality of teaching and good learning methods. It should be recognised that some of the differences stem from students' home background, including their socioeconomic background and the attitudes that encourage success in school.

**Compared to other OECD countries, Estonian students' life satisfaction was slightly above average.**

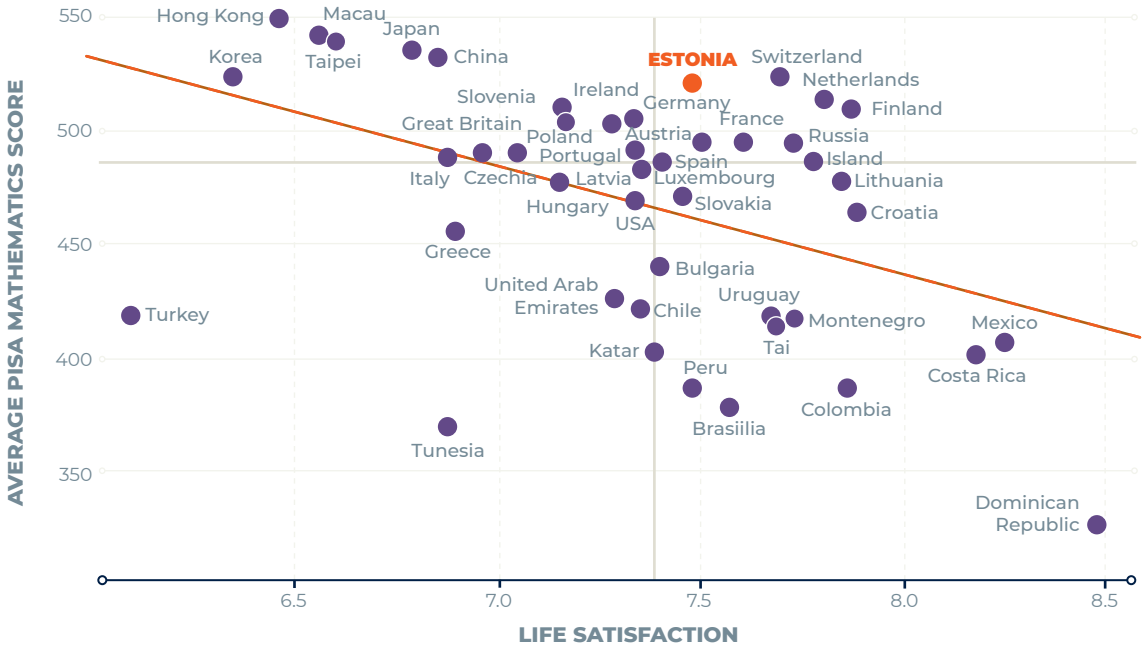
In the PISA 2015 study, students were asked a single additional question: 'How satisfied do you feel about your life?' According to the summary figure based on the PISA 2015 country data (Figure 1.3.3), Estonian students were quite satisfied with their lives: Estonian students scored an average of 7.5 out of 10. Compared to other OECD countries, Estonian students' life satisfaction was slightly above average. Figure 1.3.3 shows a moderately strong negative correlation between life satisfaction and mathematics results: in countries with the best mathematics results, life satisfaction is usually lower on average, and vice versa. There are a few exceptions to this pattern: Estonia, along with Finland, Switzerland, the Netherlands and others, has higher-than-average life satisfaction and PISA mathematics scores.

## Success in work

Income is far from being the only criterion of professional success, but compared to the alternatives (e.g. the meaningfulness of work, a sense of competence, or feedback from superiors or clients), it is both easily and accurately measurable (if we limit ourselves to legal incomes) and universal (higher income is preferable to lower income in any given occupation). That is why we consider income as the measure of success at work in this article.

Much like success in school, success in work is largely dependent on home background. Constituting this background are investments that are both direct (economic) and indirect (e.g. so-

**Figure 1.3.3.** Average mathematics scores and average life satisfaction of students in countries participating in the PISA study (a linear trendline is shown in red)




**SOURCE:** figure by the authors, based on PISA 2015 results

cial capital), coupled with genetic and social heritage (e.g. family reputation, transmission of skills and knowledge). Among other things, the effect of home background can be observed in the correlation between children's and parents' incomes. This association is reflected in the registry data of the Estonian Tax and Customs Board[3] shown in Figure 1.3.4.

Figure 1.3.4 presents Estonian residents who were 34–36 years old in 2017 as 'children'. The horizontal axis shows the employment income of the parents of these children in 2007 (the time when most of the children had entered or were entering the labour market). Families have been split into percentiles based on the sum total of both parents' income, resulting in a categorisation of 100 equal-sized groups ranked by income. The 9% of families who had no income at the time are depicted as the point farthest left. The vertical axis shows the average income of the descendants (children) of parents belonging to each percentile group in 2017, also on the percentile scale. Families where both parents were born in Estonia and families where both parents were born outside of Estonia are presented as separate groups (for clarity, 'mixed' families were not included in the figure).

**Much like success in school, success in work is largely dependent on home background.**

Figure 1.3.4 shows that for both groups, the relationship between children's and parents' incomes is approximately linear. The higher the parents are positioned in the income hierarchy, the higher on average the children land in the income distribution. Although the correlation is significant, it is not as strong as in some other countries: Estonia falls roughly in line with the Nordics and lower than Germany or Great Britain.

3 The Tax and Customs Board registry data reflects the average income subject to social security tax of anyone with an income.

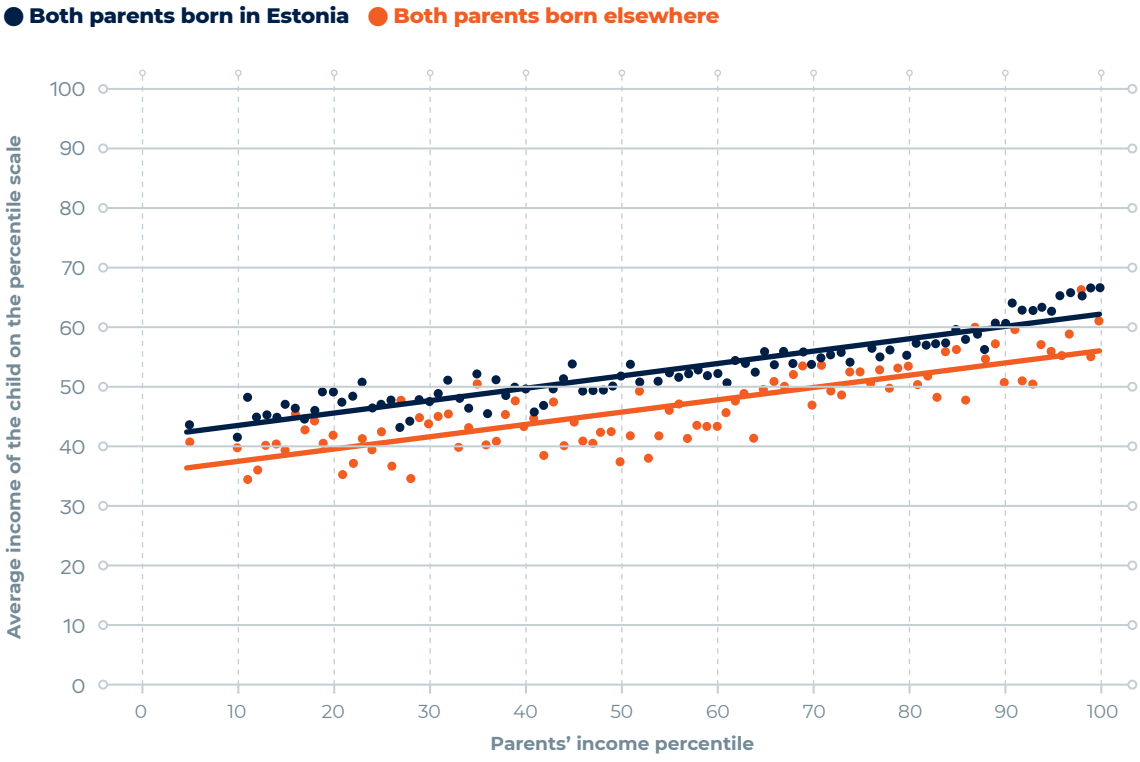
**Parents' income is not as strong a determinant of the child's future as in some other countries. Intergenerational income mobility is relatively high in Estonia.**

Parents' position in income distribution is therefore not as strong a determinant of the child's future as in some other countries. In other words, intergenerational income mobility is relatively high in Estonia.

The relationship between children's and parents' income is approximately the same in families with an Estonian or local background and in families with a foreign background (both regression lines have the same slope; see Figure 1.3.4). That means that children from families with a foreign background are not more limited by their parents' income position than local children. On the other hand, other factors (e.g. poor knowledge of Estonian, limited social network) prevent children with a foreign background, most of whom are Russian-speaking, from gaining success in the labour market. Thus the income of children from families with a foreign background is lower on average than that of children from families with a local background.

Parents in families with a foreign background have, on average, a smaller income than those from families with a local background (see Kivi et al. 2021; Figure 1.3.4). The same applies for children from families with a foreign background compared to those with a local background. In both generations, the income gap is approximately the same. Therefore, even though the relationship between parents' and children's incomes is not very strong in Estonia, there is still a national-background-based difference in average incomes among both first- and second-generation immigrants.

**Figure 1.3.4.** The relationship between children's income and parents' income by family type (families with an Estonian or local background, and families with a foreign background)




**SOURCE:** figure by the authors, based on the Estonian Tax and Customs Board registry data from 2007 and 2017

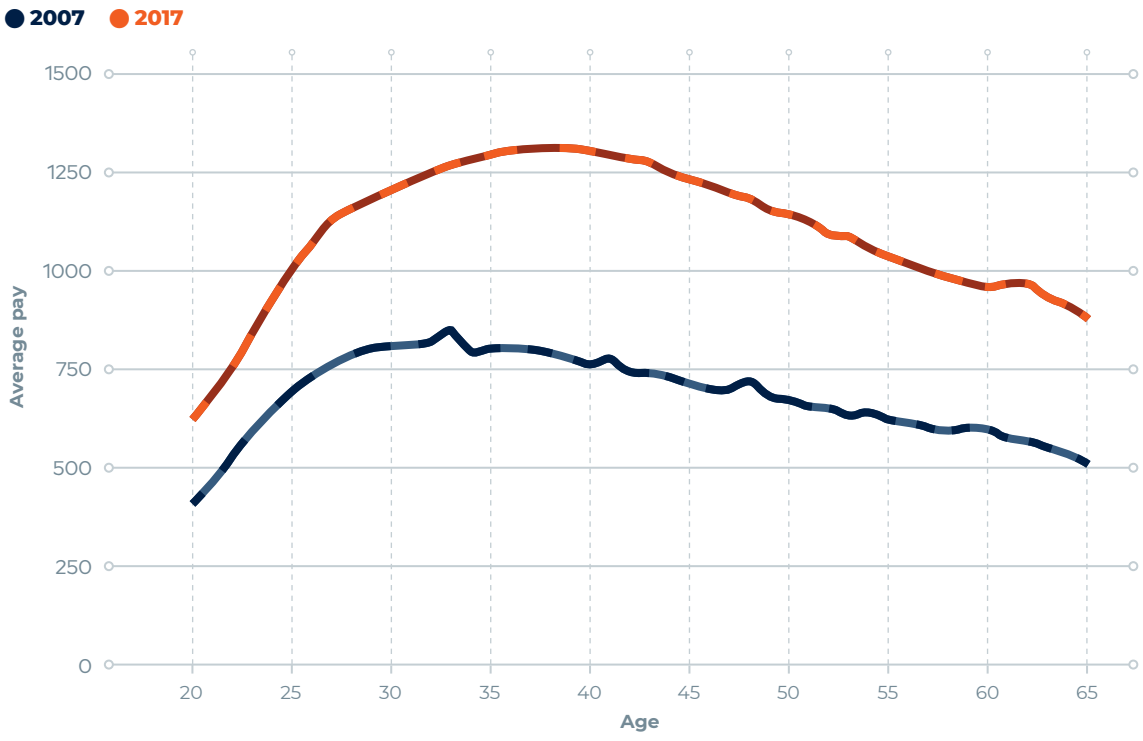
Figure 1.3.5 shows the relationship between age and pay in Estonia for the years 2007 and 2017. In the case of individual age-pay profiles, pay typically increases rapidly for the first 10–15 years after entrance into the labour market, then stabilises and then falls slightly just before retirement age (e.g. due to deteriorating health). Instead of individual data, the profiles here are based on cross-sectional data. Thus, a decrease in pay is likely to indicate generational differences – it is not that people in their 40s start earning less but that younger generations earn more than them on average.

There are two striking differences in the cross-sectional age-pay profile of Estonian residents that set the country apart from those where development has followed a more stable course (e.g. Finland). First, the pay increase in the first decades after entrance into the labour market is steeper in Estonia. Second, the age-pay curve in Estonia peaks in people's 30s and 40s and starts falling after that. In Finnish data, a certain decrease is detected only among those with the least education, while in all other strata of the population, pay increases throughout the working years. Figure 1.3.5 also shows that during the last decade, the peak of the income curve has shifted to the right, moving from the late 20s to the late 30s. We can expect this process to continue for a quarter-century, until our age-pay profile resembles that of countries with a stable development arc.

**It is typical in Estonia for pay to increase rapidly for the first 10–15 years after a person enters the labour market, then stabilise and then fall slightly just before they reach retirement age.**

Figure 1.3.5 illustrates the dynamics of the Estonian labour market: the newer generations have been more successful

**Figure 1.3.5.** Profiles reflecting the age-pay relationship, 2007 and 2017




**SOURCE:** figure by the authors, based on the Estonian Tax and Customs Board registry data from 2007 and 2017

**In the Estonian labour market, each new generation seems to be more successful than the previous one. Contrary to the fears of some in the early 1990s, no distinct 'winners' generation' emerged after independence was restored.**

than the ones that came before them. In the early 1990s, people feared that the restoration of independence would be followed by a 'winners' generation' that would steal opportunities from the generations to come. Instead, each new generation seems to have been more successful in the labour market than the ones before them. On the one hand, this can be considered a success – our education system has adapted to the new circumstances and is increasingly effective in preparing young people. On the other hand, however, the large income gap between generations leads to many problems. Let us look at a few of them.

- Many professions (especially in the public sector) inevitably have a relatively fixed, seniority-based pay policy. This is why, for example, we cannot offer young teachers higher pay than older ones, even though the competition in the labour market requires us to attract more young people to work as teachers. This results in the ageing of the teaching staff and major problems looming in the education system.
- People retiring today have significantly lower incomes than those who will retire in 20 years. This means that in 20 years, the decline in income for people reaching retirement age will be much steeper than it is now, which may become an important factor influencing policy decisions.

A similar dynamic, where the pay level of the generations entering the labour market exceeds that of the ones before them, will likely continue in the coming years. This is because the generation now entering the labour market is smaller than previous generations. This is likely to increase the average pay mainly among young, highly educated people who often enter sectors where there are few or no highly educated people from older generations. The competition for them is growing, and this is reflected in pay figures.

The gender pay gap in Estonia is still the largest in Europe (21.7% in 2019, compared to the European average of 14.1%, according to Eurostat data).[4] While there are many reasons for the pay gap, it ultimately indicates that women have fewer opportunities for self-realisation than men do.

## Work values

Work values refer to the main objectives that are reached through work and the opportunities for self-realisation that work presents. Based on motivational factors, we can broadly differentiate between two types of work values: extrinsic and intrinsic. Extrinsic values (income, career, prestige associated with the profession) refer to tangible rewards or benefits; intrinsic values refer to intangible benefits gained through the nature of the work (creativity, self-development, opportunities for achievement) (Gesthuizen et al. 2019).

Summarising the systematic study of young people's work values that started in Estonia in the 1960s, Saarniit (2000) notes that the structure of previously stable work values changed radically in the 1990s. During the Soviet period, the cultural contribution of one's work was valued the highest, with material goals and especially position-related values rated as less relevant. However, the early 1990s brought systematic changes in the hierarchy of these values: the worsened

4 Most recently, a comprehensive study on this topic was conducted by Tallinn University as part of the REGE project.

economic situation that followed the collapse of the Soviet Union saw a sharp shift in work values. Career opportunities and especially material well-being gained in value, and self-realisation opportunities at work lost the value they once had. The values of the Russian-speaking population were especially quick to take a pragmatic turn, which led to a decrease in the ethnic differences in work values seen in the 1980s.

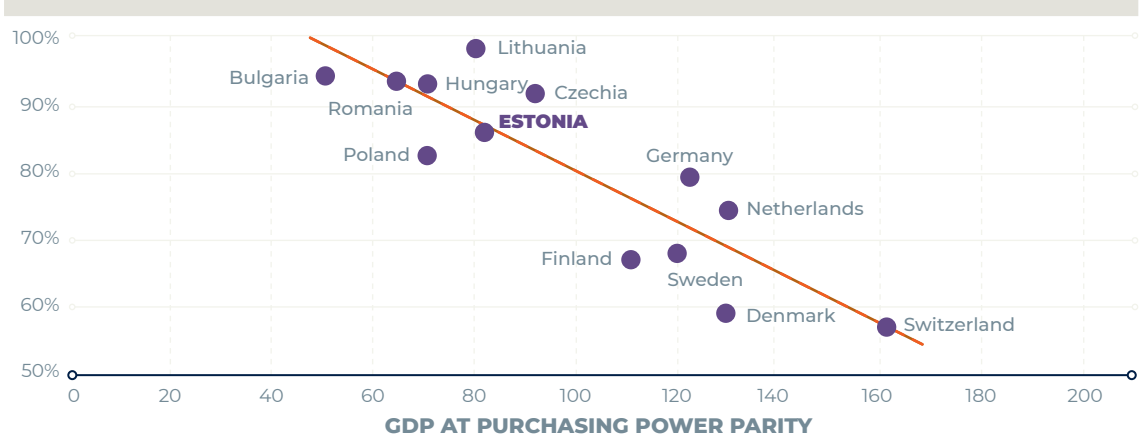
Research conducted in subsequent decades shows the prevalence of material work values in the entire population. According to the international European Values Study (EVS), Estonia is not alone in this: in recent decades, remuneration for work has been the number-one work value in all former socialist countries that have transitioned to a market economy (Figure 1.3.6). Residents of countries with lower purchasing power parity consider income more important when choosing a job than residents of wealthier countries do. In this classification, Estonia is closer to Eastern European countries than to the Nordics.

The emphasis on opportunities for achievement at work has steadily grown in Estonia in recent decades. This trend reflects the increasingly complex demands placed on employees in the rapidly developing labour market. In Estonia, opportunities for achievement are valued less than in Scandinavian countries and more than, for example, in Russia. They are more desired among Estonian-speakers than they are among Russian-speaking respondents. Estonian residents with a higher education value opportunities for achievement more than residents with a lower education do (Figure 1.3.7).

The modernisation of the labour market in this period is also reflected in accelerated individualisation, as is indicated by the consistent increase in the share of Estonians who believe that people should be more responsible for their own livelihoods. There were no gender differences in this opinion, but it was more common among Estonian-speaking respondents than Russian-speaking ones (Figure 1.3.8).

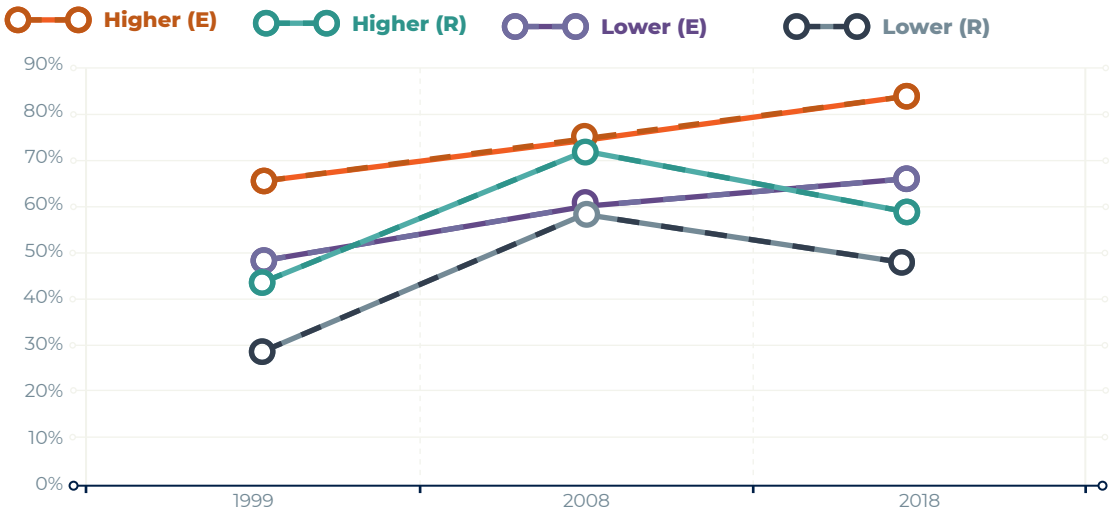
The increasing emphasis on individual competitiveness is another trend that indicates the prevalence of neoliberal thinking. More and more people believe that competition could stimulate people to work harder and employ new ideas. In contrast to the growing emphasis on individual responsibility and competition, there has been increased dissatisfaction with income differences. Since the 1990s, the number of those who believe that higher pay makes people work harder has decreased, and the number of those supporting a more equitable redistribution of income has increased. The number of people upholding 'post-materialist' values has also grown (Realo 2019).

**Figure 1.3.6.** Share of people who consider income an important factor when choosing a job, and GDP purchasing power parity in comparative prices per person (a linear trendline is shown in red)




**SOURCE:** figure by the authors, based on EVS and Eurostat data from 2018

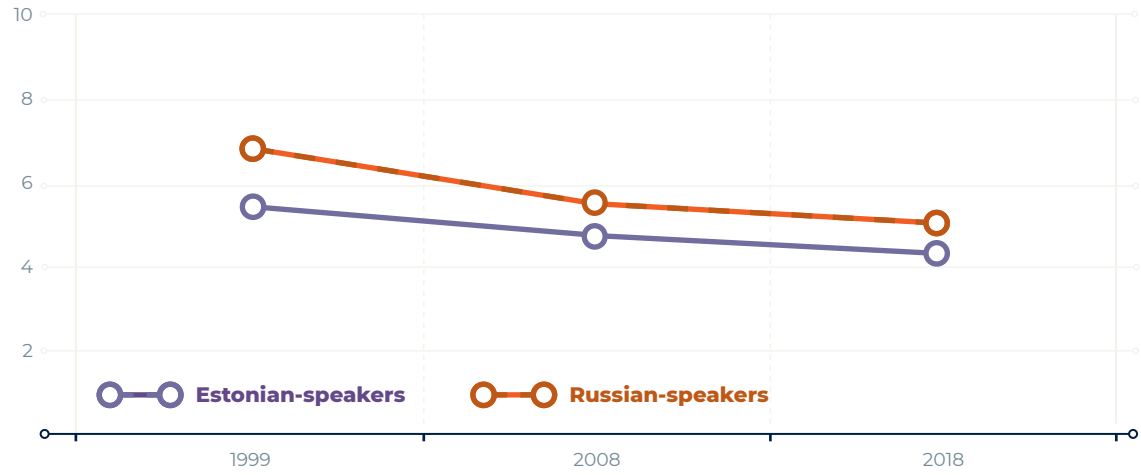
**Figure 1.3.7.** Prioritising opportunities for achievement at work among people with higher and lower education, Estonian- (E) and Russian-speaking (R) respondents




**SOURCE:** figure by the authors, based on EVS data from 1999, 2008 and 2018

The dynamics of work values and individual achievement indicators are a sign of broader developments that have followed the changes in well-being and that describe both the labour market and society at large. In recent decades, the receding of daily subsistence concerns brought on by the increase in general well-being and the ever-increasing need for specialised labour sparked by the deepening division of labour have led to an increased emphasis on intrinsic work values. Although remuneration continues to be an essential motivating factor when choosing a job, more and more consideration is given to the opportunities for achievement that the workplace can offer. Another sign of adaptation to the demands of a market economy society is that instead of relying on state aid, people prefer to rely more and more on themselves. At the same time, the deepening of economic inequality is receiving more criticism. People with higher education and Estonian-speakers are better adapted to the changing circumstances.

**Figure 1.3.8.** Individual achievement (mean ratings on a scale of 1 to 10), Estonian- and Russian-speaking respondents




**SOURCE:** figure by the authors, based on EVS data from 1999, 2008 and 2018

**NOTE:** Scale: 1 – people should be more responsible for providing for themselves … 10 – the state should take more responsibility to ensure that everyone is provided for.

## SUMMARY

Self-realisation, or success, is an important component of mental health and well-being. In the first part of this article, we demonstrated that students' success in school is influenced by their parents' education and the educational resources and attitudes they are exposed to at home. There are significant differences in Estonian schools' average PISA results and the average state examination results. The different socioeconomic backgrounds and attitudes among students offer some explanation for this.

There is a positive correlation between parents' income and the income of their children in adulthood, although it is not as strong as in many other countries. The position of children in later life is therefore not very strongly limited by the opportunities their parents offer them during childhood. The younger generations earn significantly more than the older ones. On the one hand, this signals that our education system has adapted to the changing economy. But on the other hand, it causes problems in the labour market (e.g. because the average pay level of teachers differs between age groups, older people find the average pay of teachers more motivating than younger people do). While Estonians consider income a very important motivator when choosing a job, intrinsic work values (e.g. opportunities for achievement) have become increasingly relevant in recent decades. People believe they need to support themselves without outside assistance. At the same time, there has been an increase in the number of people believing in the need to redistribute income more equally.

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# 1.4 Mental health problems among Estonia's adult population

KIRSTI AKKERMANN, RAINER REILE, KELLI LEHTO, HEDVIG SULTSON, MALL LEINSALU, LIINA HARING, KADRI KÕIV, LIISI PANOV AND KENN KONSTABEL

## KEY MESSAGE

**Data indicate that mental health problems are widespread among the adult population of Estonia. Based on self-reports, one in four adults is at risk of depression, and one in five is at risk of generalised anxiety disorder. Young adults are at significantly higher risk. The risk of depression and anxiety disorders increased during the COVID-19 pandemic. The risk of depression depends on the environment and health behaviours as well as genetic factors, but no single factor is decisive.**

## INTRODUCTION

Mental health disorders, or mental disorders, may disrupt self-control and coping skills, as well as a person's capacity for self-realisation, interaction with others, building relationships and contributing to society. Mental health disorders are complex problems arising from the interaction of genetic and environmental factors as well as individual behaviour. Every year, an estimated one in five people worldwide experiences some form of mental health problem, while one in three experiences mental problems sometime during their life (Steel et al. 2014). Individual mental health disorders have a significant economic impact on society as a whole. In Europe, the average total cost of mental disorders is estimated at over 4.1% of the gross domestic product (OECD 2018). This figure includes direct health care costs (1.3%), the cost of social protection programmes (1.2%) and indirect costs, such as those related to unemployment and lower productivity rates resulting from the disorders (1.6%).

According to Ferrari et al. (2022), the global prevalence rate of any of the more common mental disorders did not change significantly between 1990 and 2019. Depression, anxiety and eating disorders are more prevalent among women, while attention deficit and hyperactivity and autism spectrum disorders are more common among men. Compared to most other parts of the world, Europe has very high rates of anxiety disorders and attention deficit

hyperactivity disorder. These increased by approximately 5% between 1990 and 2019. However, Europe is not more depressed than the rest of the world, and depression rates in Europe decreased slightly from 1990 to 2019.

There is evidence that the rate of mental health disorders has increased worldwide during the COVID-19 pandemic, including an estimated increase of more than 25% in cases of depression or anxiety disorder (Santomauro et al. 2021). It is worth noting that these estimates are primarily based on data from wealthy countries and have been interpolated from self-report surveys. The long-term effects of the COVID-19 pandemic on mental health are still unclear.

The prevalence of mental disorders varies widely across studies. The main methods for determining prevalence are (a) the use of registry data, (b)

**Symptoms of depression and generalised anxiety disorder according to the International Classification of Diseases (ICD-10) and the Emotional State Questionnaire (EST-Q-2)**

| | ICD-10 | EST-Q-2 |
|---|---|---|
| **ASSESSMENT** | Medical assessment of the symptoms based on a clinical interview and other methods, with cases reflected in the registry data. | Self-report questionnaire about the frequency of experiencing the following problems during the past month. Answer options: 'not at all', 'rarely', 'sometimes', 'often', 'constantly'. |
| **DEPRESSION** | Main symptoms: lowered mood, loss of interest and zest for life, and decreased energy, which contributes to increased weariness and decreased activity.<br>Additional symptoms: decreased attention and concentration, lowered self-esteem, feelings of guilt and worthlessness, pessimistic outlook on the future, thoughts or actions of self-harm or suicide, disturbed sleep, and decreased appetite. | Sadness, loss of interest, feelings of inferiority, self-blame, repeated thoughts of death or suicide, feeling lonely, hopelessness about the future, and inability to feel joy. |
| **GENERALISED ANXIETY DISORDER** | The main indicator is generalised and persistent anxiety unrelated to specific environmental conditions.<br>Frequent complaints include persistent nervousness, tremors, muscle tension, sweating, dizziness, weakness, worrying and negative anticipation. | Irritability or anger, anxiety or fear, tension and inability to relax, excessive worrying, restlessness or impatience, fidgeting, and being easily startled. |

population-based surveys and (c) clinical interviews. Depending on the method used, studies can either overestimate or underestimate the prevalence of mental disorders. The prevalence rate of depression, for example, can vary several times depending on the assessment method (Sjöberg et al. 2017). While registry data can underestimate the prevalence of disorders, self-report surveys tend to overestimate it.

This article focuses on three questions. First, what is the prevalence of the most common mental health problems (depression, anxiety disorders, fatigue, sleep disorders and alcohol abuse) based on survey data, and how has it changed during the COVID-19 crisis? Second, what does registry data tell us about the prevalence of mental health disorders? Third, to what extent do genetic and environmental factors contribute to the occurrence of mental health disorders? Our approach to these questions will rely on data from the Estonian National Mental Health Study, the 2019 Estonian Health Interview Survey, the Estonian Genome Centre of the University of Tartu and the Estonian Health Insurance Fund.

## Prevalence of mental health disorders in the population

### Survey data show that mental health disorders are widespread

We used self-reported data collected for the Estonian National Mental Health Study in the first half of 2021 to estimate the prevalence of depression, anxiety disorders, sleep disorders, fatigue and alcohol abuse (and resulting mental disorders). Depression, anxiety and sleep disorders were assessed using the Emotional State Questionnaire (EST-Q-2) (Aluoja et al. 1999), and alcohol abuse was assessed using the AUDIT-C screening test (Bush et al. 1998).

The results of the study indicate a high prevalence of mental health disorders in the adult population. About a fourth of the respondents (28%) were at risk for depression (24% of men and 31% of women), and a fifth (20%) were at risk for anxiety disorder (15% of men and 25% of women). The risk of sleep disorders was found in 39% of the respondents (33% of men and 44% of women). Signs of mental exhaustion were seen in 43% of the respondents (36% of men and 48% of women).

A closer look at the data by gender and age group (Table 1.4.1) reveals that the group most at risk of experiencing these disorders were young adults (18-to-24-year-olds). Similar to previous research, the study found that in all age groups, women had a higher risk of depression and anxiety disorders than men. While there were no statistically significant gender differences in the risk of sleep disorders, the risk was shown to increase with age.

Alcohol abuse was indicated in 17% of women and 34% of men. However, there were no gender differences in the prevalence of alcohol abuse in the younger age groups (18–34) (Table 1.4.1). From the age of 35, alcohol abuse was significantly more frequent among men, affecting as much as 49% of male respondents aged 35 to 44.

**The prevalence of mental health disorders in the Estonian adult population is high: 28% are at risk of depression, 20% are at risk of anxiety disorder, 39% are at risk of sleep disorders and 43% are at risk of mental exhaustion.**

**Table 1.4.1.** Prevalence of mental health problems (%) by gender and age group based on data from self-reports (EST-Q-2, AUDIT-C) in the Estonian National Mental Health Study

| | Depression | | Generalised anxiety | | Fatigue | | Insomnia | | Alcohol abuse | |
|---|---|---|---|---|---|---|---|---|---|---|
| Age | Men | Women | Men | Women | Men | Women | Men | Women | Men | Women |
| 18–24 | 50.0 | 63.5 | 29.2 | 46.8* | 53.7 | 79.2* | 30.2 | 37.6 | 32.0 | 29.8 |
| 25–34 | 32.5 | 31.6 | 21.3 | 32.1 | 42.9 | 54.6* | 28.3 | 38.8 | 39.4 | 30.1 |
| 35–44 | 22.1 | 32.7* | 17.4 | 25.7* | 34.6 | 50.9* | 34.1 | 33.3 | 49.3 | 24.5* |
| 45–54 | 10.8 | 27.2* | 9.9 | 19.8 | 24.9 | 43.5 | 25.2 | 34.3 | 36.5 | 21.5* |
| 55–64 | 22.3 | 26.3 | 10.2 | 17.9* | 36.6 | 38.1* | 39.3 | 52.1 | 30.7 | 10.0* |
| 65–74 | 17.0 | 21.9 | 5.5 | 22.5 | 29.6 | 38.2* | 42.5 | 48.6 | 19.5 | 8.4* |
| 75–84 | 12.2 | 26.1* | 3.5 | 19.8* | 30.0 | 46.4* | 28.2 | 59.7 | 7.0 | 1.4* |
| 85+ | 40.0 | 36.4 | 5.1 | 18.2 | 66.8 | 55.6 | 40.6 | 58.3 | 2.0 | 0.3 |
| **TOTAL** | **23.9** | **30.8*** | **14.5** | **24.9*** | **36.3** | **48.3*** | **32.7** | **44.0*** | **33.9** | **16.2*** |

**SOURCE:** table by the authors, based on data from the first wave of the Estonian National Mental Health Study conducted in January–February 2021 (depression, generalised anxiety, fatigue and insomnia; N = range 5,336–5,484) and the second wave conducted in May–June 2021 (alcohol abuse; N = 3,607)

**NOTE:** *Statistically significant difference between men and women, $p < 0.05$.

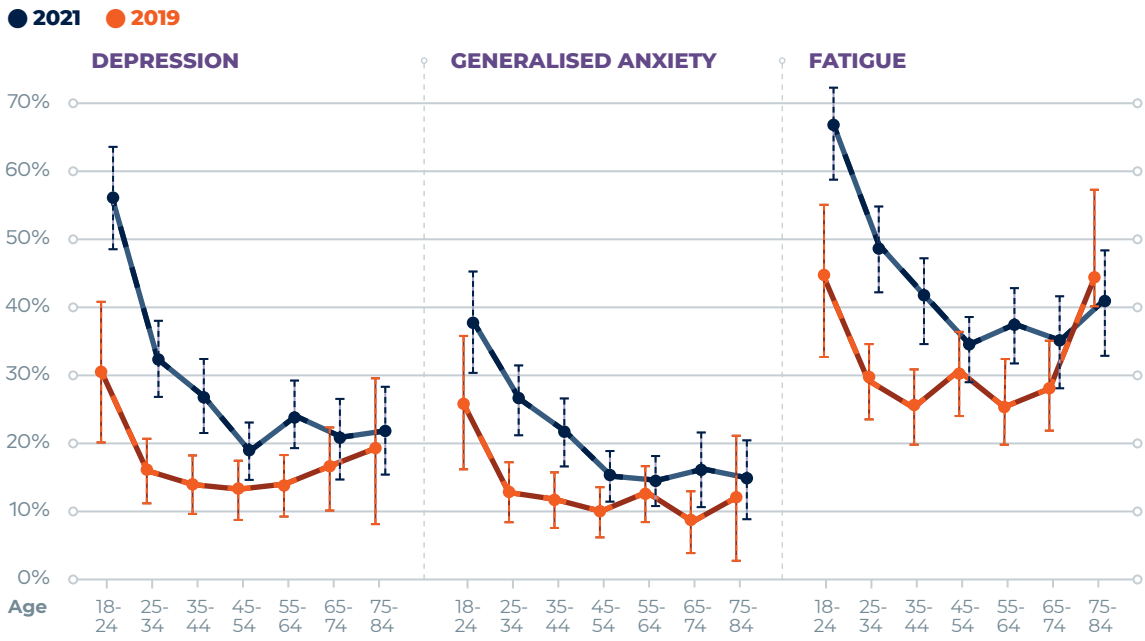
## The prevalence of mental health disorders increased during the COVID-19 pandemic

The COVID-19 pandemic led to a significant increase in mental health problems, particularly depression and anxiety disorders, and a decrease in well-being in all EU member states (WHO 2022). According to data from the first wave of the Estonian National Mental Health Study, 15% of men and 20% of women felt that their mental health had significantly deteriorated during the COVID-19 crisis. The share of people with deteriorated mental health was significantly higher among younger people. For example, 28% of men aged 18–29 felt that their mental health had deteriorated, while the same was true for only 7% of middle-aged men (45–59) and 10% of older men (60–85+). Forty percent of women aged 18–29 rated their mental health as worse than before the pandemic, while only 18% of middle-aged women and 12% of older women felt this way.

Comparing depression, anxiety disorder and fatigue indicators in the Estonian National Mental Health Study data and the Estonian Health Interview Survey data collected in 2019 shows similar results for the prevalence of mental health disorders during the pandemic. The results indicate that during the pandemic, the risk of depression and generalised anxiety disorder, as well as signs of fatigue, increased significantly among people aged 18 to 44 (Figure 1.4.1). Mental health problems were most common among 18-to-24-year-olds even before the pandemic. During the pandemic, the share of young people at risk of depression further increased. In older people, on the other hand, self-reports indicated no differences in the risk of depression between the time before and during the pandemic.

**During the COVID-19 pandemic, there was a significant increase in mental health problems and a significant decrease in well-being.**

**Figure 1.4.1.** Prevalence of mental health problems (depression, generalised anxiety, fatigue) by age group based on self-reports




**SOURCE:** figure by the authors, based on data from the first wave of the Estonian National Mental Health Study (Jan–Feb 2021) and from online respondents of the 2019 Estonian Health Interview Survey

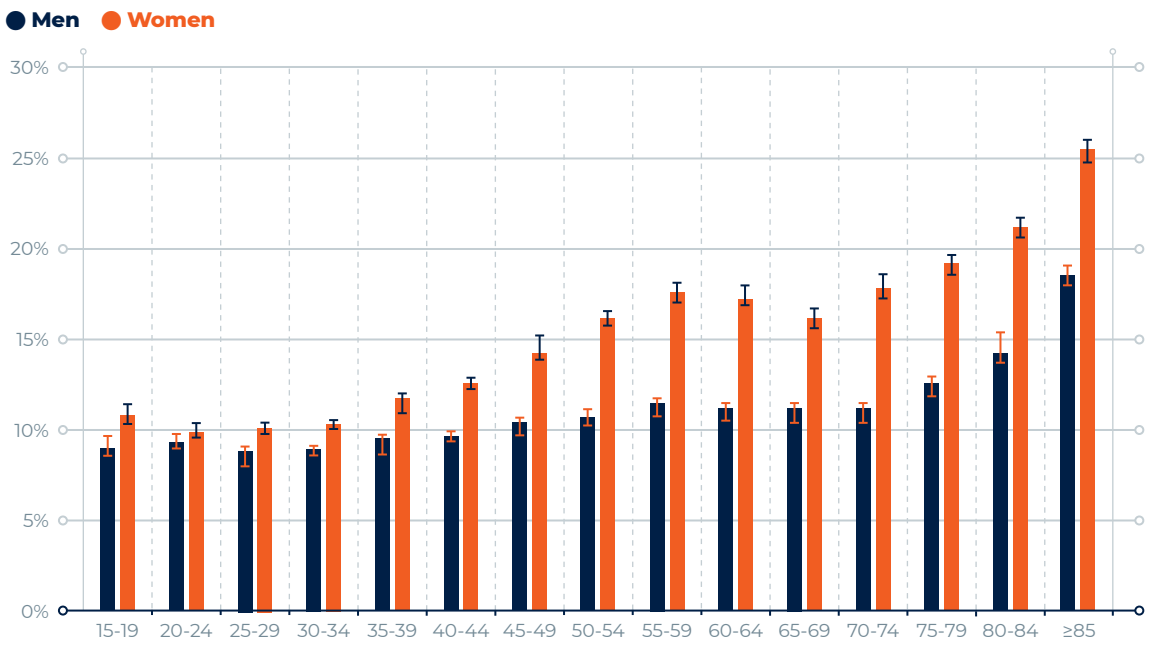
## The prevalence of mental health disorders is significantly lower according to treatment cases in registry data

Due to Estonia's high rate of coverage (about 95% of the population has medical insurance), registry data from the Estonian Health Insurance Fund treatment bills database provide a good overview of the number of diagnosed mental disorders in the population. The following describes the prevalence of all mental disorders (ICD-10 sections F00–F99) among the Estonian population aged 15 and older, with a special focus on anxiety disorders (F40–F41), depression (F32–F33), alcohol-related mental and behavioural disorders (F10) and sleep disorders (F51). This is done using data on treatment bills for 2016–2020 from the Health Insurance Fund database. The rates presented here as prevalence (and their 95% confidence intervals) have been found based on the number of people with a corresponding treatment bill and the average population of the year by gender and five-year age groups.

On average, almost 142,000 people per year had a mental disorder cited as either the primary or concomitant diagnosis on their treatment bill. From 2016 to 2020, the number of cases of treating mental disorders increased by an average of 1% per year (from 139,470 in 2016 to 144,738 in 2020). The number of cases of treating diagnosed mental disorders did not decrease in 2020, despite the partial suspension of planned treatment in response to the COVID-19 pandemic.

Patients being treated for mental disorders are more likely to be women than men. In 2020, women made up 57% of all medically insured persons aged 15 and over. Meanwhile, they accounted for 63% of the people treated for mental disorders. Gender differences in the distribution of mental health treatment cases also stand out in the comparison of age groups (Figure 1.4.2), where the prevalence of mental disorders among women is higher by almost a fifth than among men in people aged 15–34 and

**Figure 1.4.2.** Prevalence and 95% confidence interval of all cases for treating mental and behavioural disorders in Estonian residents aged 15 and older, by gender and five-year age group




**SOURCE:** figure by the authors, average for the period 2016–2020 based on data from the Estonian Health Insurance Fun

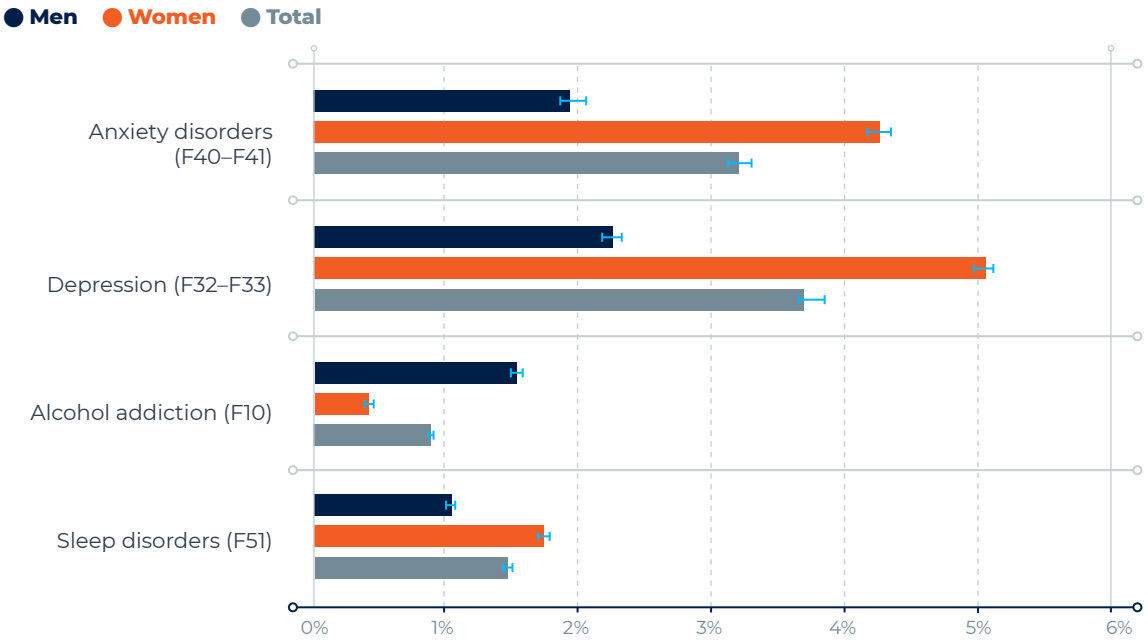
by almost a fourth in people aged 35 and older. Between 2016 and 2020, an average of 10% of men and 15% of women had treatment bills that included a diagnosis of a mental disorder. The prevalence of registered cases of mental disorders increased with age in both men and women, with the highest rates in the oldest age group.

Figure 1.4.3 shows the average prevalence of anxiety disorders, depression, sleep disorders, and mental and behavioural disorders resulting from alcohol abuse for the period 2016–2020. Every year, an average of 36,000 people had treatment bills with a diagnosis for anxiety disorders. Over five years, the number of treatment cases increased by almost a fourth (32,344 in 2016 v. 39,500 in 2020), or an average of 5% per year. Between 2016 and 2020, the average prevalence of anxiety disorders or phobias among 15-year-olds and older was 2% for men and 4% for women. In men, the prevalence rate was highest among 20-to-24-year-olds (3%), while in women, it rose above 4% from the age of 35.

Every year, an average of 41,400 people, or 4% of the Estonian population, had treatment bills with a diagnosis for depression. As with anxiety disorders, women were more than twice as likely as men to be diagnosed with depression (5% v. 2%). Going by age group, the prevalence was highest among 50-to-59-year-olds (6–7% in women and 2–3% in men).

An average of 10,200 people a year had treatment bills that featured a diagnosis of mental and behavioural disorders resulting from alcohol abuse, with 78% of these cases involving men. Thus the rate of mental disorders resulting from alcohol abuse was significantly higher in men (1.6%) than in women (0.4%), with the highest rates in men aged 50 to 59 (2.3–2.8%). In women, the prevalence of these disorders remained below 1% in all age groups. It is, however, important to consider that the number of diagnosed cases of mental disorders resulting from alcohol abuse does not reflect the actual prevalence of problematic alcohol use in society.

**Figure 1.4.3.** Prevalence of cases for treating selected diagnosed mental and behavioural disorders (anxiety disorders, depression, alcohol addiction, sleep disorders), with 95% confidence intervals, in Estonian residents aged 15 and older, by gender




**SOURCE:** figure by the authors, average for the period 2016–2020 based on data from the Estonian Health Insurance Fund

An average of 15,700 people per year had treatment bills with a sleep disorder diagnosis, and two-thirds of these bills were for women. The prevalence of sleep disorders was 1.7% in women and 1.0% in men. In both men and women, the prevalence increased with age, with the highest rates found among people aged 85 and older.

## Genetic and environmental determinants of mental health

Genes and environment both play a role in the development of mental health problems. The reasons for the manifestation of mental health problems include both hereditary or genetic factors and environmental factors (e.g. stress, childhood experiences, socioeconomic status and lack of social support). For decades, researchers in twin and family studies have sought to determine how much either of these factors contributes to the variability in the occurrence of a given disorder. These studies rely on the premise that identical twins share 100% of their genetic material, while fraternal twins and ordinary siblings share about 50% of their genetic material. Thus, by comparing identical and fraternal twins, it is possible to calculate mathematically how much both genetic and environmental factors contribute to the manifestation of a disorder. Today, it is known that both genetic and environmental factors play a role in the manifestation of various mental health problems, but the balance between the two is different for each problem. For example, genetic factors explain approximately 30–50% of the variability

**Both genetic and environmental factors play a role in the manifestation of various mental health problems, but the balance between the two is different for each problem.**

in depression (Kendall et al. 2021), while explaining 80% of the variability in schizophrenia (Legge et al. 2021). The remaining part is made up of both environmental factors and measurement errors.

### Depression has a genetic predisposition

Taking the example of depression as the most frequently diagnosed mental health disorder, we used data from the Estonian Biobank to illustrate the relationship between genetic predisposition to depression and a diagnosis of depression. The Estonian Biobank's database contains information on over 200,000 Estonian adults, including their genetic data, their health data from national databases and their answers to the biobank participant questionnaires. Genetic predisposition to depression is determined through an individual genetic risk score, which is essentially the weighted sum of all the gene variants that have been linked with depression (Howard et al. 2019). To make the results easier to interpret, we divided the genetic risk score for depression into 10 deciles, the first of which includes the 10% of people with the lowest genetic predisposition to depression, and the last of which includes the 10% of people with the highest predisposition. In the analysis, we used data from treatment bills from the Estonian Health Insurance Fund's database that featured a diagnosis of depression (RHK-10 codes F32 and F33) in the last five years (2016–2020). Analysis of data from the Estonian Biobank reveals that during this period, depression occurred in 8% of the people with the lowest genetic predisposition and in 16% of the people with the highest genetic predisposition.

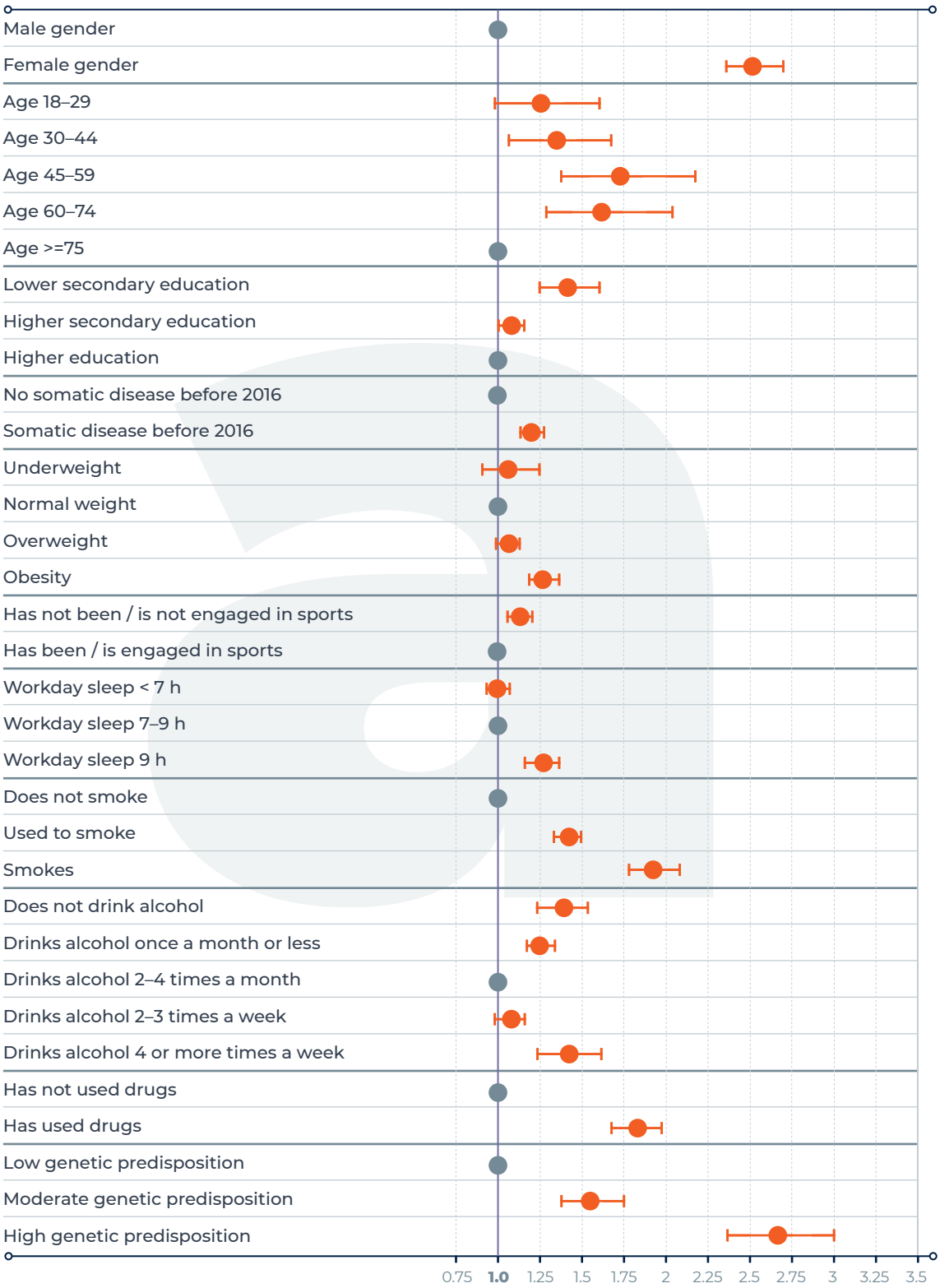
Next, we investigated how the combination of genetic predisposition and demographic, health and lifestyle factors predicted the occurrence of a depression diagnosis in the same period (2016–2020) and, by comparison, the risk of depression during the COVID spring of 2021 (Figure 1.4.4). Lifestyle data is based on a self-report questionnaire completed by biobank participants upon signing up for the Estonian Genome Project before the start of the pandemic (between January 2017 and February 2020). The risk of depression was assessed from March to July 2021, using EST-Q-2 (Aluoja et al. 1999), and the majority of respondents completed the questionnaire during the period of strict restrictions during the second wave of COVID-19.

In the analysis, we used two logistic regression models: one to predict the diagnosis of depression in the last five years and another to predict a high risk of depression during the pandemic. In order to compare the strength of associations between different risk factors and protective factors, we included all demographic, health and lifestyle factors and genetic risks in the models simultaneously.

Figure 1.4.4.a shows that the factors most strongly associated with being diagnosed with depression are female gender and a higher genetic predisposition. Females were 2.5 times as likely as males to be diagnosed with depression. High and moderate genetic predisposition increased the odds of being diagnosed with depression by 2.7 and 1.6 times, respectively, compared to those with low genetic risk. While the odds of being diagnosed with depression were highest among people aged 45–74 and were significantly higher among older people, there were no statistically significant differences between other age groups.

**The factors most strongly associated with being diagnosed with depression are female gender and a higher genetic predisposition.**

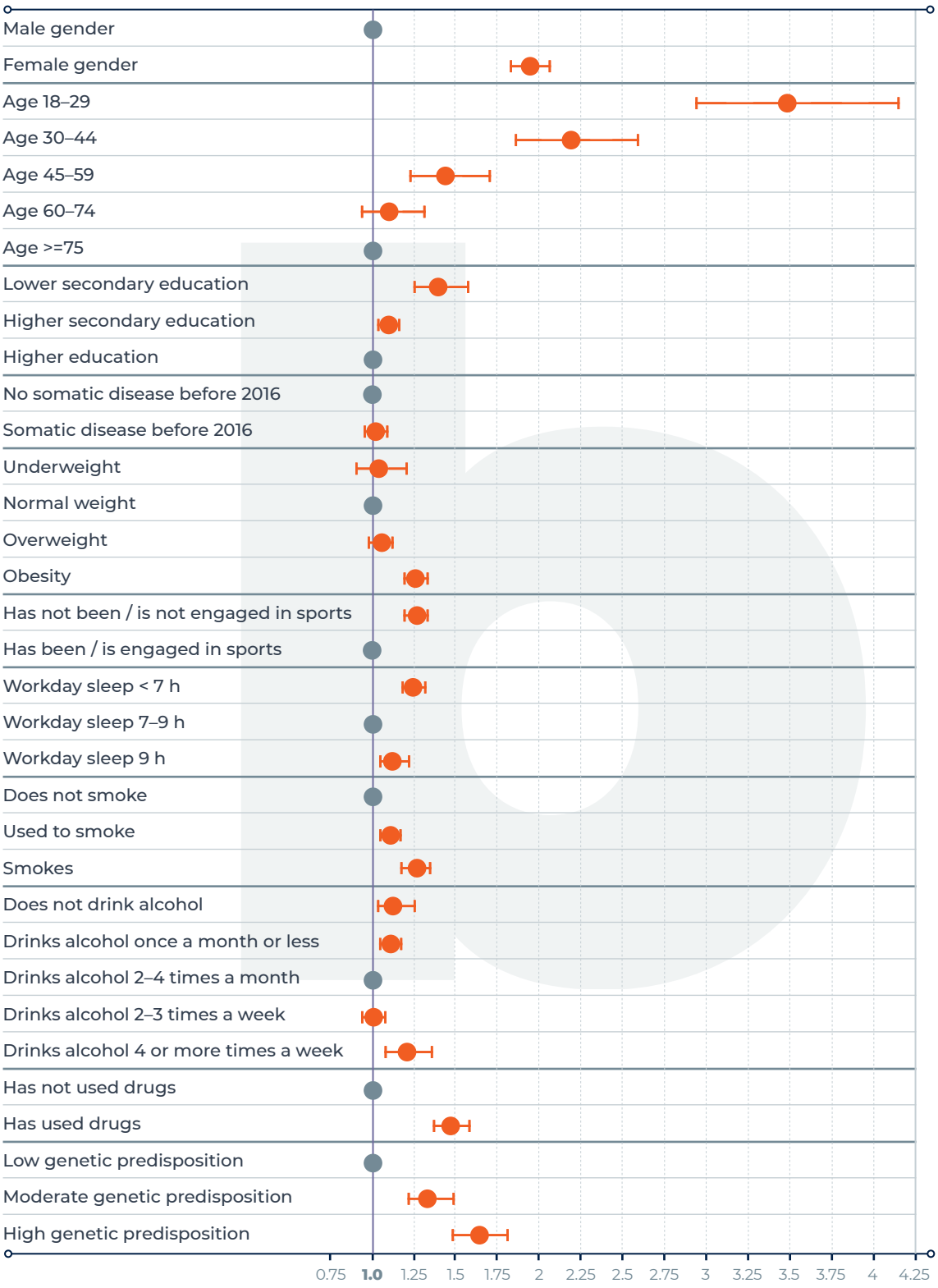
**Figure 1.4.4.a** Relationship between demographic, health, lifestyle and genetic factors and a depression diagnosis during **five years (2016–2020)** (N = 42,556)




**SOURCE:** figure by the authors, based on data from the Estonian Biobank

**NOTE:** The figure shows odds ratios with 95% confidence intervals; the reference categories have unmarked confidence intervals, and the remaining categories have been assessed relative to the reference categories.

**Figure 1.4.4.b** Relationship between demographic, health, lifestyle and genetic factors and a high risk of depression during the **COVID-19 pandemic (spring 2021)** (N = 44,316)




**SOURCE:** figure by the authors, based on data from the Estonian Biobank

**NOTE:** The figure shows odds ratios with 95% confidence intervals; the reference categories have unmarked confidence intervals, and the remaining categories have been assessed relative to the reference categories.

We also see that people diagnosed with depression were more likely to have a lower level of education, have a concomitant somatic disease, be obese and have a less healthy lifestyle, move less, and smoke and drink more. Although alcohol abuse was strongly associated with being diagnosed with depression (1.4 times the odds of being diagnosed), those who rarely or never drink alcohol were also 1.3–1.4 times as likely to be diagnosed with depression as moderate drinkers were. This association can be due to a variety of reasons; the reasons for abstaining from alcohol may, in turn, be related to depression (e.g. health considerations or the use of certain medications). Drug use increased the odds of diagnosed depression by 1.8 times.

Figure 1.4.4.b illustrates the associations of these factors with a high risk of depression during the pandemic. All in all, the associations were very similar to the pre-pandemic period, with a high depression risk most strongly associated with female gender, obesity, unhealthy lifestyle and a high genetic risk. However, there were also differences. The biggest difference was between age groups; young adults were at the greatest risk of depression during the pandemic. Although since the beginning of the pandemic, older people have been considered at risk for mental health problems due to loneliness caused by isolation and a higher risk of developing severe forms of COVID-19, young adults are 3.5 times as likely to experience depression as older people. This association probably reflects the stronger impact of coronavirus restrictions on the everyday life of young adults, with many changes to the areas of work and school (home office, online learning), as well as the social sphere (fewer opportunities for social interaction and entertainment).

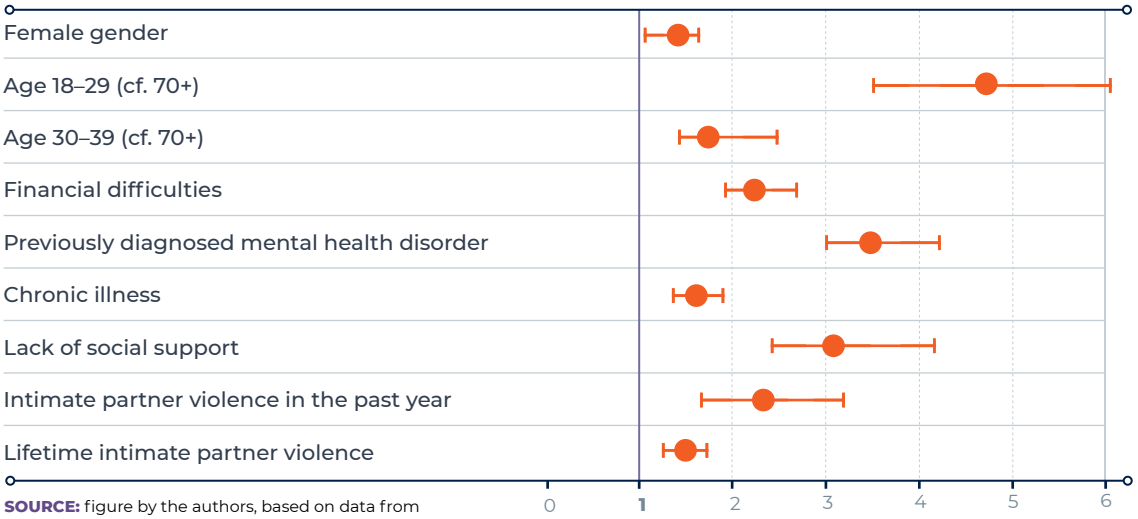
Another difference was found in the amount of sleep. While pre-pandemic diagnoses of depression were primarily associated with excessive sleep (more than nine hours on working days), risk of depression during the pandemic was also associated with insufficient sleep (less than seven hours on working days). These differences suggest that people who already slept less before the pandemic were more susceptible to the uncertainty and changing living arrangements during the pandemic, which in turn led to their increased risk of depression. While the presence of a somatic disease before 2016 increased the odds of being diagnosed with depression between 2016 and 2020, this association was absent in the context of the pandemic.

**People diagnosed with depression are more likely to have a lower level of education, a concomitant somatic disease and a less healthy lifestyle. They are more likely to be obese, move less, and smoke and drink more.**

## Depression risk is associated with the psychosocial environment

In the following, we present the effects of the most empirically confirmed environmental factors on the risk of depression, based on self-reports from the first wave of the Estonian National Mental Health Study (January–February 2021). More specifically, we assessed the effect of factors such as education, income, presence of chronic illness, the presence of a previously diagnosed mental health disorder, perceived social support and the experience of intimate partner violence, using a logistic regression prediction model, taking into account age, gender and nationality. The odds ratios of the characteristics that were statistically significant in predicting the risk of depression are presented in Figure 1.4.5.

**Figure 1.4.5.** Relationship between socio-demographic, health-related and psychosocial environmental factors and the risk of depression (odds ratios with 95% confidence interval)




**SOURCE:** figure by the authors, based on data from the first wave of the Estonian National Mental Health Study (Jan–Feb 2021)

Although education and nationality both increased the risk of depression individually, both remained insignificant in predicting the risk of depression when other factors were taken into account. The results show that women were 1.3 times as likely as men to experience depression and 2.3 times as likely as men to experience depression in the event of financial difficulties (in other words, if there is not enough money to live on and put aside). Age is also an important predictor of the risk of depression: there is a higher risk among younger age groups. For example, people aged 18–29 were 4.7 times as likely to be depressed as the oldest age group (over 70).

The presence of a chronic illness and a previously diagnosed mental health disorder were the two health-related factors that significantly predicted the risk of depression. People with a chronic illness are 1.6 times as likely to be depressed, and those with a pre-existing mental health disorder are 3.6 times as likely to be depressed.

Factors related to family and intimate relationships, specifically intimate partner violence and lack of social support, also play an important role in predicting the risk of depression. The analysis showed that the presence of perceived social support, such as knowing that one could count on the help of loved ones, was an important factor in fending off depression: the absence of social support made depression 3.2 times as likely. Intimate partner violence experienced in the last year predicts a 2.3-fold increase in the odds of having depression, and intimate partner violence experienced at some point in life predicts a 1.4-fold increase in the odds of having depression.

**The presence of a chronic illness and a previously diagnosed mental health disorder were the two health-related factors that significantly predicted the risk of depression.**

## SUMMARY

The occurrence of mental health problems is relatively frequent among the Estonian population. Based on self-reports, one in four adults is at risk of depression, and one in five is at risk of generalised anxiety disorder. The risk is significantly higher in young adults. Our registry study found that from 2016 to 2020, nearly a fourth of adults were diagnosed with at least one mental disorder, most frequently depression (12%) or anxiety disorders (10%). Since the pandemic started, the risk of depression and anxiety disorders in the population has increased.

Both genetic and environmental risk factors contribute to the manifestation of mental health problems. Depression that was diagnosed before the pandemic was most strongly associated with being female and having a high genetic predisposition, followed by lifestyle factors (smoking, alcohol abuse and drug use). During the pandemic, the factor most strongly associated with the risk of self-reported depression was younger age, followed by female gender, genetic predisposition, and alcohol and drug use.

While self-report surveys show that young adults are at higher risk of mental health disorders, registry data indicate that they are not more frequently diagnosed. The current data do not allow us to determine the causes. Higher risk scores in young people may indicate a greater number of mental health problems, but they may also indicate higher stress levels, which are temporary. Different attitudes and the lack of stigma are another possible cause: young people are more willing to accept the possibility of a mental health problem and do not treat it with as much shame as older generations did. Each of these factors probably plays a role.

The focus on gender differences in this article may give the impression that women are more likely to have mental disorders, when in fact, gender differences depend on the mental disorder. It has been found that while internalising disorders (which include depression and anxiety disorders) are more common in women, externalising disorders (which include behavioural disorders, attention deficit disorders and disorders related to alcohol and drug abuse) are more common in men (Eaton et al. 2012). However, due insufficient data, externalising disorders were not discussed in this article, except for alcohol abuse, which was more frequently found in men.

Finally, it is worth considering the role of the method used to collect data on mental health problems. Questionnaires typically overestimate the presence of disorders, while one-to-one interviews (as used in many health studies) discourage the disclosure of mental health problems, meaning that they might go undetected. Estimating the prevalence of disorders based on diagnosed cases relies on the assumption that services are easily accessible to all those in need of help (since getting diagnosed requires using a service) and that everyone with mental health concerns is well-informed about the options for getting help. Only then is it possible to assume that the statistics of diagnosed mental health disorders

**While self-report surveys show that young adults are at higher risk of mental health disorders, registry data indicate that they are not more frequently diagnosed.**

reflect the actual prevalence of disorders. If access to mental health services is limited, and mental health disorders and getting treatment are looked down on and stigmatised, assessments based on diagnosed cases are likely to underestimate the actual prevalence.

**If access to mental health services is limited, and mental health disorders and getting treatment are looked down on and stigmatised, assessments based on diagnosed cases are likely to underestimate actual prevalence.**

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# 1.5 Activities and services supporting mental health in Estonia: The current situation and development needs

RENÉ RANDVER, KARIN STREIMANN, MERLE PURRE, HEDVIG SULTSON, JAAN TULVISTE, KIRSTI AKKERMANN AND LIINA HARING

## KEY MESSAGE

**Preventing mental health problems is cheaper than treating them, but Estonia does not have a systemic prevention strategy in the field of mental health. The care pathways for people with mental health problems are fragmented, complex and under-resourced. High-quality and (cost-)effective interventions and cooperation between support systems support people's mental health and well-being.**

## INTRODUCTION

Approximately every fifth person worldwide experiences a mental health disorder every year (Steel et al. 2014). For Estonia's population size, this equals to about 260,000 people yearly. Between 2016 and 2020, more than 140,000 people in Estonia had a mental disorder cited as the primary or concomitant diagnosis on their treatment bill. This suggests that more than 100,000 people do not seek or receive help for their mental health problems from the healthcare system. According to the OECD, Estonia annually loses 2.8% of its GDP, or 572 million euros, due to mental health problems (OECD 2021).

The Green Paper on Mental Health presents a vision of an optimal distribution of mental health services and supporting activities (Ministry of Social Affairs 2020a). The pyramid diagram in Figure 1.5.1 shows that the greatest need is for lower-level interventions, such as self-care and community-based services that support mental health. Specialist care is placed on the highest level in the hierarchy of services, as it is expensive but less widely needed if the lower levels function effectively.

The core problems with the mental health services system in Estonia are the fact that care pathways[1] are fragmented and complex, there is a shortage of specialists, cooperation is lacking and the division of roles is unclear, there are not enough at-home and community-

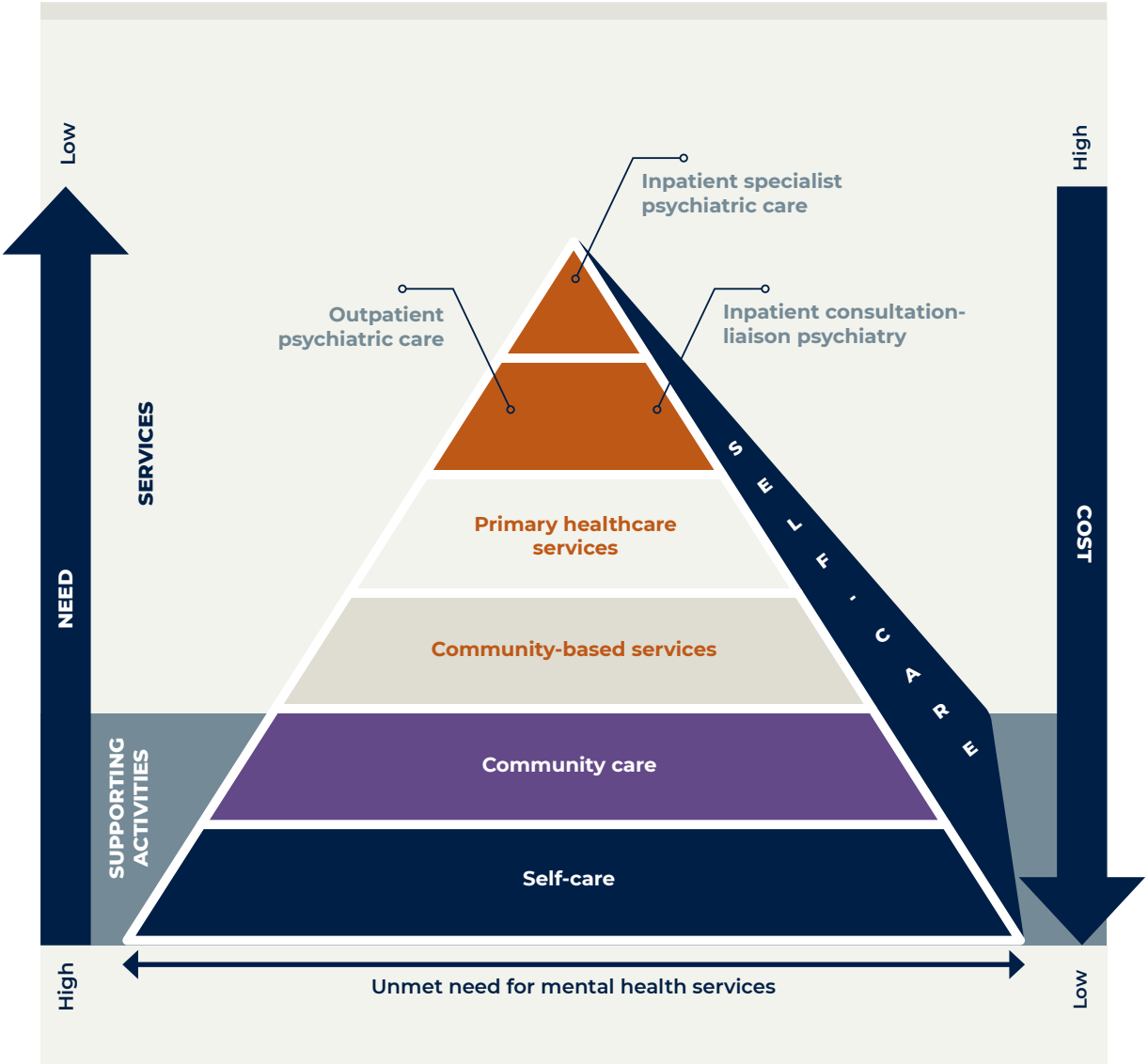
1 A care pathway is a structured multidisciplinary plan that lays out the most important steps to help a person with health problems. Using strategies based on care pathways and care teams helps direct support systems towards providing people-centred services.

**Only people with severe problems tend to reach mental health services. Helping people before they develop critical problems reduces, over time, the number of people who need specialist medical care.**

based services, and the services are not people-centred. So far, access to specialist medical care services has been seen as the greatest development need in the field. As a result, only people with severe problems tend to reach mental health services. Helping people before they develop critical problems reduces, over time, the number of people who need specialist medical care. Effective, high-quality mental health support services in the community would reduce the demand for higher-level care, but the funding of community-based services in Estonia is fragmented between state authorities, municipalities and NGOs. The services are temporary and the quality uneven. Mental health problems are often stigmatised, which discourages people from seeking and receiving care.

This article provides an overview of the different types of mental health

**Figure 1.5.1.** Pyramid of mental health services and supporting activities




**SOURCE:** Green Paper on Mental Health (Ministry of Social Affairs 2020a)

interventions – supporting activities and services – in Estonia and describes the problems, development needs and possible solutions. The underlying premise is that preventing mental health problems is less expensive than treating them, and interventions that support mental health are cost-effective.

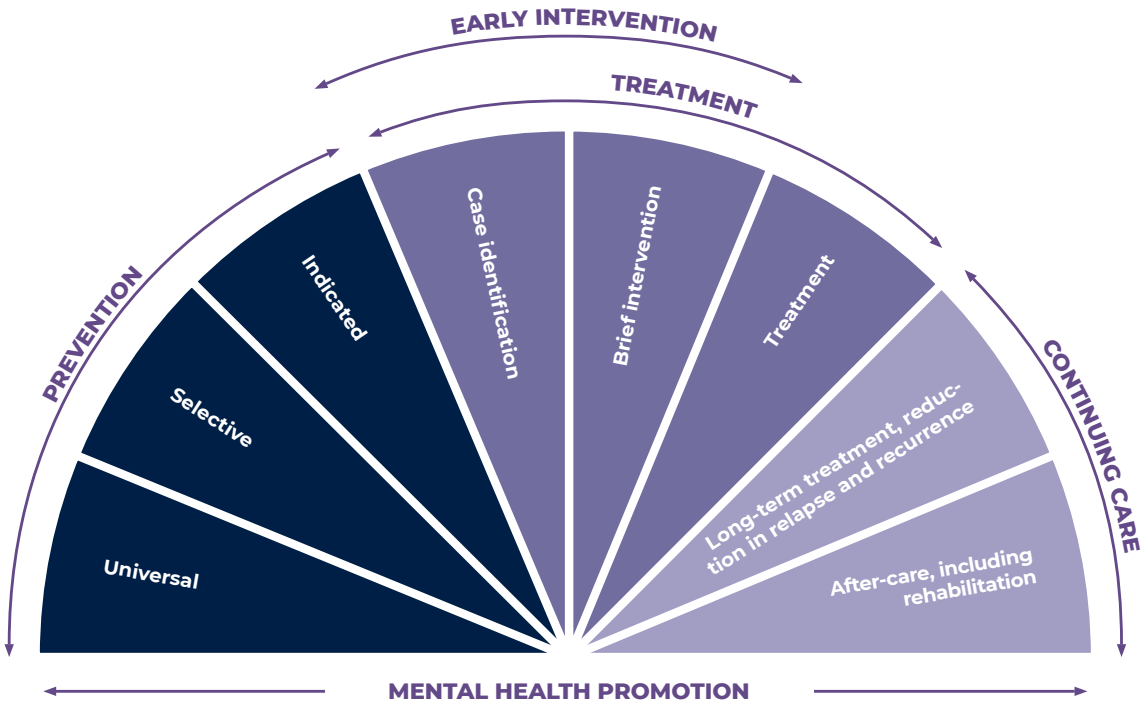
## The purpose and types of mental health interventions

Mental health interventions support people's well-being and prevent mental health problems and their consequences from developing, worsening or recurring. As human behaviour and well-being are influenced by individual, social and structural factors (Barry and Jenkins 2007), interventions can take place in various environments and be aimed at different target groups (Table 1.5.1). Supporting mental health begins with adapting the living environment and expanding the available (self-) care options.

Many mental health problems are preventable and can be treated before they reach the healthcare system. If intervention by a healthcare specialist is necessary, people should receive it already on the primary level. General practitioners can involve mental health specialists when needed and refer the patient to a mental health nurse or to psychiatric treatment.

**Supporting mental health begins with adapting the living environment and expanding the available (self-)care options.**

**Figure 1.5.2.** The mental health intervention spectrum




**SOURCE:** Haggerty and Mrazek 1994

Various digital solutions support the provision of healthcare services (e.g. e-Health Record, digital prescriptions, remote appointments and e-consultations between specialists).

Interventions can be divided into three groups: prevention, treatment and continuing care (Figure 1.5.2). Support networks, community support services and self-care play an important role in all three areas.

**Table 1.5.1.** Examples of mental health interventions that could be uniformly accessible in Estonia in the future

| INTERVENTION LEVEL | AGE GROUP: Prenatal age and infancy (0 to 1) | Early childhood (2 to 5) | Middle childhood (6 to 10) | Early adolescence (11 to 15) | Late adolescence (16 to 20) | Young adulthood (21 to 35) | Middle age (36 to 64) | Older adulthood (65 and up) |
|---|---|---|---|---|---|---|---|---|
| **INDIVIDUAL** | Prenatal and postnatal monitoring<br>Home visits | Parenting skills training<br>Promoting healthy lifestyles (physical activity, optimal nutrition) | | | Suicide prevention<br>Interventions preventing substance use<br>Interventions related to sexual behaviour | | Interventions preventing domestic violence<br>Interventions reducing the harm of substance abuse | Preventing injuries at home (falling, fire safety, acute health disorders, etc.) |
| | Early childhood interventions[a] | | | | Interventions preventing social isolation and loneliness | | | |
| | Supporting the family in difficult situations (grief, divorce, trauma, parents' mental health problems or substance abuse, imprisonment of parents, job loss, special and/or caregiving needs, etc.) | | | | | | | |
| **COMMUNITY** | Reducing health risks arising from socioeconomic conditions[b] | | | | | | | |
| | Single- and multi-component community interventions[c] | | | | | | | |
| **INSTITUTION** (e.g. school, workplace, healthcare provider) | | Developing self-management and social skills | | | | Support from mental health specialists at the primary level of healthcare[d] | | |
| | | | Improving the classroom environment and preventing behavioural problems<br>Creating a safe and supportive atmosphere in educational institutions | | | Creating a safe and supportive atmosphere in the working environment<br>Support from mental health experts at the level of specialist medical care[e] | | |
| | | | | Reducing individual vulnerability, preventing the development of mental disorders | | | | |
| | | Mental health support in educational institutions | | | | Mental health support in the working environment | | |
| **SOCIETY** | Interventions related to the promotion of healthy lifestyles (e.g. physical activity, nutrition, sexual behaviour)<br>Strategies, policies and laws that reduce poverty, improve living conditions, support healthy diets and school attendance, increase inclusion, limit access to controlled substances and related advertising, and reduce substance use | | | | | | | |

**SOURCE:** table by the authors

**NOTES:**

a For example, high-quality preschool education that knowingly supports the child's well-being and development; interventions for families at high risk of maltreatment; and healthcare system-based interventions preventing the development and progression of developmental disorders.

b Municipalities offering or mediating support services (including daycare, at-home services and personal care) through social workers, child protection specialists and others.

c Community interventions measures include psychological counselling (both individually and in groups), support groups, intervention programmes (e.g. 'Incredible Years') and others. The content and form of support may vary across support systems. For example, in addition to school psychologists, primary mental health support in educational institutions is provided by teachers, special educational needs coordinators, special education teachers, social pedagogues and others; in a working environment, this is done by (occupational) psychologists, supervisors and coaches.

d Mental health specialists working at the primary level of healthcare, including mental health nurses and psychologists (e.g. counselling psychologists and psychologists working under supervision).

## Preventive interventions help avoid problems

Preventive interventions help avoid problems emerging or disorders developing throughout life. For example, parents can prevent their child's mental health problems even before birth by learning about relationship patterns and the child's development, and monitoring the mother's mental and physical health during pregnancy. In Estonia, parents can attend family-oriented educational courses, and midwives monitor expectant mothers, but little guidance about changing family relationships is available to parents before childbirth.

Parent-focused interventions (e.g. parenting programmes, family and couples therapy) are effective (Le et al. 2021), but in Estonia they are mostly not free and not accessible to everyone. More than half of Estonian parents have felt that they need help and support in raising their child but either have not known where to get advice or help or have not dared to ask for it (Anniste et al. 2018).

The family supports the child's mental health during the first years of life. When the child goes to kindergarten or childcare, educational institutions help prevent mental health problems (see Valk et al. in Chapter 3). Prevention in kindergarten and school means developing age-appropriate social-emotional skills and creating a safe and supportive atmosphere. For example, schools implement the PAX Good Behaviour Game and the KiVa anti-bullying programme, which have been proven to reduce mental health problems. However, not all educational institutions use preventive intervention measures, and the effectiveness and quality of many of the interventions used are unknown. Interventions for

### COURSES FOR SUPPORTING PARENTS IN ESTONIA

- The Incredible Years parenting programme is for parents of children aged two to eight years and other carers who need support and want to learn how to become better at parenting. The programme takes place over 16 weeks, and small groups meet for weekly sessions lasting 2–2.5 hours. Under the guidance of two experienced instructors and using active learning methods, parents learn how to set boundaries effectively, encourage the child, resolve conflicts and cope with stress. Childcare is available on-site.
- Gordon's Parent Effectiveness Training is intended for parents or adults raising children and specialists working with parents or children who want to learn more about parenting and family relationships. The programme lasts for eight weeks, and small groups meet for three-hour sessions each week. Using active learning, parents learn about methods for active listening, being assertive and conflict resolution.

**SOURCE:** www.tarkvanem.ee

vulnerable groups are not accessible to everyone. Based on a National Audit Office (2020) audit, only two-thirds of children receive the support services (social pedagogues, school psychologists, special education teachers, speech therapists) they need and that are required by law through educational institutions.

The community's role in prevention increases during adolescence. For example, alcohol and tobacco policy (including access to substances) affects minors' substance use, which in turn influences the emergence of other mental health problems (see Vorobjov et al. in Chapter 2). In adulthood, community-based prevention means reducing loneliness and isolation and supporting social relationships by using recreational activities, mental well-being support groups and other similar means.

The working environment influences the mental health of working-age people (see Kovaljov et al. in Chapter 3). In Estonia, prevention aimed at maintaining mental health in the workplace is in its infancy. Some establishments do offer or mediate psychological counselling or training, but there are few long-term systematic solutions that include developing the management's competence to support mental health in the workplace, involving employees, joint activities, reduced workload and flexible working conditions.

**A special-needs teacher working in an Estonian school on the state of prevention in the field of education:**
'We have had very few options for prevention. We are putting out fires because so many of the school staff and students need help.'

**SOURCE:** Streimann and Vilms 2021

## Municipalities and NGOs play a major role in community interventions

In Estonia, mental health interventions (support services and activities) at the municipality and community level have great potential but are underutilised. Local municipalities can facilitate people's efforts to get help and support early by mediating, for example, hobby clubs, societies and targeted voluntary help and also more formal services, such as counselling and social transport, and

**A public health specialist on community-based prevention that supports mental health:**
'I think that this kind of involvement or prevention on the community level has a very big impact … I mean the local societies and meet-ups, they should not just be gatherings for dancing and singing. It is possible to bring people together with other objectives as well and include those who might otherwise not leave the house … we have been busy with such activities at the moment.'

**SOURCE:** Streimann 2019

by providing access to support groups and intervention programmes. A good example of community support services is psychological counselling that is close to the person's place of residence. The given municipality has an important role in making such counselling accessible. As of 2021, for the first time, municipalities and primary healthcare centres are able to get financial support from the state to provide psychological care and mental health support services in the community.

Many of the activities promoting and supporting mental health in communities in Estonia have so far been organised by NGOs. But Estonian NGOs' efforts to promote mental health often lack coordination, not all interventions are equally evidence-based, and the impact assessments are inconsistent. Furthermore, the NGOs' funding is predominantly project-based, making it harder to prolong even the activities that have proven effective. NGOs in the field are brought together by the Estonian Mental Health and Well-being Coalition (VATEK), which deals with both advocacy and policy development in the field and manages the platform enesetunne.ee, which offers opportunities for support. There are other great examples of NGOs in the field of mental health; membership in VATEK serves as a guarantee of their reliability and ethics.

Online preventive interventions, along with mental health apps, are gaining popularity worldwide, but there is still little data on their effectiveness Various local and nationwide support groups (including virtual groups) exist in Estonia (e.g. there is a support group for parents of children with ADHD and one for the relatives of people with dementia). However, they are not widely known, and funding and the number of seats are limited.

**Mental health support services and activities at the municipality and community level have great potential but are underutilised in Estonia.**

**Mental health apps and other applications are gaining popularity, but more evidence is needed to confirm their effectiveness.**

### Treatment and continuing care as mental health interventions help people to cope with and recover from problems.

In the event of a health concern or illness, people usually contact their general practitioner and their support team first. In addition to the mandatory specialists (family nurse, midwife, physiotherapist), the general practitioner's support team could also include mental health specialists (mental health nurse, counselling psychologist). If the general practitioner's team has no mental health specialists, outside experts (clinical psychologists, psychiatrists) can be involved. Minors can be referred to child and youth mental health centres. General practitioners and their support teams could be the first in the healthcare system to identify mental health problems and risks. They could diagnose and coordinate the treatment of mental disorders and monitor the condition and treatment of patients with chronic diseases to ensure recovery and prevent relapses (Ministry of Social Affairs 2020a).

Primary healthcare centres are currently only recommended to provide mental health services. The willingness of general practitioners and their sup-

**Within the healthcare system, general practitioners and their care teams could be the first to identify mental health problems and risks and to intervene, but primary health-care centres are currently not required to provide mental health services.**

port teams to treat mental health problems varies greatly from region to region, depending, among other things, on the knowledge and skills of the staff, the availability of tools for assessment and the effectiveness of the cooperating network. The main problems are insufficient preparation and cooperation with mental health specialists. People often cannot get help for their mental health problems from their general practitioner even if they are referred to mental health specialists because there are not enough specialists and waiting times are long.

## Negative attitudes and stigma discourage people from seeking help

Many people with mental health problems do not seek specialist care, although getting help at an early stage improves one's quality of life and saves money. People's negative attitudes are one of the more significant obstacles to recognising problems and finding solutions. Mental health problems are often stigmatised (Rüsch et al. 2005). Society, for example, holds assumptions about people with mental health problems and seeking help. Individuals might therefore avoid contact with people with mental health problems. In the case of self-stigma, people with a mental health problem might consider their situation shameful and avoid treatment for fear of discrimination and labelling. Therefore, they only seek help as a last resort, after their situation, daily coping and quality of life have significantly deteriorated.

The Eurobarometer survey conducted in 2006 reveals that Estonians are at the forefront of stigmatising attitudes in the EU. Three-quarters of Estonian residents over the age of 15 considered people with psychological or emotional health problems to be unpredictable (EU average 63%), and 60% considered them a threat to other people (EU average 37%). Nearly a quarter believed that people with mental health problems were themselves to blame for their condition (EU average 14%) and that they would never recover (EU average 21%). Compared to the EU average, Estonian residents less often seek support from a health specialist when feeling bad (40% v. EU average 50%).

However, a study published a decade later (Ministry of Social Affairs 2016) indicates that attitudes have changed somewhat. A significantly smaller proportion of those surveyed believed that people with mental health problems are dangerous (21% of respondents) or that recovering from a mental health problem is not possible (10%). Most respondents in 2016 also agreed that anybody can experience mental health problems (89%) and that mental disorder is a disease like any other (81%). Despite some positive developments, it seems that extensive self-stigma still exists, due to people's fear

**Because of stigma, people only seek help as a last resort, after their situation, daily coping and quality of life have significantly deteriorated.**

of being judged and not wanting others to know about mental health problems (62%). Thus, continued efforts are required to normalise and destigmatise mental health problems in order to encourage people to seek care and improve access to care. At the same time, many people in Estonia also tend to seek support from alternative social media groups (see Tiidenberg et al. in Chapter 4).

## Access to needs-based mental health interventions

The health-supporting choices programme in the Public Health Development Plan 2020–2030 (Ministry of Social Affairs 2020b) outlines the following priorities in mental health interventions:

- development and implementation of evidence-based and consistent mental health policy (including services and networks);
- ensuring sufficient staff for providing mental health support services;
- integration of services and cross-sectoral cooperation, so that services are accessible and of high quality, based on the needs of the person and consistently supportive of people with mental health problems and their relatives;
- promotion of mental health, including making available evidence-based information, improving health literacy and creating a supportive psychosocial environment.

The main problems of the Estonian health system are the health disparities between socioeconomic groups, poor population coverage, workforce shortages in the health field, and the insufficient management of noncommunicable diseases (Habicht et al. 2018). According to the 2020–2022 data of the Estonian National Mental Health Study, people with no or very low income visit mental health specialists significantly less often than people with higher income, although they do not have fewer subjective complaints. This indicates that access to services in this population group is limited (Consortium of the Estonian National Mental Health Study 2022).

The World Health Organization's (WHO) Mental Health Atlas 2005 pointed out that the burden of mental health problems on healthcare systems has increased, while funding treatment has not increased proportionally and tends to go towards specialist medical care in large hospitals. Although progress has been made in several key areas over the past 20 years, the availability of mental health resources continues to be unequal between countries with different standards of living and within countries. The WHO Mental Health Atlas 2020 indicates that limited access to mental health resources at the primary healthcare level is particularly conspicuous.

Everyone has the right to access the services they need in a timely manner. However, Estonia has an extensive shortage of mental health specialists (Ministry of Social Affairs 2020a). In 2019, there were 30–50% fewer school psychologists, and 50% fewer clinical psychologists and mental health nurses, than optimal. With the need to step up the capacity to help with mental health concerns at the primary healthcare level, the shortage of professional psychologists (counselling psychologists, clinical psychologists) and mental health nurses will increase by about 10% in the near future.

Access to non-hospital (outpatient) psychiatric care is central to care planning. The labour shortage in psychiatry, and especially in child psychiatry, has been constantly increasing. Based on OECD data, Estonia should have a ratio of 14 to 24 psychiatrists per 100,000 inhabitants (OECD 2021). According to the National Institute for Health Develop-

**Estonia has a severe shortage of mental health specialists. The shortage of professional psychologists (counselling psychologists, clinical psychologists) and mental health nurses will increase by about 10% in the near future.**

ment, 228 psychiatrists were working in Estonia in 2019, including 20 child and adolescent psychiatrists, accounting for 16 psychiatrists per 100,000 inhabitants. However, the Estonian Psychiatric Association's development plan for the field of psychiatry places the recommended level at 260 psychiatrists, or 30 to 40 more than there currently are. Many psychiatrists are of or will soon reach retirement age.

Although the number of psychiatrists in Estonia is just above the lower limit proposed by the OECD, it does not cover the current demand and is far below the level of the Nordic countries and other countries with a high level of welfare (e.g. Finland, Sweden and Germany 20 or more psychiatrists per 100,000 inhabitants). Suboptimal use of specialist care (e.g. for activities that could be carried out in primary care) leads to overtime work and persistently long waiting times. The actual availability of psychiatrists per 100,000 inhabitants is, therefore, smaller than the above ratio suggests.

More resources alone will not necessarily lead to the desired changes, including reduced waiting times, higher quality of treatment or better outcomes. Currently, Estonian general practitioners can use the funding mechanism created for this purpose – the Therapy Fund – to refer people to specialists, such as clinical psychologists. However, this resource is underutilised. For example, in 2020, general practitioners used only 38% of

**Working-age people with depression on the accessibility of services:**

'I saw a psychiatrist eight to nine months after my initial visit to the general practitioner.'

'It was difficult to find help in the beginning. I ended up reaching a psychiatrist three to four years later.'

'The psychiatrist didn't have any available psychologists to recommend.'

'The general practice should have had a mental health nurse.'

'You should be able to see a psychologist thanks to the Therapy Fund. It's another dead end, because they are not accepting new patients – [they say to] try again in a while. I try and try, but I can't get help.'

'There are no support groups. The support network should be bigger. There is no one to support me.'

**SOURCE:** quoted from an analysis of the care pathway of depression patients, Randver 2021

**Suboptimal use of specialist care (e.g. for activities that could be carried out in primary care) leads to overtime work and persistently long waiting times.**

the funds on average. In 2021, that figure was 44% on average. Bureaucratic barriers in the organisation of the Therapy Fund, a lack of knowledge among general practitioners about various mental healthcare options, and a lack of care options make access to services problematic.

In order to have an efficient mental health services system in Estonia, the funding model of healthcare services has to be restructured (Vainre et al. 2021). One of the important factors to consider is the availability of specialists with appropriate training, competencies and qualifications, which require increased volumes of national training. However, increasing the number of specialists is only part of the overall solution. Mental health problems stand on a continuum – from temporary conditions to highly disturbing chronic diseases, from single problems to clusters of disorders. These conditions require interventions of varying intensity. People need to have access to the lowest-intensity support necessary and effective for their condition. In Estonia, the main problem seems to be how to provide a suitable service for people in need. There are few easily accessible and low-intensity community-based mental health support services and psychosocial interventions offered in Estonia, although their wider availability could shorten waiting times and improve the overall quality of mental health services. It would also help ensure better access to specialist psychiatric care for people who need intensive intervention.

**People need to have access to the lowest-intensity support necessary and effective for their condition.**

E-health solutions (electronic health records, telemedicine, digital solutions) are both a challenge and an opportunity for the Estonian healthcare system. They should be applied more effectively in the provision and integration of services and in clinical decision-making (Habicht et al. 2018). Both recipients and providers of the services must adapt to the new solutions, including remote services. As with any other mental health service, digital solutions have to be evidence-based, efficient, high-quality, cost-effective and accessible.

In recent years, the funding of healthcare system development projects has increased. It includes, among other things, people-centred care pathways and remote services. The conditions of the COVID-19 pandemic confirmed that both mental health service providers and users are able to use remote services in a crisis situation. The Estonian Health Insurance Fund facilitated this, financing remote appointments (since March 2020) and remote therapy (since November 2020). As a result of the changes made in the healthcare system during the COVID-19 crisis, the share of remote appointments with psychiatrists increased significantly (from 20% to 38%). The share of remote appointments and remote therapy sessions with mental health nurses and clinical psychologists increased as well (from 13% to 24%). People with a chronic mental health disorder should first contact mental health nurses in the healthcare system. Mental health nurses could benefit from remote appointments. When the patient consents, nurses could use digital solutions to collect and analyse health data and forward it to a specialist in a form agreed on in advance.

## Mental health problems are costly to society, but early intervention is cost-effective

Mental health disorders bear high costs for the healthcare system, and first-time cases are generally more expensive to treat than recurring ones. Promoting mental health and preventing mental-health-related problems is effective for the people affected, those close to them and society as a whole, but incentives to invest in these actions are still too limited (Le et al. 2021).

From the position of society, it is important to consider two types of costs:

- direct costs to the healthcare and social system, including medical expenses and social welfare expenses due to reduced work capacity;
- indirect costs associated with reduced tax revenue, as reduced work capacity and coping may decrease or even eliminate income.

Depression, which is one of the most common mental health disorders, is a good example of costs related to the treatment of mental health disorders (see Akkermann et al. in this chapter). The analysis of the care pathway of depression (Randver 2021) revealed that the direct cost to the Estonian Health Insurance Fund of treating a two-month episode of depression is approximately 300 euros for the first case of depression and approximately 200 euros in the case of recurring depression. First cases undergo more diagnostic procedures (analyses, examinations) than recurring cases, where less time is required for assessment, choosing an intervention and initiating it. The cost of longer treatments has increased. The annual treatment cost of a first episode of depression is approximately 800 euros, and for recurring depressive disorder, it is approximately 500 euros. Thus, preventing new clinical cases from occurring is the most cost-effective.

Between 2013 and 2020, the annual cost of treatment for first-episode depression (primary diagnosis) in Estonia increased sharply, from 2 million to more than 6 million euros. For recurring depressive disorder, the figure increased from 2 million to 5 million euros. The cost of incapacity for work benefits has also increased: in the case of first-episode depression, it was less than 1 million euros in 2014 but over 2 million in 2020. The costs related to prescription medicines for both the patient and the Estonian Health Insurance Fund remained relatively stable between 2005 and 2020.

A 2021 study on the prevalence and economic impact of treatment-resistant and suicidal depression (Anspal and Sõmer 2021) also shows that depression carries significant costs. The cost of suicides of patients with depression was calculated based on the statistical value of life, as recommended by the OECD, which is based on people's willingness to trade off income for risk reduction (OECD 2012). Transferring the value recommended by the OECD to Estonian price levels in 2020, the calculated average cost of a suicide case was 4.6 million euros. This includes the economic cost for the state and the individual, as well as the loss of well-being in general.

**Promoting mental health and preventing mental-health-related problems is effective for the people affected, their relatives and society as a whole, but incentives to invest in these actions are still too limited.**

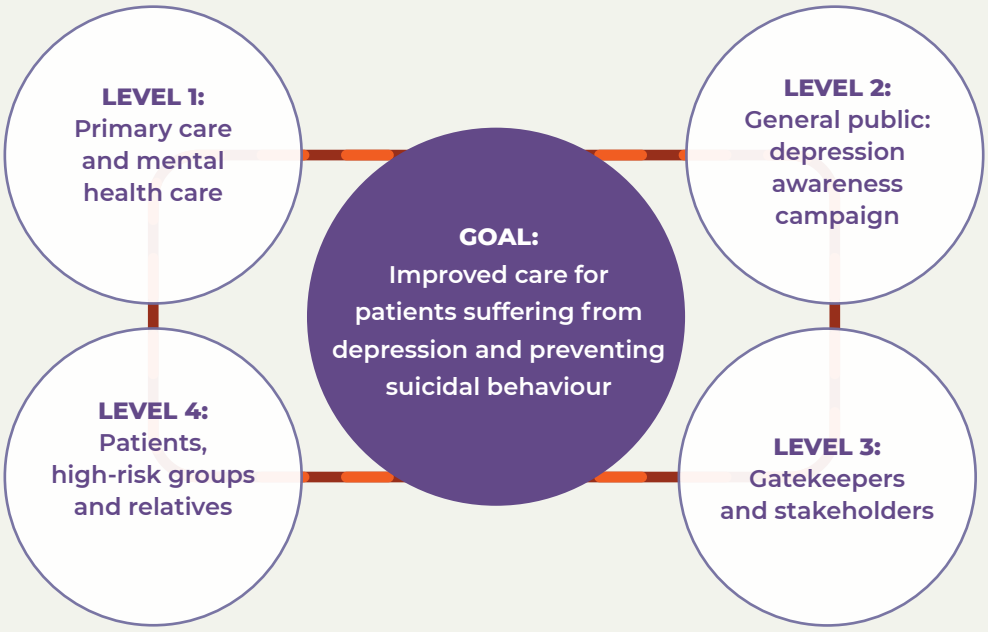
## A network to fight depression: a four-level community-based intervention approach

EAAD (European Alliance Against Depression) is an intervention model aimed at preventing suicidal behaviour in the community through early recognition and optimal treatment of depression. Optimal treatment is a mix of pharmacotherapy and psychotherapy, which can be integrated with the guided online self-management programme iFightDepression® (www.ifightdepression.com/en). What makes EAAD unique is the synergy of simultaneous interventions at four levels:

1. **Primary-care practitioners** (e.g. general practitioners and family nurses), who receive training to recognise and treat mild and moderate depression.
2. **The general public**, educated with depression awareness campaigns, with the media helping to reduce stigmatisation and promote seeking help.
3. **'Gatekeepers'** (e.g. social workers, teachers, police), who can recognise depression early and refer people to care.
4. **Patients, their relatives and high-risk groups** (e.g. people who have attempted suicide or lost a relative due to suicide), whose recovery can be helped with support groups and information materials.

EAAD is one of the more promising multi-level intervention models. References to the evidence base are available on the project's website. In Estonia, a network for coping with depression based in Pärnu (www.depressionogatoimetulek.ee) has implemented the EAAD model since 2021.

**SOURCE:** www.eaad.net, Sisask et al. 2021



## SUMMARY

Preventing mental health problems is more cost-effective than treating them, and treating the problems is more cost-effective than leaving them untreated. Each euro invested in prevention can save between 5 and 50 euros in the future, depending on the intervention (WSIPP 2019). Despite this, access to preventive interventions is limited in Estonia; the interventions are not implemented systematically, and their impact is mostly not assessed.

In addition to limited access to preventive interventions, the care pathways of people with mental health problems are fragmented, complex and under-resourced. Interventions provided by the support systems should be better balanced with people's specific needs while ensuring that the interventions are accessible, targeted and of high quality.

Reducing stigmatisation and increasing early recognition and prevention requires improving people's social-emotional and self-care skills, extensively implementing effective interventions, creating safer and more supportive environments to enhance social cohesion, simplifying care pathways, and upgrading the accessibility and consistency of care options. Good cooperation between care sectors and speeding up development through the wider adoption of digital solutions are also important.

**Preventing mental health problems is more cost-effective than treating them, and treating the problems is more cost-effective than leaving them untreated. Each euro invested in prevention can save between 5 and 50 euros in the future, depending on the intervention.**

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# 2 Relationship between lifestyle and mental health over the life course


**PHOTO:** Annela Samuel

# 2.0 INTRODUCTION

# 2.0 Introduction

## Relationship between lifestyle and mental health over the life course

**KERSTI PÄRNA AND RAINER REILE**

### KEY MESSAGES

1. **A health-supporting lifestyle is associated with better mental health and well-being throughout the life course.**
2. **Both lifestyle and mental health indicators reveal systematic demographic and socioeconomic inequalities. Vulnerable population groups are more frequently exposed to health-damaging lifestyles and mental health problems.**
3. **The approach to improving mental health and well-being must be holistic, taking into account social context and environmental factors as well as individual lifestyle.**

### INTRODUCTION

The life course covers all the stages of a person's life from birth to death, and although the trajectory of each life as a whole is ultimately different, the challenges presented by the different stages of the life course are similar for everyone. The different stages of life are also sequentially connected: the starting point for adulthood depends to a great extent on childhood and adolescence while the outcomes in old age can be seen as a result of the person's experiences during adulthood. The cumulative effects of the life course also apply to health, which in the broadest sense may be defined as physical and mental equilibrium and integrity.

This chapter combines the life course perspective and the social health determinants approach. The four articles in this chapter provide an overview of the associations between lifestyle and mental health in Estonia and their changing patterns. The following brief introduction covers some possible explanations for the associations between lifestyle and mental health, describes the methods and databases used in the articles, and summarises the main findings.

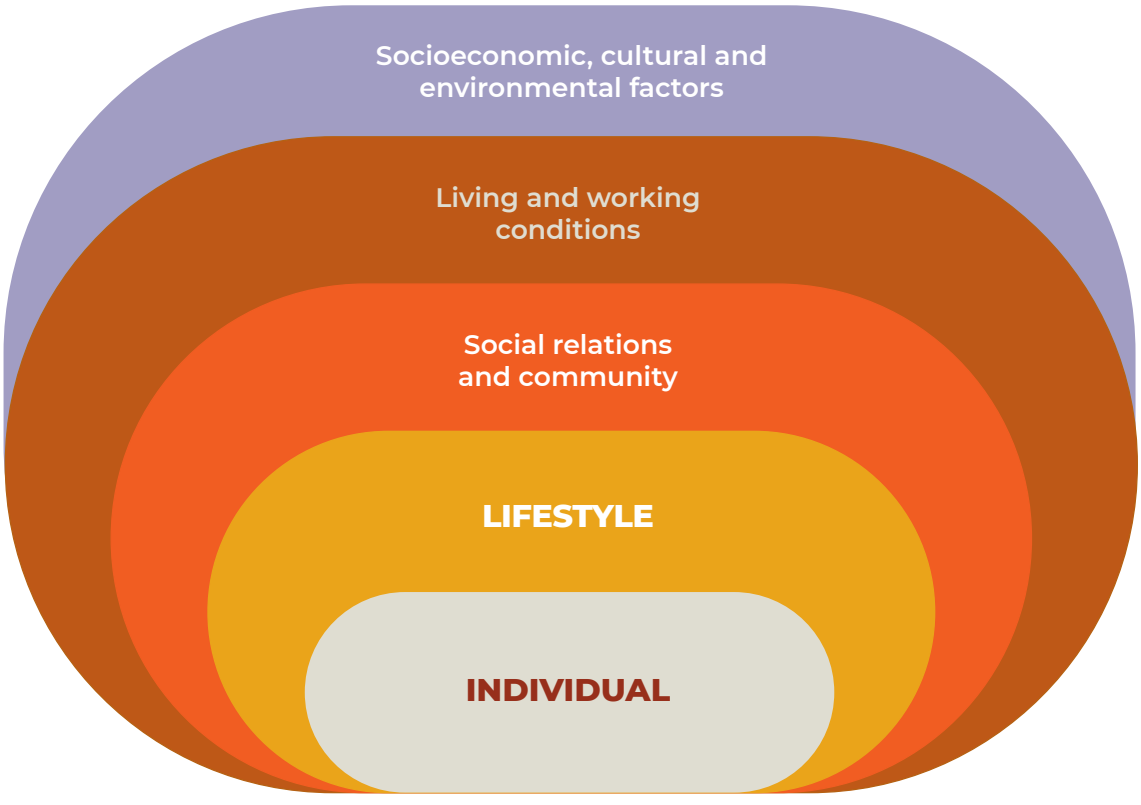
## Life course and health determinants

Looking at health and its determinants from the life course perspective allows us to understand health trajectories and describe the development of certain behavioural patterns and health risks. Although the scientific literature on health effects across the life course is rich and varied, three major approaches can be distinguished. The first is the critical period hypothesis, which focuses on early life (and prenatal) factors. During this period, the child is particularly vulnerable, and factors and risks that inhibit development can have a lasting effect on health. The second approach is the cumulative exposure[1] hypothesis, which rests on the idea that most chronic health conditions develop over a long period of time and that the majority of health outcomes are not the result of early exposure but rather the combined impact of factors accumulated throughout life. These two approaches are combined in a third one, the social trajectory hypothesis, which stipulates a chain of connections between childhood exposure and adult exposure, with only the

**Looking at health and its determinants from the life course perspective allows us to understand health trajectories and describe the development of certain behavioural patterns and health risks.**

1 Exposure – contact with a pathogen or risk factor.

**Figure 2.0.1.** Main health determinants




**SOURCE:** Dahlgren and Whitehead 2021, adapted by author

**Individuals have the most control over the health effects of their lifestyle.**

latter directly affecting morbidity risk. This last model offers hope that interventions in adulthood can mitigate health damage incurred in childhood and that the adjustment of behavioural factors can change the risk of future illness.

In broad terms, health determinants are distributed between the areas of lifestyle, environment, genetics and the healthcare system (Lalonde 1981); individuals have the most control over the health effects of their lifestyle. Depending on the decisions and choices a person makes, a lifestyle may or may not be health-supporting (Tulchinsky 2018). The lifestyle-shaping decisions people make in turn exist in a wider framework of psychosocial, community-specific, socioeconomic and social context-related factors. These have been described by Göran Dahlgren and Margaret Whitehead in their illuminating 1991 model of the main health determinants (Dahlgren and Whitehead 2021) (Figure 2.0.1).

## Perspectives on the relationship between lifestyle and mental health

The primary starting point for understanding the relationship between lifestyle and mental health is emotions. Usually understood as affective mental states, emotions are complex processes that involve changes in human physiology, subjective experience and its behavioural expression. What interests us here is the role of emotions in making choices that directly affect health. Behavioural decisions are often shaped by emotionally charged situations (Ferrer and Mendes 2017); examples include speeding, alcohol abuse, unprotected sexual intercourse and other similar situations. This knowledge is also successfully utilised by the advertising industry, which often uses positive emotions and feelings to downplay the risks associated with health-damaging products. The relationship between emotions and health outcomes is also apparent in the context of morbidity. For example, negative emotions can increase susceptibility to illness (Everson-Rose and Lewis 2005), and the stress that comes with experiencing illness can influence the course of the illness through both health behaviour and treatment adherence.

**Stress has a role in shaping many behavioural responses. High stress levels are associated with diet and excess weight as well as an increase in risk behaviour.**

Scientific literature associates daily activities, life events, role overload or conflict with the experience of social stress (Gerhardt et al. 2021), which can manifest as anxiety, depression and other mental health problems (Kubzansky et al. 2015). In addition to causing physiological and neurobiological changes (Godoy et al. 2018), stress has a role in shaping various behavioural responses. Scientific research provides plenty of examples of how high stress levels are associated with diet and excess weight as well as an increase in risk behaviour (Ceccato et al. 2016; Scott et al. 2012).

**When there are scarcely any resources to avoid health risks or mitigate health losses, the question of choice becomes the question of opportunities.**

Another related concept is health inequality, which refers to the existence of systemic differences in health outcomes favouring one group over another based on some feature indicating social background. Health inequality is a universal and unfortunately inevitable phenomenon whereby a lower social position usually correlates with poorer health outcomes. Knowledge, money, power, contacts and skills are all useful capital that can be utilised to avoid health risks or reduce harm. When these resources are scarce, the question of choice becomes the question of opportunities. Manifestations of health inequality can also be explained through behavioural rationale, as the norms and habits specific to different population groups directly shape different lifestyle practices and thereby lead to different health outcomes. On the other hand, the available evidence also unequivocally indicates that the accumulation of factors related to an unfavourable social status increases the risk of health-damaging behavioural patterns and reduces the likelihood of behavioural change. Similar socioeconomic patterns emerge in mental health: lower social status increases the likelihood of experiencing more negative life events (e.g. job loss), having more chronic social stressors (e.g. uncertainty about maintaining a job) and experiencing discrimination. It is important to consider that from a life course perspective, these risks are not discrete but cumulative. Therefore, seemingly personal emotions and lifestyle choices may stem from external factors largely determined by the surrounding environment.

The model of the main health determinants (Dahlgren and Whitehead 2021) outlined above combines different perspectives on the biological, psychological and social factors of (mental) health and is key to understanding the relationship between lifestyle and mental health in different stages of the life course.

**From a life course perspective, health risks are not discrete but cumulative.**

**Seemingly personal emotions and lifestyle choices may stem from external factors largely determined by the surrounding environment.**

## Lifestyle and mental health indicators over the life course

This chapter explores the relationship between lifestyle and mental health and well-being in four articles focused on the different stages of the life course. The aspects of lifestyle considered are health behaviour, or health-supporting behaviour (diet, physical activity, sufficient sleep), and risk behaviour, or health-damaging behaviour (smoking, alcohol and drug abuse, excessive screen time). The line between health and risk behaviour can sometimes become fuzzy and depends on the specific context; for example, a poor diet or modest physical activity can also be considered risk behaviour. Due to the availability and different attributes of the underlying data, approaches to indicators of health behaviour and risk behaviour in the articles also vary (Table 2.0.1).

The articles focus on the various aspects of mental health, such as the subjective well-being index, emotional well-being, sadness and depressive symptoms, depressiveness, self-reported stress, fatigue and suicidality. Depending on their respective datasets, the articles describe how trends in the relationship between lifestyle and mental health and well-being have changed over the years,

**Table 2.0.1.** Health and risk behaviour indicators used in the articles of this chapter (children, adolescents, adults and older people)

| | **CHILDREN**<br>**2 to 10 years**<br>(Kukk and Nurk) | **ADOLESCENTS**<br>**11 to 15 years**<br>(Vorobjov et al.) | **ADULTS**<br>**16 to 64 years**<br>(Reile) | **OLDER PEOPLE**<br>**65 years and older**<br>(Abuladze and Sakkeus) |
|---|---|---|---|---|
| **HEALTH BEHAVIOUR** | | | | |
| Diet | Fruits and vegetables (servings per day) | Breakfast (daily; less often) | Irregular diet (yes; no) | Legumes, eggs (daily; less often) |
| | High-calorie, nutrient-poor foods (servings per day) | Vegetables (at least 5 times a week; less often) | Foods high in sugar (yes; no) | Fish, chicken, meat products (daily; less often) |
| | Diet quality index | Fruits (at least 5 times a week; less often) | Body mass index (normal weight; overweight; obese) | Vegetables and fruits (daily; less often) |
| Physical activity | Physical movement time (hours per day) | Physical movement (at least 5 times a week; less often) | Recreational sports (at least once a week; less often) | Intense physical activity (yes; no) |
| | | Body image (positive; negative) | | Moderate physical activity (yes; no) |
| Sleep | Sleep time (hours per day) | Sleep time (sufficient; less than recommended) | – | Sleep disorders (yes; no) |
| **RISK BEHAVIOUR** | | | | |
| Smoking | – | Smoking (rarely or never; at least once a week) | Smoking (daily; occasionally or never) | Smoking (never; current smoker; former smoker) |
| Alcohol consumption | – | Intoxication (once or never; at least twice a week) | Alcohol consumption (2 or more times a week; less than 2 times a week) | Alcohol consumption (1–3 times a month; 1–2 times a week; 3–7 times a week) |
| Drug use | – | Cannabis use (has not used; has used) | Drugs in the last 12 months (yes; no) | – |
| Excessive screen time | Screen time (hours per day) | – | Screen time (more than 6 hours per day; 6 or fewer hours per day) | – |

**SOURCE:** table by the authors

**The aspects of lifestyle considered here are health behaviour, or health-supporting behaviour (diet, physical activity, sufficient sleep), and risk behaviour, or health-damaging behaviour (smoking, alcohol and drug abuse, excessive screen time).**

compare Estonian mental health indicators with those of other countries, and highlight mental health inequalities between different population groups. The relationship between mental health and lifestyle factors is modelled mainly by using logistic regression, the common method for analysing cross-sectional data. To simplify, an odds ratio (OR) represents the different odds of an outcome (e.g. mental health problem or level of well-being) occurring depending on the presence of different background variables (e.g. health-supporting behaviour, risk behaviour).

The empirical parts of the articles rely on data from population-based surveys conducted in Estonia between 1990 and 2022. The article on children's well-being and lifestyle uses data from the 2013–2015 Estonian National Dietary Survey on children aged between 2 and 10 years, which relies on statements by parents. The article on the relationship between young people's lifestyle and mental health draws on the datasets of the six waves of the Health Behaviour of School-aged Children (HBSC) study in Estonia, which took place from 2002 to 2022 and was targeted towards children aged 11, 13 and 15. The analysis of mental health and lifestyle factors in adults is based on the Health Behaviour among the Estonian Adult Population survey conducted between 1990 and 2020 on the population aged 16 to 64. For older people (65 years and older), the 2013 data of the SHARE survey is used.

## SUMMARY

A health-supporting lifestyle is associated with better mental health and well-being throughout the life course. The importance of lifestyle for mental health is most apparent among young people and adults. Parents rate the mental health of Estonian preschool- and primary-school-aged children as quite good, but children's subjective mental well-being decreases with age. However, it is worth remembering that well-being assessments made by parents are mostly biased in a more positive direction. Over the past decade, mental health problems have increased among young people and remained fairly stable among adults. In older people, mental health issues are significantly associated with pre-existing health problems and limitations. In addition, the comparisons drawn in the articles about young people and older people show that mental health indicators in Estonia are poorer than in several other European countries. In adults, socioeconomic inequalities are reflected in both lifestyle and mental health indicators, and the accumulation of factors related to an unfavourable socioeconomic status and health-damaging lifestyle increase mental health vulnerability. The lifestyle choices of children and young people, on the other hand, are largely shaped by their parents, in leading by example, setting rules and holding joint family activities.

Selecting source material for the articles was demanding, as it was difficult to find directly comparable datasets

that would cover the entire course of life. As a compromise, lifestyle and mental health were studied using data from different years and addressing different questions. In many cases, these forced choices made it difficult to interpret the relationship between lifestyle and mental health from a life-course perspective. On the other hand, the solution presented in this chapter offers a unique view of the recurrence of lifestyle and mental health patterns in different stages of life. Various organisations have given recommendations on lifestyle (e.g. how many hours to be active every day, how much and what to eat), some of which are also used in the articles of this chapter as criteria for defining healthy or unhealthy behaviour. However, it is important to recognise that these recommendations, though based on the best available knowledge, are still tentative and may change over time.

The insights provided in the articles looking at the relationship between lifestyle and mental health in different stages of the life course allow us to conclude that efforts to improve mental health and well-being should focus on the social context and environmental factors as well as individual lifestyle. It is also necessary to define health as a resource, so that political decisions and interventions shaping healthcare would recognise that this resource is not distributed equally among everyone. The ageing of the population and the continuous improvement of diagnostic capabilities and treatment options present an additional challenge to healthcare policy, because although people are living longer, they are spending a considerable part of their life course suffering from health conditions. The first thing that each person can do for their mental health is to pay attention to their lifestyle choices and keep them balanced and sensible.

**The first thing that each person can do for their mental health is to pay conscious attention to their lifestyle choices and keep them balanced and sensible.**

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# 2.1 Lifestyle and mental health in preschool- and primary-school-aged children

MAARJA KUKK AND EHA NURK

## KEY MESSAGE

**While parents rate the mental health of Estonian preschool- and primary-school-aged children as quite good, children's subjective mental well-being decreases with age. Socioeconomic factors have little effect on children's mental well-being, but this indicates low levels of inequality more than anything else. Children's mental well-being is related primarily to greater physical activity.**

## INTRODUCTION

While mental health disorders are much less common in preschool- and primary-school-aged children than in adolescents or adults, many problems that arise in later years are rooted in the earlier stages of life (Jones 2013). Like physical health, mental health is influenced by genetic factors, but the physical and psychosocial environment surrounding the child also plays an important role, along with the related lifestyle, including eating and physical activity habits and sleep patterns. One of the factors that might affect mental health the most is adverse childhood experiences, such as abuse and violence, parental divorce or the death of a family member, and other stressful life events (Shonkoff and Garner 2012). Strong, repeated or prolonged stress has a negative impact on the child's neurological development. This can cause problems with learning ability, memory and behaviour or lead to mental health disorders (Shonkoff and Garner 2012). The importance of lifestyle for mental health is difficult to assess because the associations between lifestyle and mental health are reciprocal, and both also depend on other factors, such as socioeconomic status. Since lifestyle is something people can change and unhealthy habits affect many people, lifestyle deserves continued attention in promoting mental health. This is especially the case with children because the lifestyle adopted at a young age is often followed into adulthood, so positive or negative habits taken up early in life can have a lifelong effect on mental health.

**While mental health disorders are much less common in preschool- and primary-school-aged children than in adolescents or adults, many problems that arise in later years are rooted in the earlier stages of life.**

This article outlines the mental well-being of Estonian children aged 2 to 10 years and describes its associations with socioeconomic character-

istics and health-related behaviour to highlight potential factors contributing to inequality. Research on the mental health and well-being of preschool- and primary-school-aged children is scarce, especially on the youngest children, compared to other age groups. This is due to the fact that conducting such research is expensive and methodologically complex. Young children often lack the capacity to clearly communicate their mental state, and because of this, researchers often have to rely on assessments from bystanders, such as parents or teachers. However, their assessments may not always be accurate or reflect the child's subjective experience. In Estonia, as elsewhere, there are currently few large-scale studies available that provide an overview of the mental well-being of preschool- and primary-school-age children and compare it with lifestyle.

This article is primarily based on the data collected in the course of the 2013–2015 Estonian National Dietary Survey. The strength of this survey is that it can provide detailed and versatile data on the subject of children's lifestyle that is representative of the population. As a cross-sectional study, it does not allow for the identification of causal associations, but the results nevertheless help pinpoint potential issues. Thanks to its representative sample, the study also offers a more comprehensive overview of the mental health situation of Estonian children than, for example, the insight

**The lifestyle adopted at a young age is often followed into adulthood. Therefore, positive or negative habits taken up early in life can have a lifelong effect on mental health.**

### THE WHO-5 WELL-BEING INDEX MEASURES THE LEVEL OF SUBJECTIVE WELL-BEING

The five-item World Health Organization well-being index (WHO-5) assesses the respondent's psychological well-being during the previous two weeks (Topp et al. 2015). The WHO-5 questionnaire[1] consists of five statements (how often the respondent has felt cheerful and in good spirits; calm and relaxed; active and vigorous; fresh and rested; engaged in things that interested them). Respondents rate these on a scale from 0 (at no time) to 5 (all the time). To calculate the index, the responses are summed and multiplied by four in order to express well-being on a simplified scale from 0 (absence of well-being) to 100 (the greatest possible well-being). Using data from the Estonian National Dietary Survey, the analysis section of this article compares children with lower well-being with children with higher well-being. Since the WHO-5 index does not specify a universally recognised meaningful cutoff point in the age group of children between 2 and 10 years of age, the authors of the article have designated one-fifth of the children who scored at the lower end of the scale as the group with lower well-being. More specifically, children with a WHO-5 score value of < 72 were selected as the group with lower well-being.

[1] See also https://ifightdepression.com/en/ressources?file=files/cms/pdf/WHO5_English.pdf

gained form vulnerable groups. The methodology report describes how the study was conducted (Nurk et al. 2017). Data was collected on nearly 1,000 children aged 2 to 10 years by interviewing their parents or guardians. About 30% of the children were aged between 7 and 10 years, and more than 90% of these children went to school (Table 2.1.1). By contrast, there were hardly any schoolchildren between the ages of 2 to 6. The sample included a more or less equal number of boys and girls, and 85% of the children were from families with an Estonian background. The WHO-5 Well-Being Index developed by the World Health Organization (WHO) was used in the study to assess children's mental health.

**Table 2.1.1.** Mental well-being of Estonian children aged 2 to 10 years according to socioeconomic characteristics

| Characteristic | Category | Number of participants | Mean value and standard deviation on the WHO-5 index | Share of children with lower[a] well-being, % |
|---|---|---|---|---|
| Age | 2–6 years | 677 | 80.8 (10.5) | 15.2 |
| | 7–10 years | 287 | 78.9 (11.7) | 21.6 |
| Sex | Boy | 461 | 80.0 (10.9) | 17.4 |
| | Girl | 503 | 80.4 (10.9) | 16.9 |
| Ethnicity | Estonian | 831 | 80.2 (11.1) | 17.7 |
| | Other | 133 | 80.6 (9.9) | 13.5 |
| Region[b] | Central Estonia | 195 | 85.2 (11.4) | 10.3 |
| | Northern Estonia | 352 | 79.3 (10.3) | 17.9 |
| | Western Estonia | 155 | 76.0 (9.7) | 23.2 |
| | Northeastern Estonia | 80 | 79.6 (9.3) | 12.5 |
| | Southern Estonia | 182 | 80.4 (11.2) | 19.8 |
| Settlement type[c] | Urban settlement | 551 | 79.3 (10.5) | 18.3 |
| | Rural settlement | 413 | 81.5 (11.4) | 15.5 |
| Net household income per month | Up to 1,000 euros | 279 | 79.8 (11.2) | 17.9 |
| | 1,001–2,000 euros | 475 | 80.7 (11.0) | 16.4 |
| | Over 2,000 euros | 175 | 79.5 (10.5) | 18.3 |
| Parent's educational level[d] | Lower or higher secondary education | 438 | 80.8 (11.6) | 17.8 |
| | Higher education | 524 | 79.7 (10.3) | 16.4 |
| Family model | Lives with two parents | 862 | 80.3 (10.8) | 16.5 |
| | Other | 100 | 79.1 (11.8) | 23.0 |

**SOURCE:** table by the authors, based on data from the 2013–2015 Estonian National Dietary Survey

**NOTES:**

a Children with a WHO-5 index score of < 72 make up the group with lower well-being.

b Northern Estonia: Harjumaa; western Estonia: Hiiumaa, Läänemaa, Pärnumaa and Saaremaa; central Estonia: Järvamaa, Lääne-Virumaa and Raplamaa; northeastern Estonia: Ida-Virumaa; and southern Estonia: Jõgevamaa, Põlvamaa, Tartumaa, Valgamaa, Viljandimaa and Võrumaa.

c Urban settlements are cities, towns and cities without municipal status; rural settlements are small towns and villages.

d Parent's level of education represents the education of the parent (or guardian) with the highest level of education living with the child.

## While the mental health of Estonian children can be described as good, well-being decreases with age

Based on the Estonian National Dietary Survey, the WHO-5 index in children aged between 2 and 10 years varied between 44–100; the average score was 80. The average score was 81 for 2-to-6-year-olds and 79 for 6-to-10-year-olds (Table 2.1.1). While the WHO-5 index has not previously been used to assess children between the ages of 2 and 8, the measurement scale has been validated for screening depression in children aged between 9 and 12, with a total score value of 40 deemed an appropriate cutoff (Allgaier et al. 2012). None of the children in the dietary survey scored this low. In the European Quality of Life Survey, the average score of the adult population of nearly 30 countries varied between 54 and 70 (Topp et al. 2015). Although the comparison with adults is not appropriate, it does suggest that according to the parents, the well-being of the children included in the study was quite high. It is worth bearing in mind that parents are not necessarily objective assessors – they know only what their child is like at home and not what they are like in kindergarten or school. Parents also tend to interpret their child's mental state in a more positive light. Since young children are unable to communicate problems associated with their mental well-being, there is still no good alternative to indirect assessment. Here, involving different types of assessors – for example, teachers as well as parents – might help put together a more complete picture (Streimann et al. 2021).

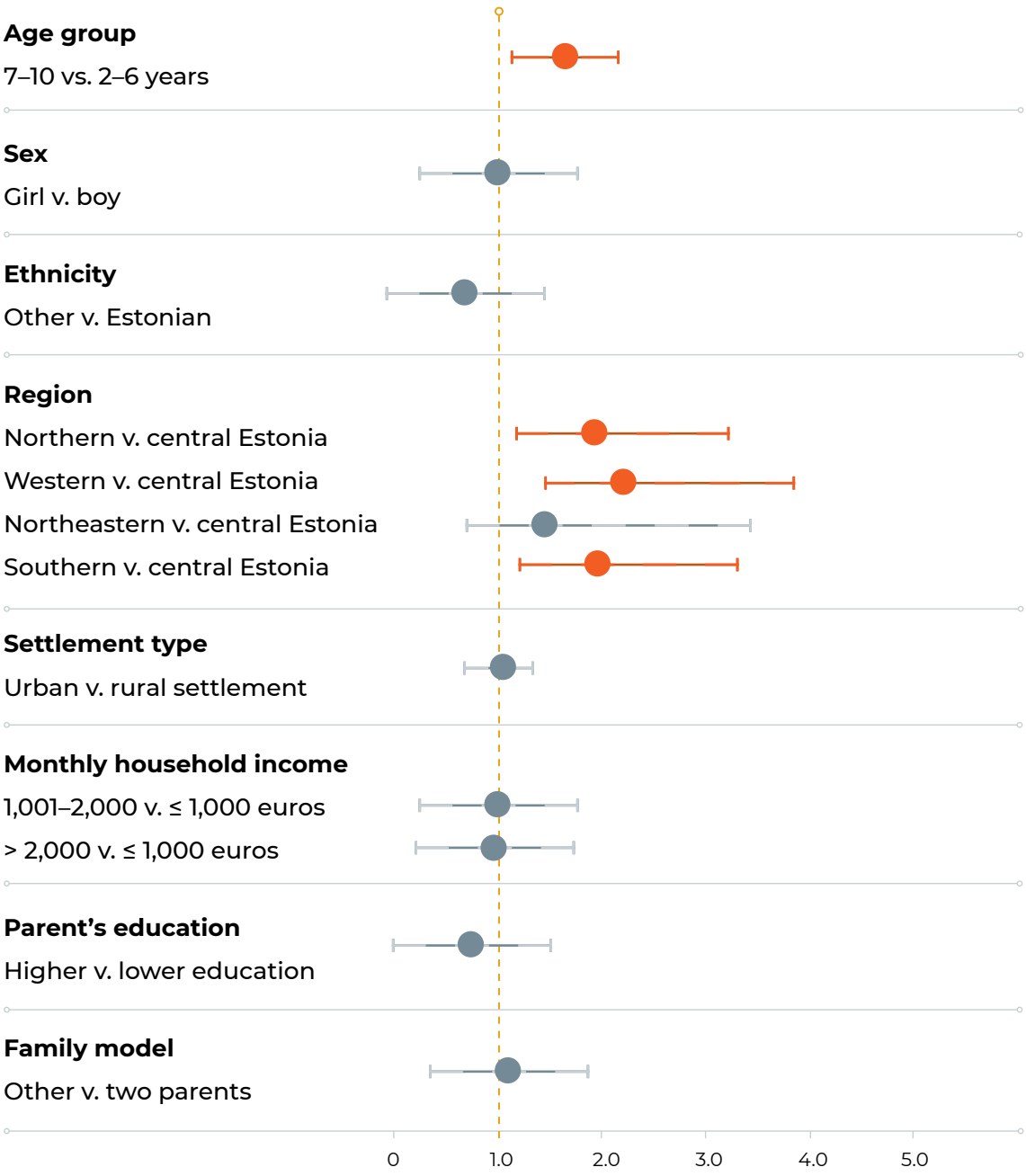
**According to the parents, the well-being of the children included in the study was quite high.**

**Based on the subjective experience of the children themselves, the mental well-being of children up to 10 years of age was rated as rather high. However, the share of low-spirited children was significantly higher among 12-year-olds.**

Data from the Estonian National Dietary Survey can be compared with the results of the 2018 Children's Worlds survey of children's subjective well-being (Soo and Kutsar 2020). In all, 3,150 children aged 8, 10 and 12 years were interviewed for this study in Estonia. During the two weeks preceding the survey, 47% of 10-year-olds and 41% of 12-year-olds felt overwhelmingly positive emotions, i.e. they rated their level of emotional well-being as high. Most of the remaining 10-year-olds were cheerful and energetic, only occasionally feeling tense (25%), or alternated between positive and negative emotions (28%). Only a handful of children felt predominantly negative emotions. The mental well-being of children up to 10 years of age can therefore be rated as rather high, based on the children's subjective experience. However, the share of low-spirited and apathetic children was significantly higher (15%) among 12-year-olds. The general satisfaction with life also decreased with age: three-quarters of the 8- and 10-year-olds gave the highest satisfaction rating, while only about half of the 12-year-olds were perfectly satisfied with their life.

Children's mental well-being likewise declined with age in the Estonian National Dietary Survey. In the survey, a model adjusted for all socioeconomic characteristics showed that, compared to children aged 2 to 6 years, children aged 7 to 10 years had 1.5 times the odds of having lower well-being (Figure 2.1.1).

**Figure 2.1.1.** Associations between the mental well-being and socioeconomic characteristics of Estonian children aged 2 to 10 years, odds ratio and 95% confidence interval




**SOURCE:** figure by the authors, based on data from the 2013–2015 Estonian National Dietary Survey

**NOTES:** The associations between the characteristics and mental well-being (lower v. higher) were tested using logistic regression analysis. Odds ratios were adjusted for all remaining socioeconomic factors. A higher odds ratio indicates greater odds of experiencing lower well-being (WHO-5 index value < 72).

See footnotes in Table 2.1.1 for descriptions of the characteristics.

The sharp increase in problems during adolescence may partly be due to the use of indirect assessors for young children. However, since the subjective assessments of both parents and children point to a similar conclusion, the deterioration of children's mental health as they get older still seems to be a real tendency and not just a product of methodology.

## Mental well-being tends to vary little with socio-economic characteristics

According to data from the Estonian National Dietary Survey, well-being varied little between boys and girls, or between Estonian children and those of other ethnicities. Furthermore, well-being was not associated with the settlement type, family income, parent's educational level or family model (Figure 2.1.1), which indicates a low level of socioeconomic inequality. However, mental well-being was significantly associated with the region of residence, with children from central Estonia standing out with the highest well-being (Table 2.1.1 and Figure 2.1.1). Compared to children from central Estonia, children from northern, southern and western Estonia had 2.2–2.6 times the odds of having lower well-being. Since central Estonia is distinguished by its lack of large cities, the living environment may contribute to the association.

The study of children's subjective well-being (Soo and Kutsar 2020) also examined how the children's well-being assessment related to their social environment and family model. Children who felt overwhelmingly positive emotions and were completely satisfied with life rated their well-being at home, at school and in interactions with friends higher than others did. In addition, the results showed that 10- and 12-year-old children who lived with both biological parents had experienced more positive emotions during the previous two weeks (44%) than children who lived with a stepparent or a single parent (35%). This result differs from that of the Estonian National Dietary Survey, which found no association between well-being and family model. A possible explanation is that, as the Estonian National Dietary Survey did not differentiate between biological and stepparents, mental well-being may be primarily influenced by the quality of family relationships rather than any other benefits of growing up with two parents, such as economic security.

**Children from central Estonia stood out with the highest well-being. The lack of large cities and the overall living environment may contribute to this association.**

## While the diet of Estonian pre-school- and primary-school-aged children features too few fruits and vegetables and too many sweets, mental well-being is not associated with diet

Based on the National Dietary Survey, the eating habits of Estonian children from 2 to 10 years of age leave much to be desired. In contrast to dietary recommendations, which call for at least five servings of fruits and vegetables per day, the children who participated in the survey consumed an average of only three servings per day, with only 14% of children aged 2 to 6 and 19% of children aged 7 to 10 eating recommended amounts (Table 2.1.2). Depending on the child's age and energy needs, they should have no more than

2 to 4 servings of sweets and snacks each day. Yet children aged 2 to 6 years consumed an average of eight servings and children aged 7 to 10 years an average of 12 servings of these foods per day. Twenty-two percent of the younger children and 15% of the older children met the dietary recommendation for high-calorie, nutrient-poor foods. The age difference was also expressed in the nutrition quality index, which was somewhat higher for the younger age group than it was for the 7-to-10-year-olds. The eating habits of older children probably deteriorate as they become more independent in determining their food choices.

The associations between nutrition and mental health can be studied in a number of ways, but the pattern emerging from various studies is that children with healthier eating habits usually also have better mental health indicators (Khalid et al. 2017). Like other organs, the brain also relies on nutrients

**While children with healthier eating habits usually also have better mental health indicators, the Estonian National Dietary Survey did not show any significant correlation between children's mental well-being and their diet.**

**Table 2.1.2.** Lifestyle of Estonian children of 2 to 6 and 7 to 10 years of age

| | 2-to-6-year-olds | | | | 7-to-10-year-olds | | | | 2-to-6 v. 7-to-10-year-olds[a] |
|---|---|---|---|---|---|---|---|---|---|
| Characteristic | N[b] | Mean value and standard deviation | Recommendation | Children who met the recommendation | N[b] | Mean value and standard deviation | Recommendation | Children who met the recommendation | P-value väärtus |
| Physically active time, hours per day | 614 | 3.4 (1.7) | ≥ 1 | 99.7% | 244 | 3.0 (1.7) | ≥ 1 | 98.8% | < 0.001 |
| Participants in organised physical activities, share | 677 | 42% | – | – | 287 | 70% | – | – | < 0.001 |
| Screen time, hours per day | 675 | 1.5 (0.8) | ≤ 1 / ≤ 2[d] | 53.5% | 287 | 2.3 (1.15) | ≤ 2 | 49.5% | < 0.001 |
| Sleep time, hours per day | 676 | 11.2 (1.1) | 10–14[e] | 92.8% | 287 | 9.3 (0.9) | 9–12[e] | 78.7% | < 0.001 |
| Fruits and vegetables, servings per day | 677 | 3.0 (1.9) | ≥ 5 | 14.2% | 287 | 3.3 (2.1) | ≥ 5 | 19.2% | 0.2 |
| High-calorie, nutrient-poor foods,[c] servings per day | 677 | 8.4 (5.8) | ≤ 2 | 22.5% | 287 | 11.7 (7.5) | ≤ 2–4[f] | 14.6% | < 0.001 |
| Diet quality index | 669 | 55.2 (13.0) | – | – | 283 | 53.0 (13.1) | – | – | 0.02 |

**SOURCE:** table by the authors, based on data from the 2013–2015 Estonian National Dietary Survey

**NOTES:**

a For organised physical activities, the difference between age groups was tested using logistic regression, while all other characteristics were tested using analysis of variance.

b Number of children included in the analysis.

c Sweets, sweet and savoury snacks, ice cream, sweet bakery and pastry products, etc.

d No more than one hour per day for children aged up to 5, no more than two hours per day for children aged 5 and up.

e According to age: 11–14 hours for 1-to-2-year-olds, 10–13 hours for 3-to-5-year-olds and 9–12 hours for 6-to-12-year-olds.

f According to age, sex and energy requirements: ≤ 2 servings for 7-to-8-year-olds, ≤ 3 servings for 8-to-9-year-olds and ≤ 4 servings for 9-to-10-year-olds. One serving is approximately 40 kcal.

for its development and functions, so it is highly likely that diet directly impacts mental health through physiological mechanisms (Lang et al. 2015). In real life, however, physiological mechanisms are only one way in which mental health is associated with nutrition. Both diet and mental health, in turn, depend on socioeconomic factors, and mealtimes also affect mental well-being as time spent together as a family. In addition, the effects of diet and mental health are likely reciprocal – an unhealthy menu can also be a result of mental health issues, not necessarily the other way around. Therefore, the associations between nutrition and mental health may not always be obvious. The National Dietary Survey also failed to reveal any significant correlation between children's mental well-being and their diet (Figure 2.1.2).

## Physical activity has a positive association with mental well-being while passive screen time has a negative one

Along with nutrition, physical activity habits are an important factor affecting both physical and mental health in many ways throughout the life course. On the one hand, physical activity habits are characterised by any form of movement that consumes energy, whether related to training, entertainment, work or getting from one place to another. On the other hand, physical activity habits are characterised by sedentary lifestyle activities, including physically inactive screen time with a TV, computer or smart device. Similar to nutrition, physical activity is likely

### FOOD DIARIES HELP GAIN INSIGHT INTO THE HEALTHINESS OF EATING HABITS

The parents of the children participating in the Estonian National Dietary Survey recorded the quantity of all the foods and drinks consumed by the child during the two days of the survey. The resulting food diaries were used to calculate how many grams of fruits and vegetables and high-calorie, nutrient-poor foods (sweets, sweet and savoury snacks, ice cream, sweet bakery and pastry products, etc.) the child ate during the day. The gram amounts were then converted into numbers of servings based on specific caloric value assigned to food groups. Eating fruits and vegetables is typically associated with healthy eating habits, and consuming high-calorie, nutrient-poor foods indicates less favourable eating habits; however, the authors additionally calculated a diet quality index to describe the healthfulness of the overall diet. To calculate the index, it was assessed how well the respondent's diet accords with the Estonian dietary recommendations, taking into account food groups and the availability of nutrients. Food group and nutrient scores were then summed and expressed on a scale of 0 (complete lack of accordance) to 100 (complete accordance).

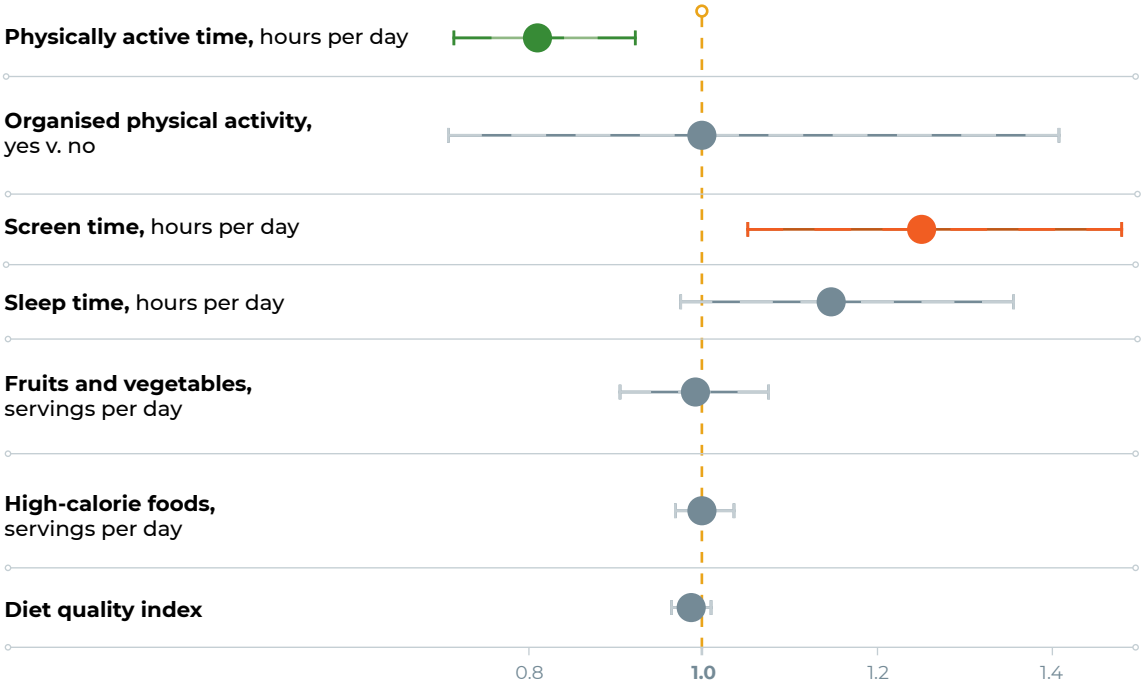
**Along with nutrition, physical activity habits are an important factor affecting both physical and mental health in many ways throughout the life course.**

associated with mental health through several factors, including both neurological and psychosocial mechanisms (Lubans et al. 2016). In children and adolescents, much like in adults, physical activity is associated with better mental health and passive screen time with poorer mental health, although the associations between physical activity habits and mental health are more evident in adolescents than in children, and there has been very little research on the topic, especially in preschool-aged children (Rodriguez-Ayllon et al. 2019).

On average, children aged 2 to 6 years who took part in the National Dietary Survey were physically active for more than three hours a day, while children aged 7 to 10 years were physically active for almost three hours a day (Table 2.1.2). In light of the WHO recommendation for children to spend at least one hour a day being physically active, almost all children included in the analyses got enough active time. Meanwhile, less than half of 2-to-6-year-olds and 70% of 7-to-10-year-olds participated in organised sports or other physical activities. Children's mental well-being was significantly associated with physically active time: for every hour added to daily physical activity, the odds for lower well-being decreased by 19% (Figure 2.1.2). Whether the active time included participation in organised activities made no difference.

In order to provide parents with instructions for guiding children's health

**Figure 2.1.2.** Associations between the mental well-being and lifestyle of Estonian children aged 2 to 10 years, odds ratio and 95% confidence interval




**SOURCE:** figure by the authors, based on data from the 2013–2015 Estonian National Dietary Survey

**NOTE:** The associations between each characteristic and mental well-being (lower v. higher) were tested using logistic regression analysis. The models are adjusted for the socioeconomic background of the child (age, sex, ethnicity, region of residence, type of settlement, family income, parent's level of education and family model). A higher odds ratio indicates greater odds of experiencing lower well-being (WHO-5 index value < 72).

behaviour, Estonian nutrition and physical activity recommendations suggest that the screen time of 2-to-4-year-olds should not exceed one hour a day, while that of 5-to-17-year-olds should be limited to two hours a day. Screen time remained within the recommended limits for about half of both 2-to-6-year-olds and 7-to-10-year-olds. The association between screen time and children's mental well-being was significant, with every hour added to daily screen time increasing the odds of lower well-being by 1.26 times (i.e. a 26% increase). The association between screen time and mental health is not necessarily due to a lack of physical activity alone. Exposure to inappropriate media content can also leave its mark, as well as the fact that excessive screen time tends to reduce both the duration and quality of children's sleep. The broader meaning of the usage patterns of digital devices from the perspective of mental well-being is discussed in Chapter 4 ('Digital technologies and mental well-being').

## Children up to 6 years of age generally get enough sleep, but the amount of sleep tends to decrease as children age, possibly increasing the role of sleep in mental health

Among the participants of the National Dietary Survey, children aged 2 to 6 years slept an average of 11 hours a day, while children aged 7 to 10 years slept an average of 9 hours a day. While no national health behaviour recommendations concerning the duration of children's sleep have been published in Estonia, according to the recommendations issued in several other countries, including, for example, recommendations in the United States, children aged 1 to 2 years should get 11–14 hours of sleep, children aged 3 to 5 years should get 10–13 hours of sleep and children aged 6 to 12 years should get 9–12 hours of sleep every day. In the National Dietary Survey, 93% of preschoolers and 78% of school-aged children got a daily amount of sleep in line with this recommendation, and no significant associations between sleep time and mental well-being were detected. The study of children's subjective well-being (Soo and Kutsar 2020) also looked into the duration of children's nighttime sleep. Twelve-year-olds who felt cheerful and satisfied slept longer than those who felt low and discontented. Most of them (72%) slept for at least eight hours between school days. Fifty-five percent of children who felt predominantly negative emotions slept for less than eight hours. Although the dietary survey did not find an association between sleep and mental health, the results did suggest that sleep deficit becomes a more significant factor after children reach school age. A likely explanation is that the younger the child is, the more control parents have over their behaviour. Different research conclusions about the importance of night-time sleep may partly be due to the use of different indicators for mental well-being. At any rate, the importance of sleep for mental health seems to become more definite as the child grows more independent.

**Twelve-year-olds who felt cheerful and satisfied slept longer than those who felt low and discontented. Most of them slept for at least eight hours between school days.**

## SUMMARY

Population-based data show that parents rate the mental well-being of Estonian children aged 2 to 10 years as relatively good. However, it is worth remembering that well-being assessments are mostly biased in a more positive direction. The association between mental health and lifestyle is not that pronounced at preschool and primary-school age, as mental well-being varies little across socioeconomic characteristics and lifestyle. An unbalanced diet is reflected as a negative aspect in children's lifestyle: children eat too few fruits and vegetables and too many sweets. While Estonian children between the ages of 2 and 10 years spend enough time being physically active and children between the ages of 2 and 6 years get enough sleep, a fifth of school-age children tend to sleep too little. Regardless of age, however, roughly half of children spend too much time looking at screens. The strongest association between mental health and lifestyle in Estonian children emerged with physical activity: there was a positive association with physical activity and a negative association with passive screen time.

**The associations between mental health and lifestyle are not that pronounced at preschool and primary-school age.**

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# 2.2
# Young people's mental health and well-being and its relationship with lifestyle

**SIGRID VOROBJOV, LEILA OJA AND JAANIKA PIKSÖÖT**

## KEY MESSAGE

**Over the past decade, the frequency of mental health problems among young people in Estonia has increased. More than a third of all girls and about a fifth of all boys between the ages of 11 and 15 feel sad or depressed more than once a week. Young people in Estonia experience sadness and depressive symptoms significantly more often than their peers in neighbouring countries. Lifestyle factors that support young people's mental well-being include a healthy diet with adequate physical activity and sleep. Poorer mental health indicators are strongly associated with drug use (cigarettes, alcohol, cannabis). Healthier lifestyle choices can exponentially improve the mental well-being of young people.**

## INTRODUCTION

Young people's well-being and health behaviour are largely influenced by their parents' beliefs and health behaviour. Many lifestyle factors support mental well-being, such as a healthy diet, sufficient sleep and physical activity. On the other hand, adolescent independence often comes with a craving for new experiences and the desire to test boundaries, which can involve experimentation with drugs. This can, in turn, affect young people's mental well-being. Adolescence impacts people's ability to cope with their emotions, and one solution may be to seek relief from using psychoactive substances. The first substances young people most often come into contact with are tobacco and alcohol, but also cannabis and stimulants or sedatives/hypnotics used for non-medical purposes (http://www.espad.org/espad-report-2019).

This article provides an overview of Estonian adolescents' mental health and well-being over the last two decades and their relationship with lifestyle and socio-economic factors.

## Young people's mental health and well-being and its relationship with lifestyle

Current research increasingly treats mental health outside the framework of psychiatric illness, with a clear focus on psychosocial well-being (Moore et al. 2019). Many factors influence psychosocial well-being during childhood and adolescence. This is the inception period for several behavioural risk factors that can

contribute to lifestyle-related disease. These factors include an unhealthy diet, physical inactivity, smoking and alcohol consumption, which can result in habits that carry over into adulthood. The 21st century has brought dramatic changes in the everyday life of young people, including their health behaviour. These have transformed, for example, the nutritional composition of food and eating habits more generally, decreased physical skills and activity, as well as increased the selection and availability of drugs.

Adolescent health and well-being are influenced by a number of individual, behavioural, social, cultural, environmental and organisational factors that operate on different levels and change over time (Inchley et al. 2020). This calls for updated risk models that involve youth behaviour and related factors and reflect the social context. The social context combines the immediate social environment that young people inhabit (e.g., family, peers and school) and broader social systems (e.g., education, healthcare, politics and the economy), while individual components include identity, attitudes, and biological aspects. The adolescent years provide an opportunity for prevention and intervention to support young people's healthy development, promote physical as well as mental health and well-being in adulthood, and thereby improve the health of the next generation.

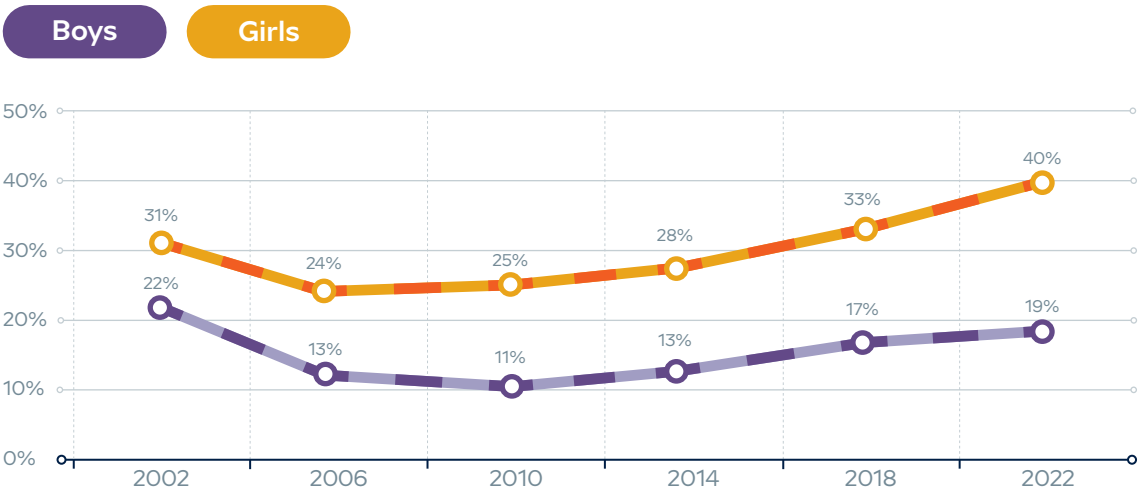
## Mental health of Estonian adolescents over the past two decades

Our analysis is based on data from the study Health Behaviour in School-Aged Children (HBSC) (Oja et al. 2019). HBSC is an international survey that has been conducted in Estonia since 1993. It has taken place every four years, for a total of eight times. The study provides a regular and comprehensive overview of the health status and well-being of adolescents aged 11, 13 and 15. It is the only population-based study on health behaviour with a representative sample of young people in Estonia. Our analysis relies on data from six waves of the study that span from 2002 to 2022 and feature the relevant characteristics associated with mental health. Each wave contains the health behaviour data of an average of 5,000 adolescents. The results are compared with neighbouring countries based on data from the 2018 survey.

In what follows, we use two variables to describe young people's mental health: (1) sadness and depressive symptoms over the past six months and (2) periods of depressiveness lasting two weeks or longer over the past 12 months. While the absence of these symptoms does not necessarily indicate high levels of mental well-being, measurable characteristics make it possible to assess young people's mental health. The survey has inquired about sadness and depressive symptoms in all participating countries since 2002, which enables Estonian data to be compared with data from other countries. Questions about a two-week period of depressiveness have been featured in the survey since 2006. The comparison period is therefore shorter, and since not all countries have included this question in the survey, this data cannot be used in international comparisons. However, because a period of depressiveness lasting for two weeks or longer indicates a more serious mental health problem, we took this variable as the basis for assessing the relationship between mental health and

**As many as 40% of girls and nearly 20% of boys felt sad or depressed more often than once a week during the previous six months.**

**Figure 2.2.1.** Students aged between 11 and 15 who felt sad or depressed more than once a week during the previous six months (%), by gender




**SOURCE:** figure by the authors, based on data from six waves of the HBSC survey (2002–2022

socioeconomic and lifestyle factors.

During the reference period of 2002–2022, the prevalence of sadness and depressive symptoms in Estonian adolescents was lowest in 2006 and 2010. In those years, less than a quarter of girls and a tenth of boys experienced these feelings more than once a week in the previous six months (Figure 2.2.1). The prevalence of depressive symptoms was the highest for girls in 2022 and for boys in 2002. Based on data from the latest survey, as many as 40% of girls and nearly 20% of boys felt sad or depressed more than once a week during the previous six months.

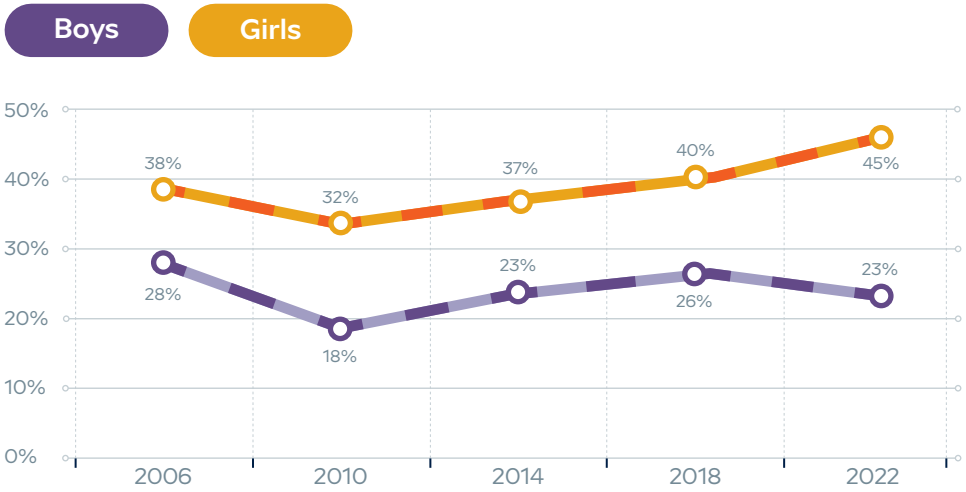
Figure 2.2.2 describes the experience of a period of depressiveness lasting for two weeks or longer during the previous year, for the period of 2006–2022. As with the previous figure, it shows that periods of depressiveness were more frequent in girls than in boys and that there has been an increase in the trend since 2010, regardless of gender. It is difficult to say whether this increase is related to young people perceiving their lives as more problematic or whether they are simply more aware of and attentive to their feelings.

## Mental health indicators of Estonian adolescents compared with peers in neighbouring countries

Comparing Estonian adolescents with their peers in neighbouring countries revealed that in all the analysed age groups, there were significantly more girls and boys in Estonia who have felt sad and depressed more than once a week than there were in Latvia, Lithuania, Finland or Sweden (Figure 2.2.3). In addition, Estonian scores were significantly higher than the average of the 45 countries participating in the HBSC survey. Nevertheless, comparing data from 2018 with those from the previous survey in 2014 revealed that the

**Compared with neighbouring countries, Estonia has significantly more adolescents who have felt sad or depressed more often than once a week.**

**Figure 2.2.2.** Students aged between 11 and 15 who experienced a period of depressiveness lasting for two weeks or longer during the past 12 months (%), by gender




**SOURCE:** figure by the authors, based on data from five waves of the HBSC survey (2006–2022)

prevalence of sadness and depressive symptoms among 11-to-15-year-olds has increased in all the countries presented in the figure, regardless of age group and gender (Oja et al. 2019). The figure also shows that the occurrence of sadness and depressive symptoms increased with age; among girls, it almost doubled between the ages of 11 and 15.

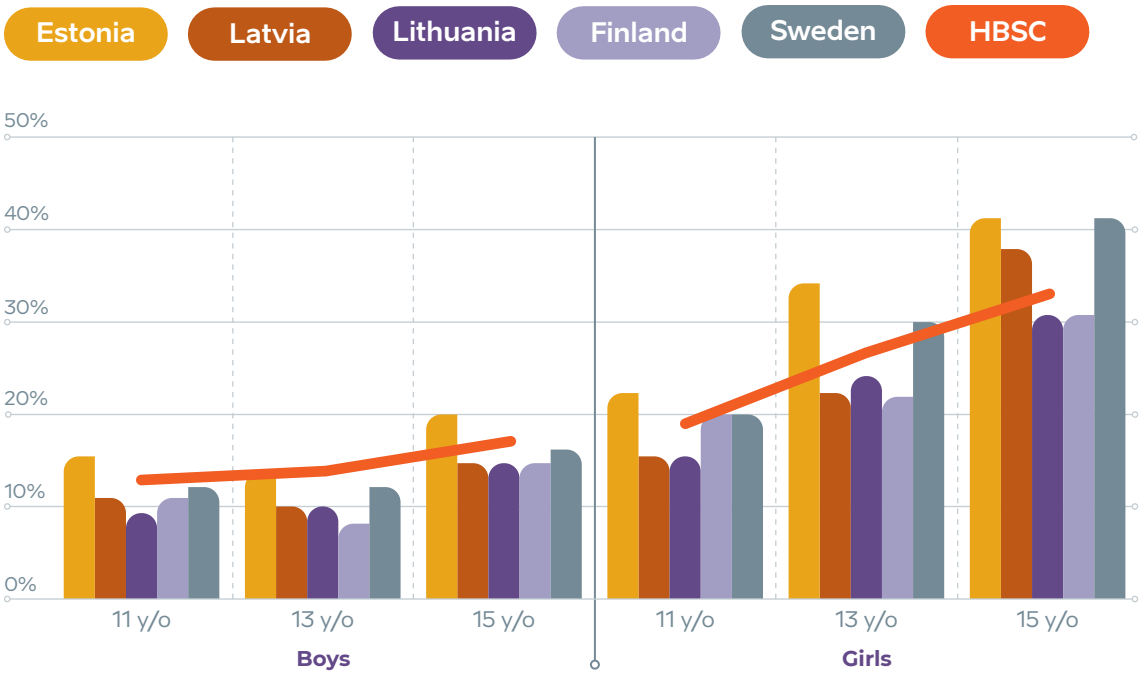
## The mental health of Estonian adolescents correlates with socioeconomic factors

Our primary social context is shaped by the family, which is the main source of lifestyle-related behavioural patterns. Studies show that nearly half of the mental health problems arising in adult years first appear during early adolescence and that neuropsychiatric disorders represent the main burden of disease among adolescents in wealthier countries (Kessler et al. 2007). The lower incidence of neuropsychiatric issues in poorer countries may partly be due to their lower standard of living, which makes problems related to meeting basic needs a priority over mental health problems, and results in the limited availability of psychological and psychiatric help. At the same time, early intervention is critical, especially with young people – the earlier the intervention, the more effective the solution. This is the case both in terms of the duration and intensity of the disorder and the occurrence of accompanying mental health problems (Kessler et al. 2007).

By analysing the relationship between mental health and socioeconomic factors in the case of Estonian adolescents, we found that depressiveness was significantly more common among young people with a home language

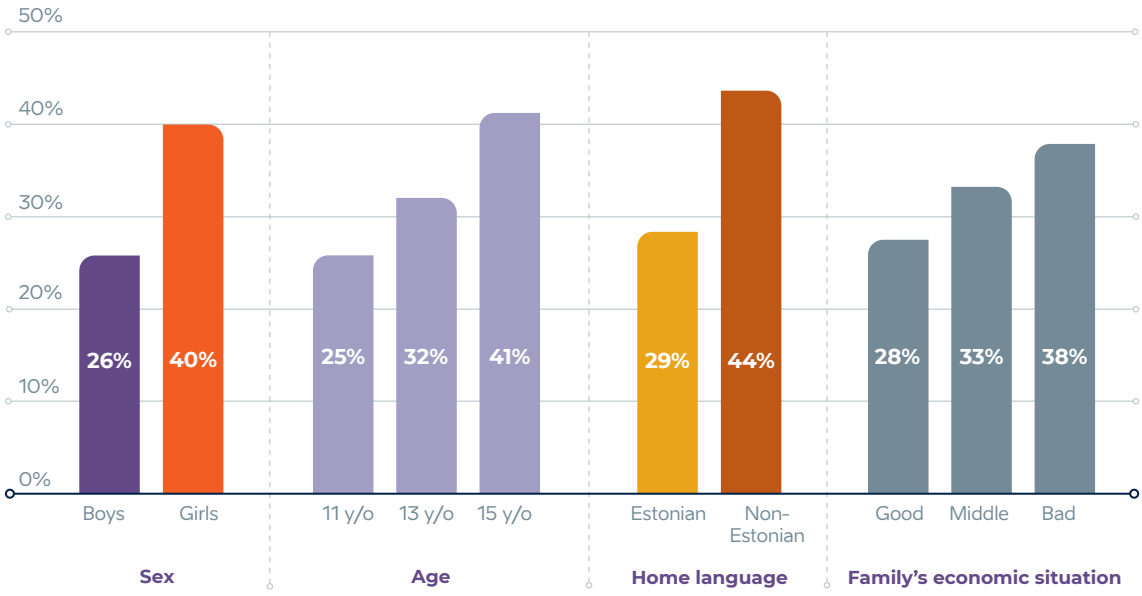
**Depressiveness was significantly more common among young people with a home language other than Estonian and those in a poorer economic situation.**

**Figure 2.2.3.** Students aged between 11 and 15 who felt sad or depressed more than once a week during the last six months (%) by gender, age, the average of the countries neighbouring Estonia and those participating in the HBSC survey




**SOURCE:** figure by the authors, based on HBSC survey data from 2018

**Figure 2.2.4.** Young people in Estonia who experienced a period of depressiveness lasting for two weeks or longer during the past 12 months (%), according to socioeconomic factors




**SOURCE:** figure by the authors, based on HBSC survey data from 2018

**NOTE:** Based on the chi-square test, all differences between groups are statistically significant, $p < 0.05$.

other than Estonian and those in a poorer economic situation (Figure 2.2.4). In addition, the figure shows that girls and older age groups experienced depressiveness more frequently, which is in line with the findings expressed in previous figures.

## Better health behaviour ensures higher mental well-being

Since the health behaviour and mental well-being of young people are related to their family's economic situation, the following analysis has been adjusted to accommodate the effect of this connection. The following results were also adjusted for the home language in order to eliminate the influence of different cultural backgrounds on the occurrence of a depressiveness. Therefore, to gain a better understanding of lifestyle factors associated with mental well-being, the analysis took into account the family's economic background, young people's home language, and age, to eliminate the effect of variation caused by these characteristics. Figure 2.2.5 provides an overview of the relationship between experiencing periods of depressiveness and various lifestyle factors (diet, physical activity, body image, sleep patterns and smoking, alcohol and cannabis use) in girls and boys. The relationships described in the figure are not necessarily causal; that is, they could be in either direction.

**Mental well-being in adolescents was closely associated with nutrition. Those who consumed less vegetables and fruits than recommended had higher odds of depressiveness.**

For healthy development, the young body needs plenty of fruits and vegetables, unrefined grain products, and moderate amounts of protein-rich foods. It needs only minimal amounts of sugary and processed foods; though high in energy, these lack important micronutrients. In our analysis, we assessed the relationship between diet and mental well-being based on the frequency of vegetable and fruit consumption and the eating of breakfast, in relation to the occurrence of periods of depressiveness. The reason for selecting these nutrition-related characteristics is that eating sufficient amounts of vegetables and fruits has generally been associated with better health. Anywhere upwards from seven or eight portions of vegetables and fruits every day, which is approximately 700 to 800 grams, is considered a sufficient amount for adolescents. Eating breakfast regularly is also known to be associated with better general well-being, including a lower risk of being overweight (Szajewska and Ruszczyński 2010) and a more positive body image (Ramseyer et al. 2019).

Our analysis indicates that mental well-being is closely associated with nutrition. The adolescents who consumed fewer vegetables and fruits than recommended had 1.3–1.5 times the odds of depressiveness (Figure 2.2.5). Furthermore, both girls and boys who regularly skipped breakfast were twice as likely to experience periods of depressiveness as the adolescents who ate breakfast.

Besides nutrition, sedentary lifestyle and physical inactivity are the two key determining factors of adolescent lifestyle and health (Biddle et al. 2017). According to WHO recommendations, young people should spend an average of at least one hour a day engaging in moderate to intense physical activity. Based on Estonian data, 16% of young people meet the recommended levels of physical activity (Oja et al. 2019). Adolescents' level of physical fitness is an important indicator of their lifestyle and has a positive correla-

tion with quality of life. Furthermore, low physical activity is associated with risk factors for lifestyle-related diseases that may follow into adulthood. The results of our analysis confirm the association between mental well-being and physical activity: Figures 2.2.5.a and 2.2.5.b show that adolescents who were less physically active had up to 1.4 times the odds of depressiveness.

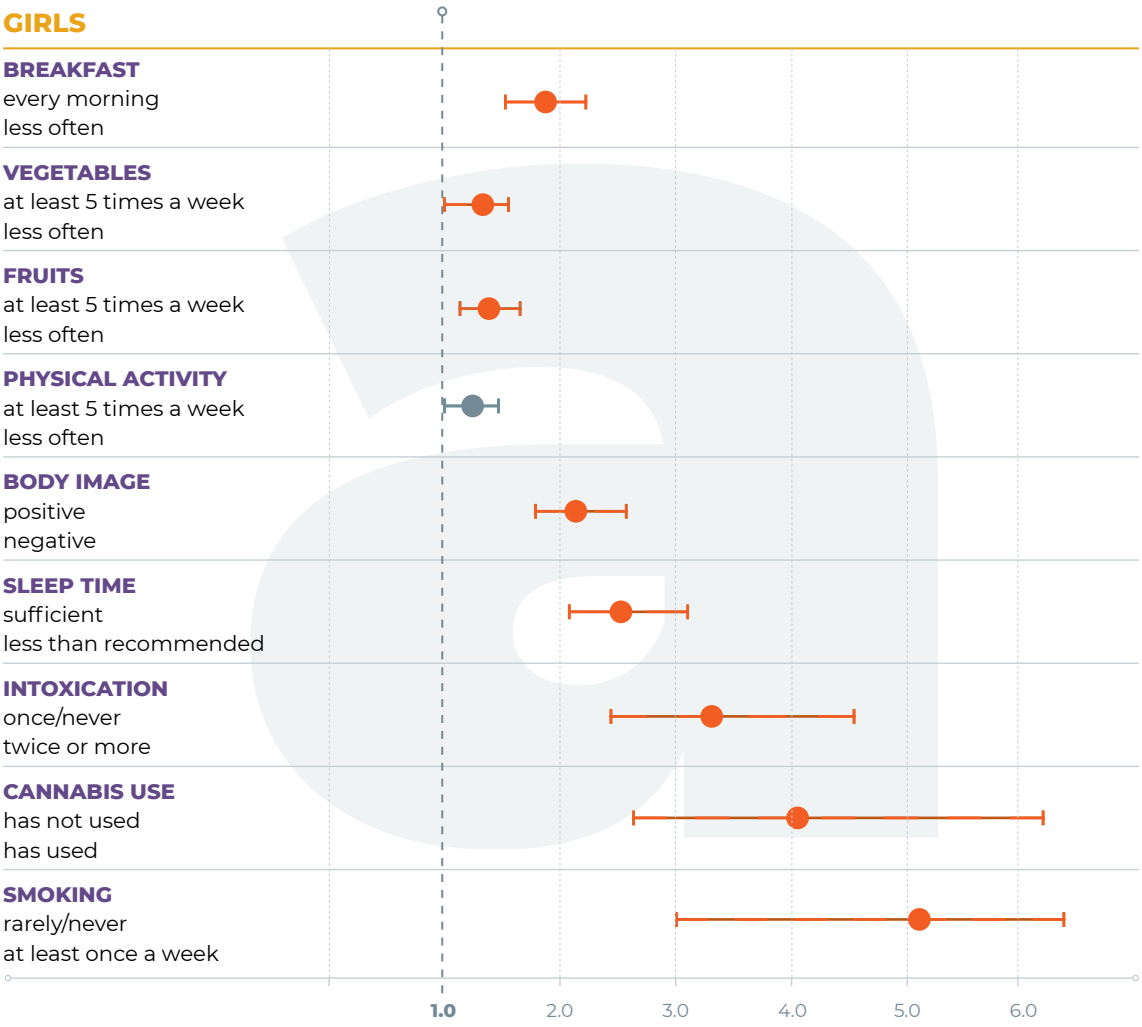
Diet and physical activity are often connected with excessive weight or the fear of being overweight, which in turn can affect a young person's body image. A negative body image can lead to less healthy choices, such as extreme dieting or over-exercising. The rate of young people who had experienced periods of depressiveness and had suicidal thoughts within the previous 12 months was higher among adolescents who were overweight (Haav 2020). Therefore, maintaining a positive body image is a part of mental well-being. According to Estonian data from 2018, slightly more than a third (34%) of school students considered themselves fat, girls more often than boys (38% v. 30%). A comparison with body mass index demonstrated that the body image of the majority of students was appropriate (Oja et al. 2019). Figure 2.2.5 shows that girls with a negative body image had more than double the odds of experiencing depressiveness, and while the odds are lower for boys, a negative body image was significantly associated with mental well-being among them as well.

**The relationship between insufficient sleep and depressiveness was significant in both boys and girls. Those who failed to get enough sleep were more likely to experience depressiveness.**

**Mental well-being in adolescents was associated with physical activity. Those who were less physically active were more likely to experience depressiveness.**

An optimal sleep regime is another important part of a healthy lifestyle. Insufficient sleep in adolescents is a growing public health problem in many countries. Poor sleep patterns, including insufficient, inconsistent, interrupted or poorly timed sleep (e.g. late bedtimes), affect between 30% and 70% of young people in Europe. At least a quarter of young people have trouble falling asleep at night and feel tired during the day. Adolescents' sleep patterns differ between schooldays and days off and do not meet their sleep requirements (Gariepy et al. 2020). The share of young people meeting the requirements for sleep duration is significantly lower on schooldays (from 32% to 86%) than it is on weekends (from 79% to 92%). The duration of sleep of Estonian adolescents also varies a great deal between schooldays and weekends. The scores are similar to the European average – 72% of Estonian adolescents meet the recommended duration of sleep on schooldays, while 92% meet the recommendation on weekends (Oja et al. 2019). The effect of insufficient sleep on depressiveness was stronger among girls, who had more than double the odds of experiencing periods of depressiveness if they failed to get enough sleep (Figure 2.2.5.a). While the relation to sleep duration is slightly weaker in boys than in girls, it remains significant.

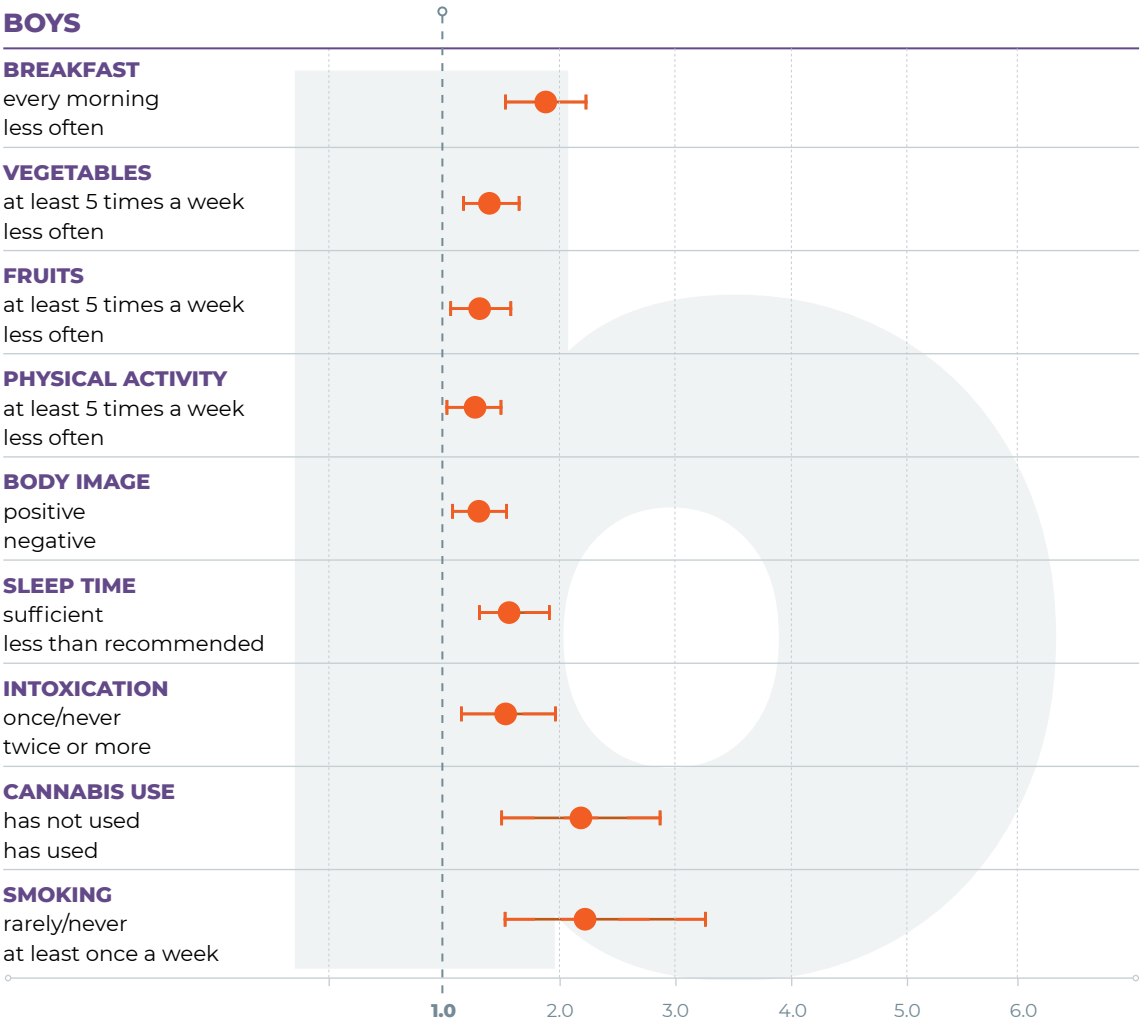
**Figure 2.2.5.a.** Lifestyle factors associated with the experience of a period of depressiveness lasting for two weeks or longer in **girls** (odds ratios with 95% confidence intervals)




## Drug use among young people is strongly associated with worse mental health

Drugs included in the analysis are alcohol, cigarettes and cannabis. Recent studies have shown that the number of young people who have consumed alcohol during their lifetime has decreased somewhat, while the number of young people who drink alcohol frequently and regularly has not changed (Vorobjov and Tamson 2020). For example, 37% of 15-to-16-year-old adolescents report that they have consumed alcohol in the last month, and a third have been drunk at least once in their life. As a disturbing trend, strong alcohol makes up a large proportion of the alcoholic beverages consumed by adolescents, increasing the risk of alcohol poisoning. Although there were no differences in alcohol consumption and intoxication between girls and boys, our analysis showed that the experience of periods of depressiveness was twice as frequent among girls who have been drunk than among boys. Our analysis showed that girls who have been drunk twice or more in their life had more than three times the odds of depressiveness as those who have never been drunk (Figure 2.2.5.a).

**Figure 2.2.5.b.** Lifestyle factors associated with the experience of a period of depressiveness lasting for two weeks or longer in **boys** (odds ratios with 95% confidence intervals)




**SOURCE:** figure by the authors, based on HBSC survey data from 2018

**NOTE:** Binary logistic regression analysis was used; dependent variable: the experience of periods of depression of two weeks or longer during the past year (yes v. no). All odds ratios were adjusted for age, home language and the family's economic situation. All variables were statistically significantly associated with experiencing periods of depressiveness, except for girls' physical activity.

The use of different drugs is interrelated. In most cases, young people first experiment with cigarettes and alcohol before moving on to other substances, most often cannabis or stimulants (Vorobjov and Tamson 2020). As with alcohol, the use of cannabis is strongly associated with depressiveness. Based on our analysis, girls and boys who have used cannabis had nearly four times the odds of experiencing periods of depressiveness.

Over the last two decades, cigarette smoking among adolescents has decreased significantly. Our analysis (Figures 2.2.5.a and 2.2.5.b) showed that girls who smoked at least once a week experienced periods of depressiveness almost five times as frequently as their non-smoking peers. For boys it was over twice as frequently as their non-smoking peers.

## SUMMARY

While the quality of life of young people in Estonia has never been as good as it is now, their mental well-being and health and risk behaviour characteristics show negative trends. In addition to the health and risk behaviour and socioeconomic characteristics viewed in this article, young people's lifestyle choices are influenced by their relationships with family, friends and people at school, which are discussed in the article by Valk et al. in Chapter 3 of this report.

In the last decade, sadness, depressive symptoms and depressiveness have grown more frequent among young people in Estonia and neighbouring countries. While girls experience mental health problems more often, the prevalence of mental problems increases with age in girls and boys alike. Factors that support young people's mental well-being include a healthy diet with adequate physical activity and sleep. Indicators of poor mental health are strongly associated with drug use, whether that be cigarettes, alcohol or other psychoactive substances. Our results also indicate that young people living in a poor economic situation and speaking a language other than Estonian as their home language experience periods of depressiveness more frequently, which suggests social inequality and needs special attention. Based on the results, we present recommendations below for encouraging young people to make conscious lifestyle choices.

**Indicators of poor mental health are strongly associated with drug use, whether that be cigarettes, alcohol or other psychoactive substances.**

Family and the example set by parents play an important role in shaping the nutrition habits of young people. Recommendations for promoting a healthier diet include making healthy food more appealing and increasing the accessibility and convenience of healthy choices while limiting unhealthy ones. It is also important to encourage healthy nutritional behaviour at an early age and to make health-conscious eating trendy through social norms.

In developing young people's physical activity, physical education at school should focus more on supporting students' independent physical activity and exercise habits outside of school. This could include instructions for independent practice on local exercise tracks or outdoor sports grounds, which could be used for physical activity with levels of difficulty and intensity appropriate for the school level. Teachers could follow students' progress by asking them to document their path of movement or visit to the sports grounds by tracking their physical activity via screenshots from a smartwatch or phone app.

Poor sleep quality is associated not only with poorer mental health but also with more frequent risk behaviour in adolescents. It has been found that in addition to ensuring longer sleep duration, parents who have set a suitable bedtime for their school-aged children contribute to their greater daytime alertness and mental well-being (Peltz et al. 2020). This involves following sleep hygiene, which may include avoiding the use of electronic devices right before sleep or limiting the consumption of caffeinated beverages. The improved quality of sleep and higher well-being of young people has also been confirmed to be positively associated with a later start to the school day (Peltz et al. 2017). Some Estonian schools have moved towards starting classes at 9 am instead of 8 am or having

one day a week when classes start much later, for example, at 10 am.

Substance use prevention is part of the personal, social and health education curricula at Estonian schools. Drug education must be broad-based and does not mean specifically discussing various drugs and their effects but involves the development of personal and social skills. These include communication skills, such as conflict management, self-awareness and saying no, as well as self-management skills to cope with stress, anxiety and other emotions. In addition to the curriculum, there are several prevention programmes launched by the National Institute for Health Development that are school-based (VEPA, KIVA) but also support parent education (Tark Vanem, Imelised aastad, EFEKT). All of these programmes aim to foster a safe and supportive environment for the development of young people. Data show that even minor drug use among lower secondary school students is associated with a higher risk of developing mental disorders (Brownlie et al. 2019). However, sometimes it is also the other way around: people may turn to drugs to cope with their mental health issues. Regardless of the situation, it is extremely important to recognise the problem as it emerges and intervene at an early stage. Current research on prevention stresses the importance of a supportive environment to prevent risk behaviour in young people and to increase their mental well-being (Hawkins et al. 2015). Fostering a supportive environment for young people means dealing with both the psychosocial and physical environment. It means promoting the prosocial behaviour of young people, instilling values and imposing rules in both the home and school environments (Biglan et al. 2012). The psychological flexibility of parents/teachers and their willingness to cooperate are essential to a supportive environment. One of the forms of cooperation that supports the development of an adolescent is a mentor-mentee relationship with an adult, especially in circumstances where the support of the parent(s) is not viable or adequate. A mentor can be someone from the school staff, a coach or an adult leading extracurricular activities. The goal of the mentorship is to cultivate a positive self-image in the young person, thereby promoting their positive behaviour, including in matters of health.

**Current research on prevention stresses the importance of a supportive environment to prevent risk behaviour in young people and to increase their mental well-being.**

To sum up, our findings show that a healthy lifestyle in young people is associated with better mental health and well-being; the adults who surround young people, and ensure a supportive and safe environment, play a vital role in setting the factors that affect the health behaviour of young people.

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# 2.3 The changing patterns of health-supporting and health-damaging behaviours and the mental health of adults

**RAINER REILE**

## KEY MESSAGE

**Lifestyle and mental health are closely related in adults. Both are largely shaped by behavioural choices and the resources and opportunities the surrounding environment provides. Over the past 30 years, the lifestyles of adults in Estonia have changed significantly. Examples of these diverse changes include broader participation in recreational sports on the one hand and the growing share of people with excess body weight on the other. While the mental health risks that follow certain health behaviours have become more apparent, they are not uniform across all population groups. This inequality is reflected in both lifestyle and mental health indicators. The accumulation of factors related to unfavourable socioeconomic status and lifestyle is clearly linked with increased mental health vulnerability. However, healthy behaviour alone is not enough to compensate for poorer mental health indicators arising from inequality.**

## INTRODUCTION

Certain patterns emerge when taking a closer look at human behaviour. This is to be expected, as specific stimuli tend to elicit similar responses. We also know that people can be categorised into population groups based on their shared characteristics; each group shares a common denominator and features that distinguish it from the others. Therefore, individual behaviour cannot necessarily be viewed separately from behavioural patterns in the population, given that our social context influences and directs our behavioural choices through various norms and rewards, creating behavioural opportunities and causing or reducing stress.

Since much of the population's health loss is caused by diseases that are either avoidable or preventable (Alwan et al. 2010), social context also

**The surrounding social context influences and directs behavioural choices through different norms and rewards, creating behavioural opportunities and causing or reducing stress.**

has an essential role in explaining why some people remain healthy while others become ill. This process is far from random: it is shaped by the interplay of resources provided by the surrounding environment and individual behavioural choices and opportunities. The same pattern applies to health behaviour and therefore helps explain the relationship between lifestyle and mental health. However, the social environment is not something that remains constant over time. Let's consider, for example, how our own daily life has changed over the past few decades. Since changes in the health behaviour of the population form the starting point for changes in physical and mental health, the population's current health behaviour and mental health should be viewed in the context of past developments.

This article aims to describe and analyse the relationship between lifestyle and mental health in the adult population of Estonia. The empirical part of the article is based on the 1990–2020 data from the Health Behaviour among the Estonian Adult Population survey and examines associations between lifestyle indicators and mental health outcomes over the past 30 years. By focusing on the indicators of health and risk behaviour and manifestations of their unequal distribution, this article aims to provide a brief insight into the relationships between lifestyle and mental health in adulthood and how their patterns in Estonia have changed over time.

## Long-term changes in adult health behaviour and mental health in Estonia

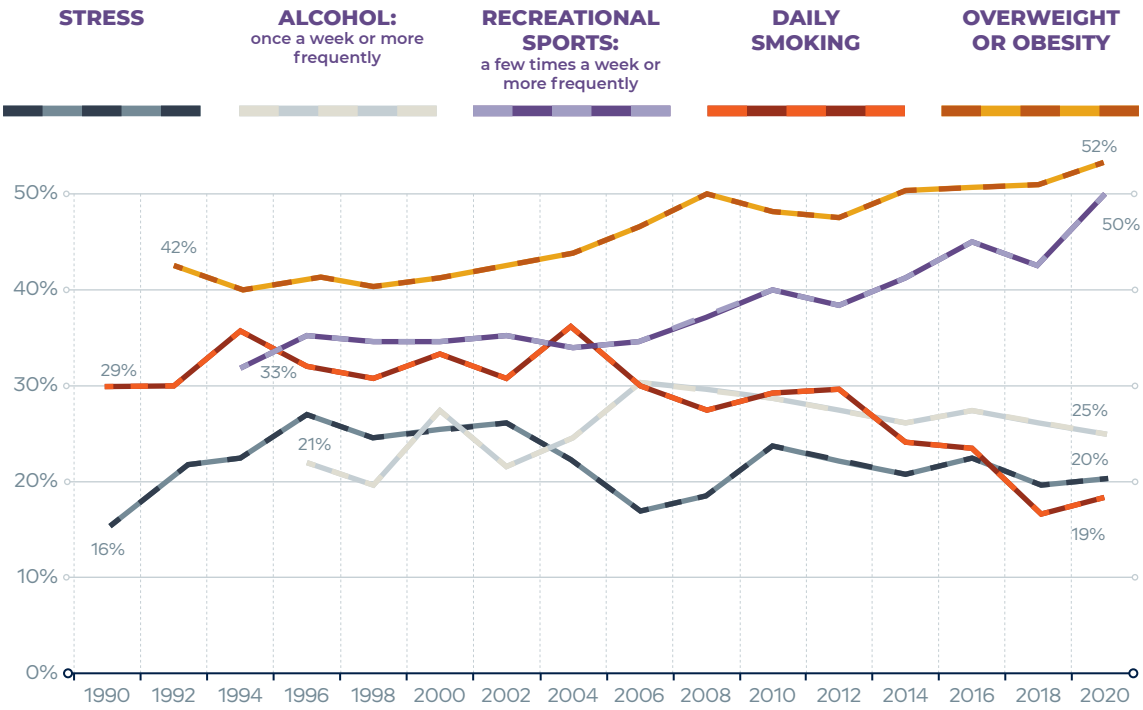
While there have been several surveys among the Estonian population that could be used to describe the relationship between lifestyle and mental health, the Health Behaviour among the Estonian Adult Population survey offers the longest timeline. This cross-sectional, population-based survey conducted every two years among Estonian residents aged from 16 to 64 first took place in 1990. Its data allow us to describe several indicators of health status and health behaviour and their determinants over the past 30 years.

**There have been no major changes during the past decade; on average, one in five adults experiences excessive stress.**

As the question about self-reported stress[1] has remained identical throughout all the waves of the study, this indicator provides a good basis for covering the long-term trends of mental health. The long-term prevalence trends of stress and multiple health behaviour indicators[2] (see Figure 2.3.1) reveal several interesting changes. The prevalence of unbearable or excessive stress was lowest (16%) in the 1990 survey but increased rapidly in subsequent years, reaching 28% in 1996. The prevalence of stress decreased in the first years of the 2000s, reaching 18% in 2006. However, the prevalence of stress increased again in the following years with the onset of the economic crisis. There have been no major changes during the past decade; on average, one in five adults experiences excessive stress.

If we add certain health behaviour trends to the mix, we see even more significant changes over the past three decades. In 1990, 30% of the Estonian population aged 16 to 64 were daily smokers. This percentage remained stable until the middle of the next decade, when the share of daily smokers in the population started a consistent decline. The trend of alcohol use can be observed since the

**Figure 2.3.1.** Prevalence of excessive stress and health behaviour indicators in the Estonian population aged between 16 and 64 (%)




**SOURCE:** figure by the author, based on weighted data from the Health Behaviour among Estonian Adult Population survey from 1990 to 2020

survey of 1996, when 21% of the population consumed alcohol once a week or more. Although there has been no significant change in the frequency of alcohol use over time, the proportion of frequent alcohol consumers was somewhat higher between 2006 and 2012. At that time, an average of 29% of Estonian residents aged from 16 to 64 consumed alcohol at least once a week. The prevalence of excess body weight can be examined through the total share of overweight (BMI[3] = 25.0–29.9 kg/m$^2$) and obese (BMI ≥ 30.0 kg/m$^2$) adults in the population, and this has consistently increased over time. Meanwhile, the increase in the share of adults engaged in recreational sports indicates that general awareness of the importance of healthy behaviours has grown. Although the opposite trajectories of these two indicators may come as somewhat unexpected, they illustrate, on the one hand, the versatility of health determinants and, on the other hand, the differences in health behaviour between population groups. The increase in the proportion of overweight and obese people in the general population does not necessarily indicate a similar trend among those who have increased their physical activity.

Since the changes in the time series of these indicators at least partially overlap with several significant events or stages

1 The question 'In the past 30 days, have you been stressed or under pressure?' with answer options: (a) yes, my life is almost unbearable; (b) yes, more than people normally are; (c) yes, but not more than people normally are; and (d) no, not at all. In the analysis part of this article, the summed responses to options (a) and (b) indicate a higher level of stress.

2 In a form that allows for comparison, body mass index has been included in the survey since 1992, participation in recreational sports since 1994, and the frequency of alcohol consumption since 1996.

3 Body mass index (BMI) = weight (kg) / height$^2$ (m).

for Estonia, the following analysis will look at four distinct periods. The period from 1990 to 1996 marks a time of social transition and also reflects the greatest relative change in the prevalence of stress. The period from 1998 to 2004 covers transformative years for Estonia's development, including the economic crisis of 1998 and the country's accession to the European Union and NATO in 2004. The period from 2006 to 2012 follows the years of rapid economic growth and the severe economic crisis that followed, while the last period (from 2014 to 2020) is distinguished by the COVID-19 pandemic that reached Estonia in the spring of 2020 (at the time of data collection).

Analysing the associations presented in Figure 2.3.2 shows that the discussed health behaviour indicators are associated with higher stress levels, but the strength of the association (and its statistical significance) varies from period to period.

**Higher stress levels are associated with several health behaviour indicators, the strength and significance of which have changed over the past quarter of a century.**

While the adjusted model covering the whole period shows that, compared to occasional smokers and non-smokers, daily smokers have 1.3 times the odds of having higher stress levels, the same odds ratio was the lowest and statistically non-significant for the period from 1990 to 1996, which had the highest prevalence of daily smokers. In all subsequent periods, however, daily smoking was associated with higher stress levels. For alcohol, the model spanning the entire period showed that

**Figure 2.3.2.** Association between health behaviours and perceived stress (adjusted odds ratios with 95% confidence intervals) in adults aged 16 to 64 years


**SOURCE:** figure by the author, based on weighted data from the Health Behaviour among Estonian Adult Population survey from 1990 to 2020

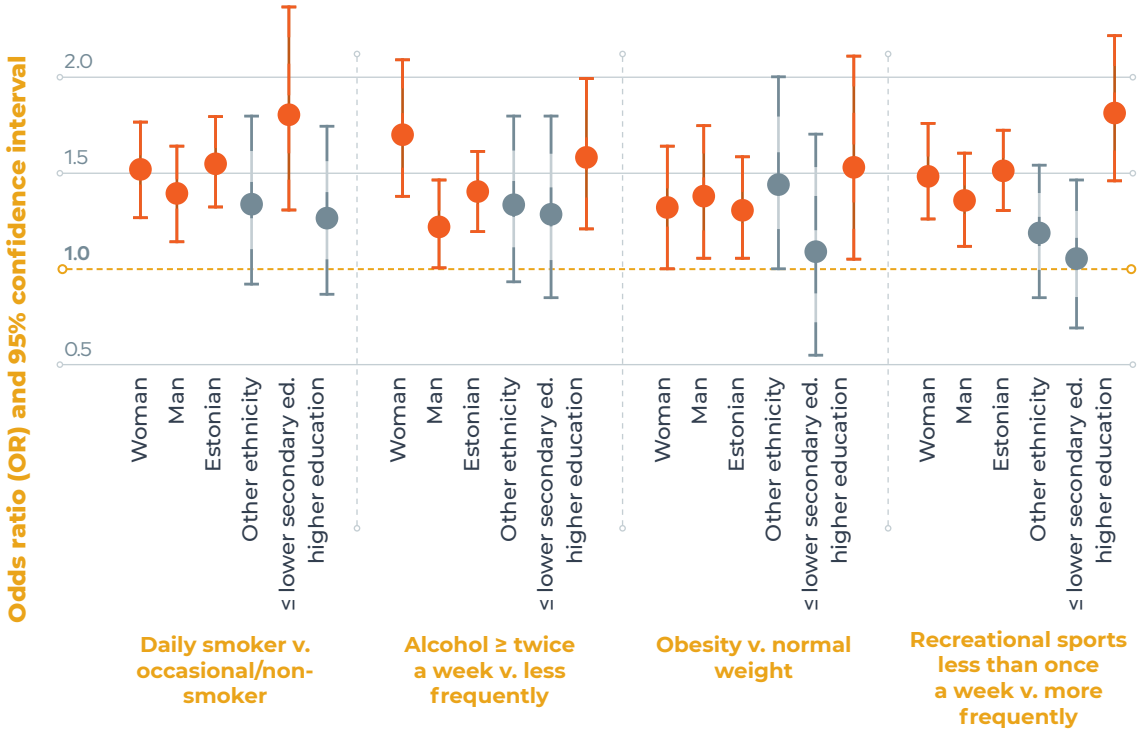
**NOTE:** Odds ratios and 95% confidence intervals adjusted for respondent gender, age, ethnicity, marital status, education, employment status, and health behaviour indicators were calculated using logistic regression analysis stratified by period.

drinking once a week or more was associated with 1.2 times the odds of greater stress compared to drinking alcohol less frequently. This relationship has been statistically significant since 2006. When it comes to body weight, the most conspicuous risk factor for stress is obesity. The subgroup of obese people had 1.2 times the odds of experiencing stress as adults with normal weight. However, if we look at this relationship across the different periods, the relationship between obesity and high stress levels was statistically significant only in the last two periods. A similar relationship appeared in connection to recreational sports. Adults who exercised less than once a week had approximately 1.2 times the odds of feeling stressed than those who exercised once a week or more. The odds ratio is the highest in the first period, while it is insignificant in the period from 1998 to 2004.

## Demographic variations in the relationship between lifestyle and mental health

Although the associations between adult health behaviours and mental health has changed over the past 30 years, there is a clear pattern that less-health-supporting behaviours are associated with poorer mental health. But does this association also vary across different population groups? Figure 2.3.3 presents the results of adjusted logistic regression analysis stratified by gender, ethnicity and education on health behaviour indicators and stress characteristics in the Health Behaviour among Estonian Adult Population survey aggregate dataset from 1990 to 2020.

**Figure 2.3.3.** Relationship between health behaviour and perceived stress (adjusted odds ratios with 95% confidence intervals) in adults aged 16 to 64 years by sociodemographic population groups




**SOURCE:** figure by the author, based on weighted data from the Health Behaviour among Estonian Adult Population survey from 1990 to 2020

**NOTE:** Adjusted for gender, age, ethnicity, education, employment status, smoking, alcohol consumption, BMI, participation in recreational sports and year of study.

While daily smoking predicted higher stress levels for both women and men, some differences appeared when adjusting for ethnicity and education. Daily smoking was statistically significantly associated with higher stress in Estonians (but not in residents of other ethnicities) and in the group with basic education (but not higher education). While both men and women who consumed alcohol once a week or more had greater odds of having higher stress levels, the odds ratio (OR 1.10 v. 1.33) was significantly higher in women. Regarding ethnicity, the association was significant only in Estonians, which is at least partially accounted for by the higher occurrence of this pattern of alcohol consumption (28% of Estonians and 18% of other ethnicities). With smoking, the relationship with stress was statistically significant in the group with lower education. With alcohol consumption, by contrast, the relationship was significant in the group with higher education, where frequent alcohol consumption increased the odds of experiencing stress by 1.26 times.

Overweight men had slightly increased odds of experiencing greater stress (OR 1.17) than men with normal BMI, while the association was not statistically significant in women. Similar effect sizes were found for Estonians (OR 1.14) and adults with higher education (OR 1.24). Regarding recreational sports, the relationship with stress was significant in both women and men, but differences emerged when adjusting for ethnicity and education. Estonians who rarely engaged in recreational sports had 1.23 times the odds of experiencing more stress as those who participated in recreational sports once a week or more frequently. By contrast, participation in recreational sports did not predict perceived stress among non-Estonians. The same was true for the educational variable: adults with higher education had a corresponding odds ratio of 1.37, while there was no difference in those with basic education.

Judging by these results, it is safe to conclude that while the lifestyle factors affecting perceived stress are generally similar in men and women, the relationship varies significantly when adjusting for ethnicity and educational level. Therefore, the relationships between health behaviour and mental health are not necessarily identical across all population groups.

## Lifestyle and mental health today

The analysis above explored the association between lifestyle and stress using the 30-year aggregate dataset of the Health Behaviour among Estonian Adult Population survey. More detailed insights into the possible links between various mental health indicators and health behaviour can be obtained using the most recent data from a survey in spring 2020 (Reile and Veideman 2021), which assessed mental health based on self-reported stress, depression, fatigue and suicidal thoughts. According to the weighted data, i.e. data adjusted to be representative of Estonia's 16-to-64-year-old population, 21% of respondents reported excessive stress. The study defined 'depressiveness' as feeling more low-spirited or miserable than usual in the past 30 days. Twenty-two percent of the respondents experienced depressiveness. Forty-three percent of people reported feeling fatigued all the time or quite often, and 18% of adults had had suicidal thoughts within the past 12 months or before. Since data collection for the survey began in March 2020, these indicators

**An irregular diet was a strong predictor of mental health problems in adults.**

are no doubt affected by the first wave of the COVID-19 pandemic.

The following regression analysis assesses the links between these mental health indicators and a series of sociodemographic and health behaviour indicators. After adjustment for demographic variables (Figure 2.3.4), the analysis reveals an interesting variation between health behaviour and mental health problems. The results show that an irregular diet strongly predicts mental health problems. Compared to respondents with more regular diets, those who skipped meals more than two days a week had greater odds (OR 1.39–1.60) of experiencing all the mental health problems discussed. Additionally, frequent consumption of sugary foods (6–7 days a week v. less often) was associated with both suicidal ideation (OR 1.54) and fatigue (OR 1.39). Body weight and physical activity indicators were associated with stress, fatigue and depressiveness but not with suicidal thoughts. For example, compared to respondents of normal weight, obese subjects were more likely to experience fatigue (OR 1.31) and depressiveness (OR 1.35). Adults who participated in recreational sports less than once a week had greater odds of experiencing stress (OR 1.46) or depressiveness (OR 1.36) or fatigued (OR 1.43) than those who regularly participated in recreational sports. The relationship with longer screen time was statistically significant only in the depressiveness model (OR 1.33).

Indicators of risk behaviour were associated with stress, fatigue and suicidal thoughts but not with depressiveness. Fatigue was predicted by both daily smoking (OR 1.31 compared to occasional or no smoking) and alcohol consumption 4–7 days a week (OR 1.43 compared to less frequent drinkers). Frequent alcohol and drug use were also strongly associated with stress and suicidal thoughts. With alcohol and drug use, the odds ratios are noteworthy: frequent alcohol use and drug use resulted in, respectively, 2.52 and 2.18 times greater odds for having suicidal thoughts compared to reference levels.

**The greater the number of behavioural risks, the higher the probability of mental health problems.**

In addition to associations between these individual factors, certain patterns are likely to emerge when looking at lifestyle on the whole. Being physically active usually means also monitoring one's diet and refraining from activities harmful to one's health. The same can be assumed for health-damaging behaviour, where the accumulation of risks can lead to more negative health outcomes. The following examines this situation based on the example of a summary index[4] of the eight health behaviour indicators previously discussed. While a quarter of Estonian adults aged 16 to 64 were not exposed to any health behaviour risk factors, and slightly over half were exposed to one or two factors, every fifth respondent was exposed to three or more risk factors.

Figure 2.3.5 presents odds ratios adjusted for demographic and socioeconomic factors for associations between multiple concurrent risk factors and mental health indicators. Compared to respondents who were not exposed to any risk factors, those exposed to one or two behavioural risk factors had 1.5 times the odds of experiencing stress, depression, fatigue and suicidal thoughts. However, in the presence of three or more risk factors, the corresponding odds ratios for all

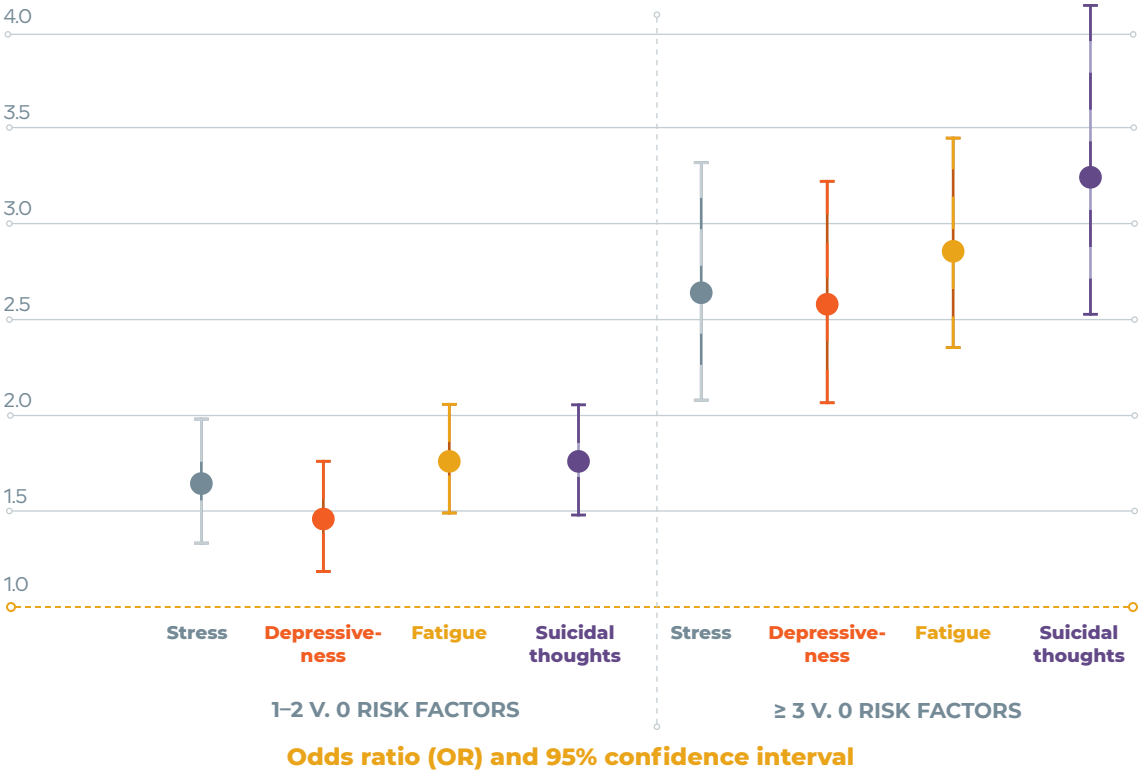
4 Indicators: irregular diet, consumption of sugary foods, body mass index ≥ 30.0, participating in recreational sports once a week or less, screen time ≥ 6 hours per day, daily smoking, alcohol use 4 to 7 days a week, drug use within the previous 12 months. The sum index is the sum of binary variables presented as risk factors and reflects the number of risk behaviours present.

**Figure 2.3.4.** Adjusted odds ratios with 95% confidence intervals for health behaviour indicators by mental health indicators


**SOURCE:** figure by the author, based on data from the 2020 Health Behaviour among Estonian Adult Population survey

**NOTE:** For health behaviour, the variables include diet (irregular diet, consumption of sugary foods), body weight and physical activity (body mass index, participating in recreational sports, screen time) and risk behaviour (daily smoking, alcohol use 4–7 days a week, drug use within previous 12 months). In order to explore the relationship between health behaviour and mental health, separate logistic regression analysis models, unadjusted and adjusted for all variables, were prepared for the variables of stress, depression, fatigue and the occurrence of suicidal thoughts, based on data from the 2020 Health Behaviour among Estonian Adult Population survey, with added county weights.

**Figure 2.3.5.** Association between concurrent health behaviour risk factors and mental health indicators (adjusted odds ratios with 95% confidence intervals) in adults aged 16 to 64 years




**SOURCE:** figure by the author, based on data from the 2020 Health Behaviour among Estonian Adult Population survey

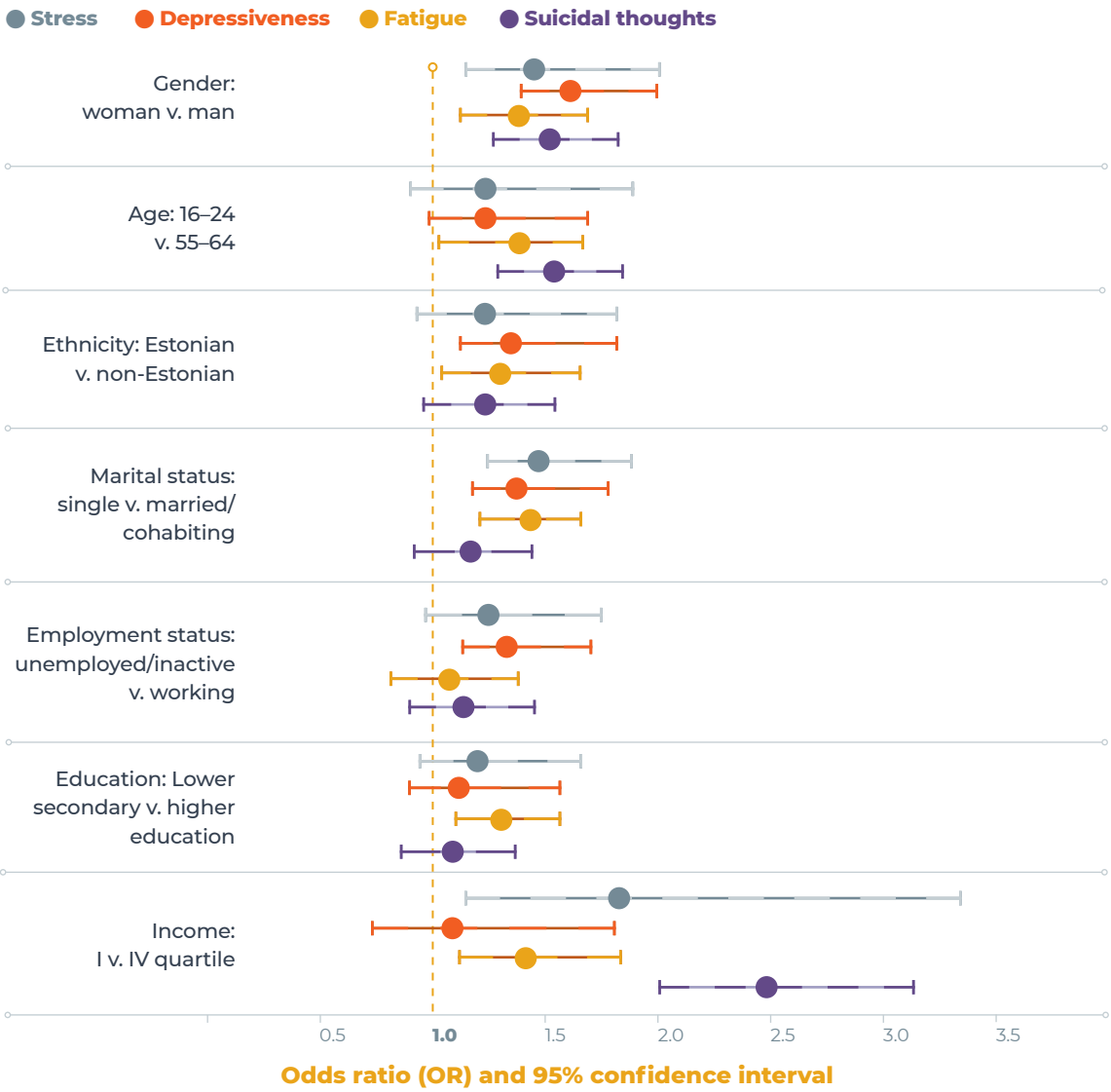
mental health indicators are more than 2.5 times as great. Therefore, the higher the behavioural risk factors, the greater the likelihood of having mental health problems.

## Patterns of inequality in the relationship between lifestyle and mental health

Lower socioeconomic status is generally associated with poorer health. This pattern also applies to mental health in Estonian data (see Figure 2.3.6), where an analysis based on the respondents' gender, age, ethnicity, marital status and health behaviour indicators showed that both non-working respondents and those with lower education and income levels had higher odds of experiencing mental health problems. Although the associations varied across mental health indicators, the most notable relative differences occurred for income. For example, variation in the odds of having suicidal thoughts was nearly 2.5-fold between the lowest and highest income groups. One explanation for these expected associations is that people with lower social status experience more chronic stressors, immediate coping difficulties, and more often negative life events.

**Lower socioeconomic status is generally associated with poorer health, and this pattern also applies to the mental health of adults in Estonian data.**

**Figure 2.3.6.** Adjusted odds ratios with 95% confidence intervals for demographic and socioeconomic indicators by mental health indicators

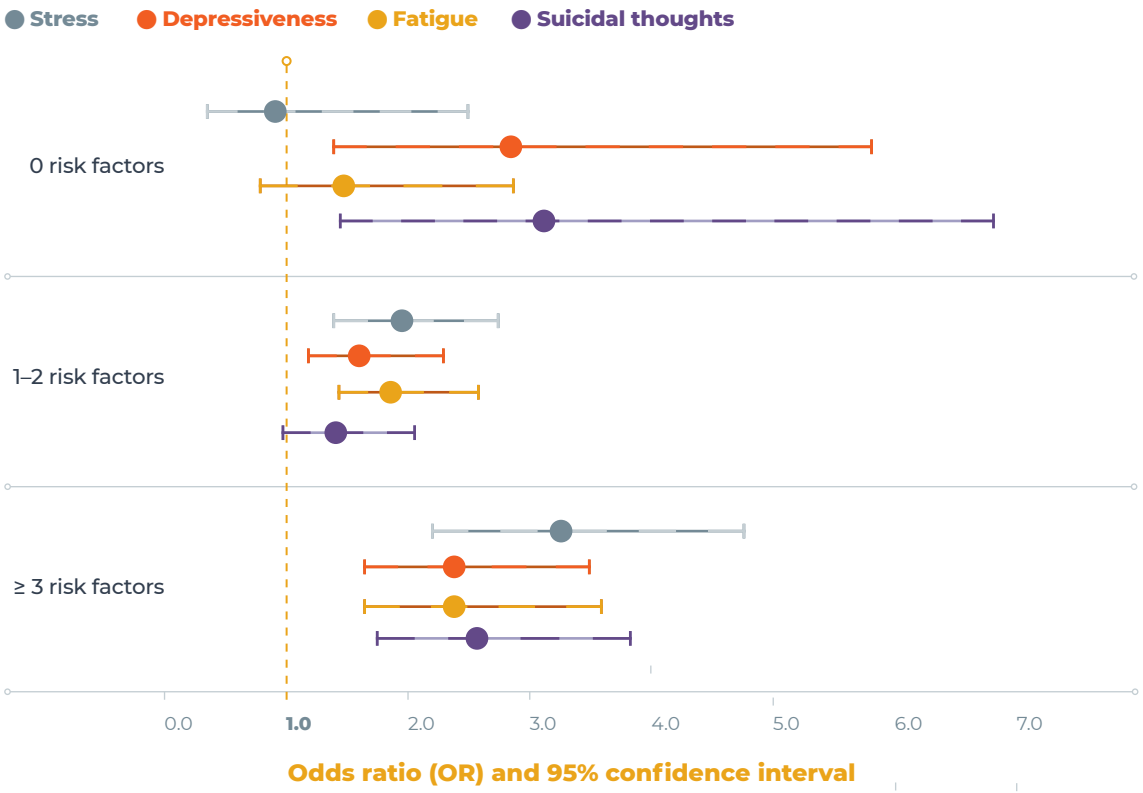



**SOURCE:** figure by the author, based on data from the 2020 Health Behaviour among Estonian Adult Population surve

**NOTE:** Adjusted for demographic and socioeconomic and health behaviour variables.

While the above confirms that socioeconomic inequality is clearly manifested in mental health indicators, lower socioeconomic status, in turn, increases the risk of health-damaging behaviour. Smoking, which is one of the leading behavioural factors causing health loss, is a good example. In 2000, the share of daily smokers among Estonian adults with basic education was 40%, while this figure was just 16% among Estonian adults with higher education. In 20 years, however, this almost 2.5-fold educational difference in smoking prevalence has increased to a more than 4-fold difference. In an analysis of associations that also took into account the effects of other demographic variables, the educational variation in daily smoking was even greater: compared to respondents with higher education, those with basic or lower education had 8.8 times the odds of being daily smokers. Similar socioeconomic patterns emerged with several other health behaviour indicators. For example, the difference between respondents with the

**Figure 2.3.7.** Relationship between low v. other socioeconomic status (adjusted odds ratios with 95% confidence intervals) and mental health indicators by number of behavioural risk factors




**SOURCE:** figure by the author, based on data from the 2020 Health Behaviour among Estonian Adult Population survey

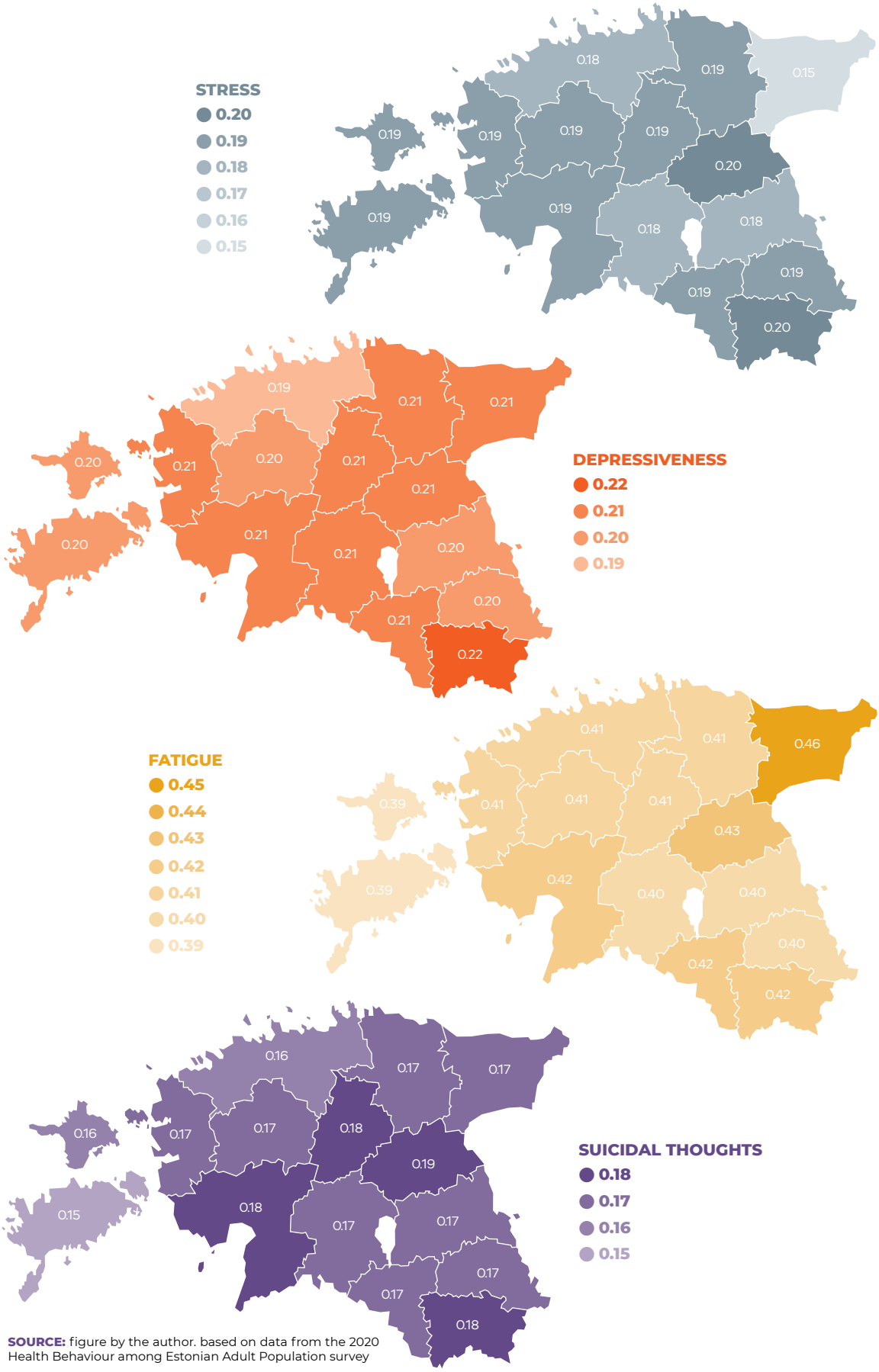
**NOTE:** Logistic regression analysis adjusted for demographic and socioeconomic and health behaviour variables and stratified by number of health behaviour risks.

lowest education and those with higher education was more than threefold (OR 3.60) in the model predicting participation in recreational sports and more than double (OR 2.07) in the model predicting obesity. There is another aspect to the health effects of inequality: lower socioeconomic status can also mean a lower probability of health behaviour change. While this association may not be universal, overweight adults with higher education had 1.45 times the odds of increasing their physical activity compared to overweight adults with basic education (Reile and Leinsalu 2019).

The accumulation of factors related to unfavourable socioeconomic status also increases the risk of mental health problems. When the variables of education level, income and employment status were combined into a sum index of low socioeconomic status (containing at least two elements from the following: primary or lower education level, belonging to the lowest income quartile, being unemployed) and correlations between low socioeconomic status and mental health outcomes were examined, it was clear that deprivation was strongly associated with mental health outcomes (see Figure 2.3.7). Without behavioural risk factors,

**Lower socioeconomic status can also mean a lower probability of health behaviour change.**

**Figure 2.3.8.** Mean predicted probability of mental health indicators by county




**SOURCE:** figure by the author. based on data from the 2020 Health Behaviour among Estonian Adult Population survey

deprivation was associated with only the variables of depressiveness and suicidal ideation. However, when behavioural risk factors were added, the association between lower socioeconomic status and mental health vulnerability became very noticeable.

Additional variation in mental health indicators emerged between regions. Figure 2.3.8 presents the probabilities of the occurrence of mental health problems by county. These have been adjusted for demographic, socioeconomic and lifestyle factors.[5] Although there were only marginal regional variations in mental health indicators (taking demographic, socioeconomic and health behaviour indicators into account) as a whole, compared to Harjumaa, the probability of experiencing stress was statistically significantly ($p < 0.05$) higher in Jõgevamaa and Pärnumaa counties, and correspondingly lower in Ida-Virumaa. The probability of experiencing depressiveness was higher in Jõgevamaa, while only adults in Ida-Virumaa were more likely to feel fatigued than those in Harjumaa.

**Variations by county in stress, fatigue, depressiveness and suicidal thoughts were generally modest.**

## SUMMARY

Health behaviours and mental health are closely correlated in adults. Although a closer inspection reveals differences between groups, it is generally true that behavioural patterns less supportive of overall health usually also indicate poorer mental health. Over time, the relationship between health behaviour and mental health factors has grown stronger. The trends in health behaviour and perceived stress presented in the time series reflect broader changes in society and the general way of life, supporting the hypothesis that health behaviour and mental health are shaped by the interplay of resources provided by the surrounding environment and individual behavioural choices and opportunities.

A closer look at health behaviour indicators revealed that diet, body weight and physical activity, as well as risk behaviour, were strongly associated with mental health indicators. While for most individual indicators the associations varied depending on which aspect of mental health was assessed, an irregular diet was associated with increased odds of experiencing mental health problems in all models. In addition, the analysis showed that the accumulation of behavioural risks can lead to more

5 The probabilities presented as county averages are based on the probability of the individual event (the corresponding mental health problem) predicted by the regression model adjusted for demographic, socioeconomic and health behaviour factors.

**Health behaviour and mental health are shaped by the interplay of resources provided by the surrounding environment and individual behavioural choices and opportunities.**

negative health outcomes. In the presence of three or more concurrent health behaviour risk factors, the odds ratios for all mental health indicators increased more than 2.5-fold.

While the above suggests that increased risk behaviour indicates a higher probability of mental health problems, demographic and socioeconomic variation must also be considered. In self-reported data, mental health problems were more common in women and younger age groups. However, the analysis showed that mental health problems were also significantly more common among groups with lower income. Lower socioeconomic status increased the risk of both health-damaging behaviour and mental health problems. This was particularly evident in the analysis stratified by risk behaviour, where low socioeconomic status was associated with more than twice the odds of experiencing multiple mental health problems even when no behavioural risk factors were present. Some differences in mental health indicators were also found between regions, but these variations by county in the mean values of stress, fatigue, depressiveness and suicidal thoughts were generally modest.

Therefore, the lifestyle and mental health of adults are clearly associated. However, the complex patterns of inequality expressed in this relationship highlight the need to treat health as a resource that is not uniformly distributed. The various ways in which our surrounding environments produce individual differences in health raise the question: how much of our lifestyle is shaped by our own choices, and how much of it is shaped by the opportunities we have? The answer to this question will determine whether and how we can prevent and alleviate public health problems related to risk behaviour and mental health in society.

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# 2.4

# A life course perspective on the associations between lifestyle and mental health in older age

**LIILI ABULADZE AND LUULE SAKKEUS**

## KEY MESSAGE

**Depressive symptoms in older people are caused mainly by recent or existing health problems and activity limitations. The conditions experienced in adulthood do not seem to buffer the effect childhood conditions have on health in later life, especially for women. Therefore, increasing the social and physical inclusion of older people in society could improve mental health in old age, regardless of other health problems.**

## INTRODUCTION

Mental health is an important component of the general health status and well-being, affecting willpower and agency, the ability to function in daily life, and overall life satisfaction. Mental health problems occur more frequently in younger years (adolescence) and again in old age (WHO 2017; Laidra 2016).

There are various reasons for increased mental health issues later in life. The life course approach offers the most comprehensive framework, linking a person's life events to age-specific changes and temporal and social dimensions (Elder et al. 2003). This means that some life events are more likely at a certain age and will affect mental health through their timing and order of occurrence. Ageing or getting older is not necessarily a depressing process in and of itself. According to the life course approach, the health of individuals is affected by their life experiences. The accumulation of negative, unfavourable or what are perceived as unusual conditions or events can lead to poorer health.

**Some life events are more likely at a certain age and will affect mental health through their timing and sequence.**

There are various life course mechanisms that affect health (Pearlin et al. 2005). First, the ways in which people assume social roles and achieve status throughout life may be different depending on their family background and childhood home conditions, as well as the neighbourhood they inhabit or grew up in. These past factors can affect health by limiting access to necessary informa-

**The life course approach helps to explain inequalities in health. People who experience more vulnerability early in life (or even before birth) are subject to the accumulation of social and economic risk factors during their subsequent lives, which in turn magnifies health inequalities.**

tion and resources. The accumulation of constant or repeated difficulties in key areas of life such as family or work can also have a negative impact on health. Persisting economic vulnerability or repeated threats to identity may affect health. Early traumatic experiences are another aspect that may lead to chronic stress and tension. Secondary stressors resulting from trauma and the increased likelihood of their post-traumatic occurrence may affect mental health in later life, mostly indirectly. Deviations from social norms in the timing and sequence of important life events may also create tensions by impacting access to certain opportunities in life (e.g. education or the labour market). Disruptions to the regular course of life, such as breakups, job loss or unexpected caregiving responsibilities, can have a greater impact on those who lack the necessary resources to cope with new situations.

The life course approach helps to explain inequalities in health. People who experience more vulnerability early in life (or even before birth) are subject to the accumulation of social and economic risk factors during their subsequent lives, which in turn magnifies health inequalities. Therefore, in addition to preventive measures that stress the role of individual responsibility and personal choice, social and economic adjustments on a national and community level also play an important role in improving health.

This article provides an overview of the association between lifestyle and mental health in people aged 65 and older by examining changes and differences in mental health in old age through lifestyle factors. For this, we will be relying on data from the SHARE (Survey of Health, Ageing and Retirement in Europe) longitudinal survey. This survey collects data on individual ageing, health and exiting the labour market in European countries.

## Life course and lifestyle

Approaching health from a life course perspective makes it possible to evaluate and understand how experiences from various life stages as well as different historical periods impact later life. Many stressful early life experiences or events can affect health later in life. Relevant stressors that occur during sensitive or critical life periods can affect biological stress regulation mechanisms, the functioning of the nervous system or the expression of genetic predispositions as a reaction (WHO 2014). Lifestyle may also change in different periods of life in response to the surrounding social environment and the needs and opportunities of the individual. The lifestyle aspects we will consider more closely include diet, physical activity, sleep patterns, smoking and alcohol consumption, as previous research has identified these as key factors for mental health.

**Lifestyle may change in different periods of life in response to the surrounding social environment and the needs and opportunities of the individual.**

Changes in diet can be viewed from a life course perspective. First, certain food-related attitudes and strategies develop at an early age and remain fairly stable throughout life (Devine 2005). Second, food choices and eating behaviours can change as a result of pivotal life events – for example, when people are suddenly faced with the need to take better care of their own health or that of loved ones, to improve self-efficacy through dietary choices, or to redefine themselves through food. Third, food choice is closely connected with the meaning attributed to and the norms associated with food, which may differ or change with social positioning, for example, reflecting social class, ethnic group, gender or generation. These links can manifest themselves in dietary habits, the role of food quality, access to different nutrients, and the availability of free time to prepare meals. Eating habits can also change across generations. For example, people born in the early 20th century grew up in an environment with fewer or different dietary guidelines than later generations. If the habits typical of a generation are sufficiently widespread or long-lasting, they can be reflected in population-level health indicators.

Physical activity can be understood as either a (health) behaviour or a habit: the former emphasises its cognitive, emotional and operational component, while the latter is an automatic and often subconscious activity (Hirvensalo and Lintunen 2011). From a life course perspective, it has been found that physical activity in childhood and adolescence predicts physical activity in adulthood, although many other factors influence adult physical activity in addition to childhood conditions. This association may function through motivation and the accumulation of experience. However, the relationship between physical activity in childhood and old age is already weaker, probably due to the long intervals that separate these life periods. Nevertheless, patterns of physical activity adopted early on in life can also influence physical activity in later life – for example, through the early acquisition of skills. A change in physical activity is also more likely when assuming new social roles (Hirvensalo and Lintunen 2011). Retirement has been associated with a decrease in physical activity, linked with, for example, the end of daily commuting. On the other hand, former sedentary workers have been found to become more physically active in this life stage.

**While sleep provides relief from the problems of everyday life, changes in sleep patterns and poor quality of sleep are frequent symptoms of mental health problems.**

While sleep provides relief from the problems of everyday life, the quality of sleep can similarly vary among people with different backgrounds and coping strategies. In general, sleep disorders are more common in people with a poorer socioeconomic situation. The reasons include structural disadvantages, related psychological stress, lifestyle factors, and less knowledge about better sleep hygiene (van de Straat et al. 2020). In general, middle-aged and older women experience more sleep disorders than men of the same age. While men's sleep disorders are only associated with their current socioeconomic status, women's sleep disorders are associated with both their current socioeconomic conditions and those of their childhood. Therefore, growing up in poorer socioeconomic conditions affects the quality of sleep in older women, even if their socioeconomic situation improves later in life (van de Straat et al. 2020). Here, we should not forget that changes in sleep patterns and poor quality of sleep are also frequent symptoms of mental health problems.

Smoking and alcohol use are reflections of stress- or tension-responsive behaviour that can harm one's health when done excessively, leading to addiction and mental health problems. In the older population, the abuse of tobacco and alcohol has generally been more common among men, with a greater effect on their morbidity and mortality. Because in Estonia, the life expectancy of men is significantly shorter than that of women, this effect on health outcomes may not be reflected in surveys, as respondents generally include healthier people and those who have survived longer.

## Depressiveness in older age

Our analysis is based on data from the 2013 Estonian SHARE survey, which asked the respondents detailed questions about their childhood conditions, enabling us to consider various life course conditions. The data consists of answers given by people aged 65 and older who were interviewed in 2011 and again in 2013. We analysed the changes that had taken place in the respondents' mental health in that period. The final Estonian sample included 2,026 individuals aged 65 and older (684 men and 1,342 women).

We mainly looked at the EURO-D depressiveness scale, which has been internationally developed, allows for comparisons and has been validated for the middle-aged and older population (Guerra et al. 2015). This scale measures the presence of 12 symptoms (including low mood, pessimism, suicidal thoughts, guilt, sleep disturbance, loss of interest, irritability, change in appetite, fatigue, poor concentration, lack of enjoyment and tearfulness) during the previous four weeks; the individual scores are summed to form a composite score, with higher values indicating depressiveness (score value over 3). The self-reported results do not indicate medically diagnosed depression, which means that the prevalence of self-reported depressiveness is significantly higher than the prevalence of depression. Nonetheless, the scale helps to estimate the number of people in need of some form of mental health (first) aid. Within this article, it is therefore more accurate to speak of 'depressiveness' or 'depressive symptoms'.

In general, the average number of depressive symptoms among people aged 65 or older was relatively high in Estonia compared to the other countries surveyed. In 2011, the prevalence of depressiveness in Estonian respondents was 40% (46% in women, 29% in men). By 2013 it had somewhat decreased, settling at 38% (43% in women and 28% in men). Although women had more depressive symptoms than men in both Estonia and other countries, men had a worse position than women in a European comparison (Figure 2.4.1). Estonian men had an average of 2.5 depressive symptoms. This was one of the highest scores in 2013 and was matched only by men in Italy, France and Slovenia. However, Estonian women had an average of 3.4 symptoms (crossing the threshold indicating depressiveness), slightly less than women in Spain and Italy and on par with French women.

The average number of depressive symptoms increased with age in all the countries surveyed. For men aged 85 years and older, there were no significant differences between countries in the number of symptoms. While Estonian

**The average number of depressive symptoms among people aged 65 or older was relatively high in Estonia compared to the other countries surveyed.**

**Figure 2.4.1.** Mean number of depressive symptoms and confidence intervals (EURO-D, scale 1–12) among respondents aged 65 years and older, by gender

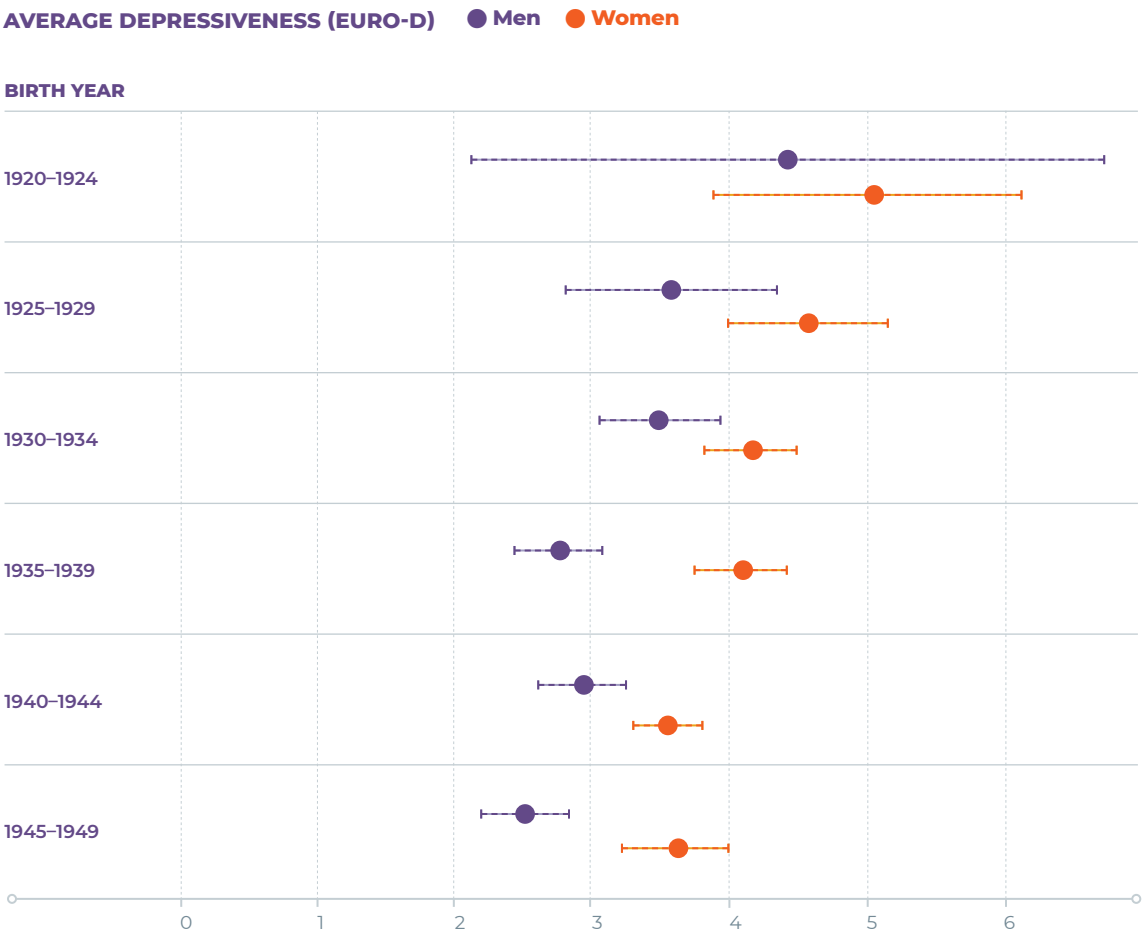

**SOURCE:** figure by the authors, based on SHARE survey data from 2013

women crossed the threshold indicating depressiveness, or reached the average level of three symptoms, in their mid-60s, Estonian men arrived at the same level only in their 80s (Figure 2.4.2).

## Associations between lifestyle and mental health

The main lifestyle factors we have considered are the frequency of consuming various nutrients, the frequency of moderate and intense physical activity, the presence of sleep disorders, smoking (either currently or in the past) and the frequency of consuming large amounts of alcohol. The main socio-demographic variables for which we adjust the results of our regression models are age, birth year, country of birth (born in Estonia or elsewhere), place of residence (rural or urban area), marital status (married/cohabiting, divorced/separated, single, widowed), number of children, number of years spent in education and employment status (at home / ill, retired, working). We also adjusted our models

**Figure 2.4.2.** Mean number of depressive symptoms and confidence intervals (EURO-D, scale 0–12) in Estonia, by birth year and gender




**SOURCE:** figure by the authors, based on SHARE survey data from 2013

for previous depressive symptoms, which describe the health status (EURO-D in 2011), the level of health-related activity limitations (severe, moderate, no limitations) and body mass index (BMI). Childhood home conditions were taken into account by adjusting the models for three variables, which describe the living conditions (the degree of crowding in the childhood home, i.e. the number of rooms per person), economic conditions (estimation of the economic situation of the childhood family) and the health status (self-reported childhood health) experienced in childhood.

The results of the final regression models adjusted for all variables on the relationship between lifestyle and mental health in men and women are listed in Figure 2.4.3. Although the associations expressed in these figures were generally few or weak, they showed that depressive symptoms were significantly more frequent in men and women who experienced sleep disorders or consumed alcohol either with unknown frequency or occasionally (1–3 times a month, compared to not once during the past three months). Since sleep disorders are one of the main symptoms indicating depressiveness, it was to be expected that the adjusted variables in our analysis did not eliminate this association. The results for alcohol consumption may initially seem perplexing. However, they are explained by the fact that those who rarely or never

**Table 2.4.1.** Odds ratios for depressiveness in Estonian **women** aged 65 and older by lifestyle factor, after adjustment for different variables

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 | Model 9 |
|---|---|---|---|---|---|---|---|---|---|
| Presence of sleep disorders | 3.46*** | 3.44*** | 3.37*** | 3.37*** | 3.25*** | 2.00*** | 2.00*** | 2.00*** | 1.98*** |
| Current smoker | 1.33 | 1.42 | 1.41 | 1.46 | 1.48 | 1.21 | 1.21 | 1.22 | 1.28 |
| Former smoker | 0.99 | 1.01 | 1.04 | 1.06 | 1.13 | 1.08 | 1.08 | 1.08 | 1.06 |
| Alcohol: not specified | 1.91*** | 1.86*** | 1.83*** | 1.84*** | 1.74*** | 1.55** | 1.55** | 1.52** | 1.51** |
| Alcohol: 1–3 times a month / less often | 1.96** | 2.04** | 1.98** | 1.97** | 2.04** | 1.77* | 1.76* | 1.74* | 1.73* |
| Alcohol: 1–2 times a week | 4.92 | 5.34 | 4.94 | 4.83 | 4.62 | 2.86 | 2.91 | 3.00 | 3.21 |
| Alcohol: 3–7 days a week | 1.48 | 1.69 | 1.44 | 1.59 | 1.43 | 0.94 | 0.93 | 0.82 | 0.72 |
| Intense physical activity: less often | 1.27 | 1.23 | 1.21 | 1.19 | 1.14 | 0.89 | 0.89 | 0.90 | 0.89 |
| Moderate physical activity: less often | 1.63** | 1.53** | 1.55** | 1.57** | 1.51* | 1.23 | 1.23 | 1.24 | 1.20 |
| Legumes, eggs: less often | 1.23 | 1.24 | 1.20 | 1.21 | 1.29 | 1.16 | 1.15 | 1.15 | 1.16 |
| Dairy products: less often | 1.10 | 1.10 | 1.11 | 1.11 | 1.09 | 1.09 | 1.09 | 1.11 | 1.10 |
| Fish, chicken, meat products: less often | 1.07 | 1.06 | 1.07 | 1.09 | 1.06 | 1.03 | 1.02 | 1.01 | 1.03 |
| Vegetables and fruits: less often | 1.12 | 1.10 | 1.09 | 1.10 | 1.07 | 0.97 | 0.97 | 0.96 | 0.95 |

**SOURCE:** table by the authors, based on SHARE survey data from 2013

**NOTES:** Statistical significance: *** p < 0.001; ** p < 0.01; *p < 0.05; p >= 0.05.

Reference groups: no sleep disorders; never smoked; no alcohol consumption in the past three months; daily intense physical activity; daily moderate physical activity; daily consumption of legumes, eggs, dairy products, fish, chicken, meat products and vegetables and fruits.

The order of adjustment for variables in the models: Model 1: lifestyle factors; Model 2: + age, birth cohort; Model 3: + national origin, place of residence; Model 4: + marital status, number of children; Model 5: + education, employment status: Model 6: + depressiveness, activity limitations, BMI; Model 7: + degree of crowdedness of childhood home; Model 8: + economic status in childhood; Model 9: + health status in childhood.

drink alcohol include more people with chronic health conditions or activity limitations. Thus, their existing impaired health status is the underlying condition for their abstinence from alcohol as well as their poorer mental health (Abuladze et al. 2020).

In the case of women, sociodemographic and economic variables (except marital status and number of children) explained some of the differences in depressive symptoms in sleep disorders, alcohol consumption and moderate physical activity; however, health variables explained the largest number of the differences (Table 2.4.1). This was most evident for moderate physical activity, where significant differences in the odds of depressiveness disappeared (Model 6, Table 2.4.1). Of the childhood

**The presence of sleep disorders and differences in the frequency of alcohol consumption most clearly predicted depressiveness in older men and women in Estonia.**

factors, the economic conditions and the self-assessment of childhood health explained some of the differences.

Men who ate protein-rich foods less than three days a week had twice the odds of depressiveness as those with a daily protein intake (Table 2.4.2). After adjusting the model for health variables, however, the significance of this variable disappeared, indicating that health problems can affect the frequency of consuming the corresponding nutrients (Model 6, Table 2.4.2). However, when adjusted for childhood conditions, this variable once again assumed significance, suggesting the presence of some adverse association with nutrient intake (Models 8 and 9, Table 2.4.2).

While health status best explained the differences in the odds of depressive-

**Figure 2.4.3.** Odds ratios with 95% confidence intervals for depressiveness by lifestyle factors in finally adjusted models, older men and women in Estonia


**SOURCE:** figure by the authors, based on SHARE survey data from 2013

**NOTE:** The models have been adjusted for sociodemographic, economic, health and childhood variables.

ness in both men and women, adjusting the model for childhood conditions decreased differences in the odds of depressiveness only in women. Childhood conditions, especially economic status and self-reported health, explain differences in mental health among women. Thus, among women, the inequality experienced during childhood carries over into later life, amplifying somewhat the negative relationship between lifestyle and mental health in old age.

Therefore, the presence of sleep disorders and differences in the frequency of alcohol consumption most clearly predicted depressiveness in older men and women in Estonia. In men, however, the role of a protein-rich diet in the onset of depressiveness was also found to be important. Other lifestyle factors, such as consumption of various nutrients, physical activity and smoking, were not good predictors of experiencing depressiveness in older age.

**Table 2.4.2.** Odds ratios for depressiveness in Estonian **men** aged 65 and older by lifestyle factor, after adjustment for different variables

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 | Model 8 | Model 9 |
|---|---|---|---|---|---|---|---|---|---|
| Presence of sleep disorders | 3.03*** | 2.95*** | 2.99*** | 3.04*** | 2.97*** | 1.65* | 1.65* | 1.67* | 1.68* |
| Current smoker | 1.30 | 1.43 | 1.47 | 1.47 | 1.44 | 1.23 | 1.23 | 1.34 | 1.34 |
| Former smoker | 0.97 | 0.96 | 0.98 | 0.97 | 0.96 | 0.87 | 0.88 | 0.88 | 0.90 |
| Alcohol: not specified | 1.98** | 1.90** | 1.92** | 1.92** | 1.89** | 1.65* | 1.71* | 1.80* | 1.80* |
| Alcohol: 1–3 times a month / less often | 1.86* | 1.95* | 1.95* | 1.86* | 1.86* | 2.00* | 1.94* | 2.04* | 2.10* |
| Alcohol: 1–2 times a week | 2.59 | 2.96 | 2.96 | 3.19* | 3.23* | 2.42 | 2.18 | 2.74 | 2.83 |
| Alcohol: 3–7 days a week | 1.34 | 1.42 | 1.42 | 1.27 | 1.26 | 1.54 | 1.40 | 1.61 | 1.62 |
| Intense physical activity: less often | 1.19 | 1.09 | 1.05 | 1.05 | 1.04 | 0.82 | 0.83 | 0.83 | 0.83 |
| Moderate physical activity: less often | 1.67 | 1.71 | 1.70 | 1.69 | 1.72 | 1.45 | 1.46 | 1.39 | 1.37 |
| Legumes, eggs: less often | 2.25* | 2.30* | 2.29* | 2.37* | 2.42* | 2.03* | 2.12* | 2.34* | 2.32* |
| Dairy products: less often | 0.77 | 0.78 | 0.78 | 0.80 | 0.81 | 0.79 | 0.79 | 0.83 | 0.82 |
| Fish, chicken, meat products: less often | 1.45 | 1.46 | 1.44 | 1.44 | 1.42 | 1.34 | 1.36 | 1.55 | 1.52 |
| Vegetables and fruits: less often | 1.11 | 1.13 | 1.16 | 1.16 | 1.17 | 1.17 | 1.20 | 1.04 | 1.05 |

**SOURCE:** table by the authors, based on SHARE survey data from 2013

**NOTES:** Statistical significance: *** p < 0.001; ** p < 0.01; *p < 0.05; p >= 0.05.

Reference groups: no sleep disorders; never smoked; no alcohol consumption in the last 3 months; daily intense physical activity; daily moderate physical activity; daily consumption of legumes, eggs, dairy products, fish, chicken, meat products and vegetables and fruits.

The order of adjustment for variables in the models: Model 1: lifestyle factors; Model 2: + age, birth cohort; Model 3: + national origin, place of residence; Model 4: + marital status, number of children; Model 5: + education, employment status: Model 6: + depressiveness, activity limitations, BMI; Model 7: + degree of crowdedness of childhood home; Model 8: + economic status in childhood; Model 9: + health status in childhood.

## SUMMARY

Based on a self-reported indicator from 2013, the average number of depressive symptoms among people aged 65 and older in Estonia was relatively high compared to the rest of Europe. Men's relative position was worse than in other countries, although women had a higher average number of depressive symptoms than men. At an even older age – 85 years and older – men in all countries reported having similar depressive tendencies, suggesting the workings of more universal factors contributing to depressiveness in men at this age. Just as depressiveness was generally more common among women than men, women also developed a depressive state more early in life: Estonian women reached the threshold indicating depressiveness in their 60s, whereas men only followed in their 80s.

After adjustment for all variables, Estonian men and women aged 65 and older were significantly more likely to experience depressiveness if they had sleep disorders or consumed alcohol infrequently (compared to non-drinkers). The relationship between sleep disorders and mental health is well-known: sleep disorders are considered one of the main symptoms of depression and depressiveness. However, our analysis indicated that the relationship between sleep disorders and depressiveness in older people can be attributed mainly to health-related activity limitations and past depressive symptoms. The important role of activity limitations is consistent with the theoretical framework according to which the functioning of society (both social and institutional) does not meet people's health needs (Verbrugge and Jette 1994). The relevance of past depressive symptoms, on the other hand, indicates the persistence of mental health problems that neither the healthcare sector nor the social environment have managed to prevent. Therefore, ways of improving mental health in older people should be based on a complex and comprehensive approach, taking into account the need to shape both the social and physical environment and advance general well-being.

**Ways of improving mental health in older people should be based on a complex and comprehensive approach, taking into account the need to shape both the social and physical environment and advance general well-being.**

Older people who abstain from alcohol often have pre-existing health conditions (Abuladze et al. 2020). In women, health factors also accounted for differences in experiencing depressiveness in the case of moderate physical activity. Possibly in contrast to other life stages and common recommendations, we found that physical activity in older age was highly dependent on existing health status. Various illnesses or health conditions limit everyday activities, participation in society and the upkeep of mental health. Therefore, by removing social and physical barriers that prevent people with various health conditions from participating in social life (Verbrugge and Jette 1994), we could see the positive effects of physical activity on alleviating or preventing depressive symptoms in older Estonian women.

In men, too, the differences in depressive symptoms were attributed to the characteristics of their current health status; however, it was primarily through the general quality of their diet. Therefore, the influence of dietary choice on the onset of depressiveness was actual-

ised through recent activity limitations and the previous experience of depressiveness: in the presence of these health problems, men neglected to consume certain nutrients, which in turn possibly had an adverse effect on their mental health. It is interesting to note that unlike in women, in men childhood conditions did not account for the differences in developing depressive symptoms later in life.

While experiences from the earlier stages of life were somewhat associated with mental health in older age, recent or current health status had the strongest influence on the association between lifestyle factors and mental health. The negative association that socioeconomic and health conditions in childhood had with sleep disorders – and thereby also with mental health – in old age was reduced by the socioeconomic conditions in later life. Yet the buffering was partial: the relationship between inequality experienced in childhood and health still carried over into the last decades of the life course. In line with previous findings, this was evident in women (van de Straat et al. 2020).

Although health-supporting habits and attitudes related to diet or physical activity may also persist from childhood (Hirvensalo and Lintunen 2011; Devine 2005), this association did not clearly emerge among Estonia's older people. By contrast, addressing more recent health-related activity limitations and mental health problems could improve physical activity in women and nutrition in men, thereby reducing depressive symptoms in older age.

Mental health outcomes in older age could be improved by removing social and physical barriers that restrict participation in society, preventing and alleviating depressive symptoms in older people in a timely manner, and improving the childhood conditions of future generations. Even though depressive symptoms are more prevalent in old age than in adulthood, mitigating and preventing them in Estonia should be done with more consideration of the socioeconomic and health-related inequality among older people. This means that mental health monitoring and health services could better take into account the backgrounds of different birth generations, and people with a more vulnerable life course could be targeted specifically.

**Various illnesses or health conditions limit older people in their everyday activities, participation in society and the upkeep of mental health.**

**Mental health outcomes in older age could be improved by removing social and physical barriers that restrict participation in society, preventing and alleviating depressive symptoms in older people in a timely manner, and improving the childhood conditions of future generations.**

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# 3 Psychosocial environments and mental well-being

**PHOTO:** Annela Samuel

# 3.0 Introduction

## Psychosocial environments and mental well-being

**DAGMAR KUTSAR**

### KEY MESSAGES

1. **In an increasingly complex and changing society, individuals' mental well-being depends on their ability to act both independently and together as a group.**
2. **Everyone's open and active participation and mutually respectful communication, at the community level (including family, school and work) and in society as a whole, is crucial for well-being and social cohesion.**
3. **Supportive childhood relationships in the family and at school, a lifelong ability to learn and adapt, and strong connections between generations support mental health and well-being into old age.**

### INTRODUCTION

In this chapter, we discuss mental health and subjective well-being in family, educational and work settings – that is, in psychosocial (relational) environments that people build every day with other people and society in general. According to the bioecological model (Bronfenbrenner and Morris 2006), individuals are both directly and indirectly related to the functioning of society at different levels, both contributing to it and being affected by it. For example, the subjective well-being of family members is related to their personal characteristics (e.g. vitality, health and special needs) and the communication skills that help them cope with family situations, at school, at work and elsewhere. People's actions are influenced by government policy (e.g. family, employment and education policies), the general social situation (e.g. the labour market, family development trends, educational opportunities, IT capabilities, the pandemic and anxiety about war) and support systems (e.g. services, social benefits and programmes, or community and voluntary activities).

## Well-being and social cohesion are created in psychosocial environments

People of all ages need supportive and caring people around them. According to Bowlby (1982), people need at least one close relationship for positive self-development to take place and to heighten their sense of security. However, it is even better to have more than one close relationship. An individual should also meaningfully identify with more than one psychosocial environment, because belonging to a family, school class, community, work collective, or a group of like-minded people or people who share the same hobby – that is, being connected to various parts of society – is a natural human need.

Humans have the ability to interpret and evaluate their experiences, but for this they need information, active participation and the opportunity to make choices within a framework of agreed rules and norms. In other words, people need to act together for common goals. This is critical with children: there is a widely held attitude that adults have the correct answers, so there is no need to ask children for their opinion. However, asking children may reveal unexpected and uncomfortable truths for adults. For example, as they get older, children in Estonian tend to say they like school less; Estonia is struggling to meet even the average level of liking school compared with other countries. Studies show that students appreciate it when their opinions are heard and taken into consideration, but they say this rarely happens at school. The same occurs in the workplace, where employees have only a limited say in how work is organised. The articles in this chapter show that, on such occasions, the stress level of both students and employees increases while their subjective well-being decreases (see Valk et al. and Kovaljov et al. in this chapter).

**It is good for well-being and mental health if the communicating parties are willing to cooperate for common goals and listen to and respect each other.**

**People's stress levels increase and their well-being decreases in situations where their opinion is not given enough consideration and their opportunities to contribute are limited.**

Different perspectives, personal vulnerabilities and resilience come together in psychosocial environments. It is good for well-being and mental health if the communicating parties are willing to cooperate for common goals and listen to and respect each other. However, the outbreak of the COVID-19 pandemic and the related general decline in subjective well-being demonstrated that we are all vulnerable and the future is less and less predictable (see Märtsin et al., Valk et al. and Kovaljov et al. in this chapter).

## Coping in an increasingly complex society

Maintaining social cohesion in the context of social inequality, growing global anxiety and unpredictability (e.g. the COVID-19 pandemic and war anxiety) tests people's ability to cope with and resist stress and increases the significance of caring

**Caring relationships in the family make it easier to cope with difficulties both at work and at school.**

relationships in the psychosocial environment. Although the family is the primary psychosocial environment for children and adults alike, primary psychosocial environments are not confined to relationships between household members but cover a wider network of relationships, and also relate to education and professional life. Caring relationships in the family make it easier to cope with difficulties both at work and at school. To cope with unexpected events in the labour market, people need to be motivated to engage in lifelong learning. Parents who separate must acquire new parenting skills in order to be good parents in the family's extended network of relationships. However, older people who have built and contributed to relationship networks over the course of their life may experience greater social connectedness and a higher level of subjective well-being (see Sakkeus et al. in this chapter). The pandemic blurred the boundaries between family, work and school and decreased overall life satisfaction (see Kovaljov et al. in this chapter). The patterns of behaviour during the pandemic hold lessons for the future, but the question remains: how can we use these sensibly and in ways that support well-being?

**The rise of 'me' culture and external expectations of success is characteristic of a complex society.**

**Older people who have developed and contributed to relationship networks throughout life may experience greater social inclusion and a higher level of subjective well-being.**

The rise of 'me' culture and external expectations of success is characteristic of a complex society. It is reflected in people's ability to act independently or as a group and a tendency to compare themselves with others, which is intensifying in different ways. An example of exercising agency is the increased competence for independent decision-making in the context of new, more diverse forms of work (see Kovaljov et al. in this chapter). During the COVID-19 pandemic, students with better self-management skills appeared to cope better with the sudden transition to distance learning (see Valk et al. in this chapter). The downside of 'me' culture is insufficient life skills for cooperation, including unequal treatment, non-inclusion, and bullying in the family, at school or at work, which threatens the well-being and mental health of those involved (see Märtsin et al., Valk et al. and Kovaljov et al. in this chapter).

Comparing oneself with others and expectations of success are conspicuous in education, where academic success is seen as an indicator of the social goodness of a future generation of adults. Thus the time the child spends studying (including homework and extracurricular activities) often exceeds the length of an adult's working day. Subjecting children to expectations of success from an early age is a threat to their mental health and well-being. Comparing academic achievement in general education, both at the national level and internationally, divides students, schools and countries hierarchically and emphasises

A ten-year-old child: 'You don't have to be the best at everything, but you have to work to be the best at some things. I will be successful if I study and work hard.'

An eight-year-old child: 'Some people need help to succeed.'

**SOURCE:** Interviews with children at Edukonverents, 2015

**Excessive management of children's time at the expense of free playtime limits the development of their agency and creativity.**

the inequality of students, while children's subjective well-being at school decreases with age, both in Estonia and internationally (see Valk et al. in this chapter).

Miller and Almon (2009) claim that excessive management of children's time in preschool education at the expense of free playtime limits the development of their future capacity for autonomy and creativity. They point to research showing that children who have free playtime have better linguistic and social skills, are more empathetic, have a more vivid imagination, and understand other people better than those who have no free playtime. They are also less aggressive, have better self-control and are sharper thinkers. Playing with peers also eases stress in anxious children. The stress-reducing effect of playing was evident during the state of emergency during the first wave of COVID-19. Both children and adults in families spent more time playing games together at home than before, increasing their sense of security and unity in the family (see Märtsin et al. in this chapter).

**The family acts as a lifelong network, creating a safety net for the family members and helping them develop life skills**

A couple relationship is the most important source of well-being in a person's life, and the presence of children adds to it. Expectations of closeness, safety and cooperation in the family are high despite the diversity of family structures in Estonian society and the subjective blurring of the definition of family, especially in the case of children. However, in an ageing society, children are highly valued, which challenges adults to be good parents even if they do not live with their children. According to children's self-assessment, girls are more sensitive to changes in the family structure than boys. Living in a family with a stepparent can affect subjective well-being, especially for girls (see Märtsin et al. in this chapter).

A normative shift has taken place in society: awareness of the importance of equal parenting is strengthening. Several family policy measures have been developed, including services that help reduce the burden of care within the family. Studies show that the older generation seeks to maintain their agency for as long as possible because it supports well-being. However, this tendency

**Family networks more often extend beyond national borders, putting space between different generations and hindering intergenerational learning.**

has highlighted a new aspect in couple relationships in old age – the need to care for a loved one, which affects well-being. Women living alone without the burden of caregiving report having higher levels of well-being than men living alone (see Sakkeus et al. in this chapter).

It is unusual for three generations in Estonia to live together in one household. Due to labour migration and diversifying cultural backgrounds, families are becoming more international. This means that family networks more often extend beyond national borders, putting space between different generations and hindering intergenerational learning. Fewer 'country grandmas' are at hand to share their wisdom, as more and more grandchildren live abroad and see them maybe once or twice a year. The importance of the older generation in children's lives became particularly evident during the COVID-19 state of emergency, when children missed their grandparents and were concerned about their health (see Märtsin et al. in this chapter).

## Diversifying work life creates new dilemmas to be solved

In a complex society, work life and work-related psychosocial environments of relationships and communication (e.g. virtual, physical, local, international and global) tend to diversify. Analysing the COVID-19 situation identified several dilemmas characteristic of this new era. These include remote work and independent decision-making versus an employee's reliability in the eyes of the employer, or increasing job insecurity versus a sense of belonging (see Kovaljov et al. in this chapter). Even with

**Employment supports well-being: work keeps people connected to society and helps maintain social cohesion.**

*Back in the day, parents were probably not in the habit of weighing or analysing how one thing or another affected their child or what was going on deep inside their soul. It's a pity. Nowadays people are more aware, but the problems they face are also more numerous and complex.*

*My grandmother was simply a wonderful person. By setting an example, she taught me to work hard, have an optimistic and fair outlook on life and people, and help others. I think back at our time together with great fondness and gratitude.*

**SOURCE:** notes from the University of Tartu lecture course 'Children and childhood'

In order to survive and exist, we need 'existential intelligence' in our private life, working life and social life – that is, the ability to find our way forward and navigate the choices arising from complex life situations. Lifelong learning is the reality of today. The school system does not pronounce final truths; personal, social and professional edification is a lifelong process. People learn in different contexts and new situations, through continual self-discovery, self-belief and self-valuing, and by communicating with others. They learn to live a healthy life in an unhealthy world and to contribute to creating a healthier society.

**SOURCE:** Hildebrandt 2009

the pandemic subsiding, more and more companies are adapting work arrangements to be more flexible, offering opportunities to work in the office or remotely. With hybrid work, the psychosocial work environment inevitably changes as well.

Studies show that, compared to not working, employment supports well-being: work keeps the individual connected to society and helps maintain social cohesion (see Kovaljov et al. in this chapter). The workplace also fosters self-development and increases everyone's self-efficacy. Changes in the labour market are obviously not limited to technological improvements but are also manifested in changing relationships and lifestyles. Every new generation adds diversity and builds richer psychosocial environments.

**Lifelong learning supports subjective well-being and maintains social cohesion. This is especially important during times of rapid change when loneliness can start dominating a person's life.**

## Lifelong learning supports subjective well-being and social cohesion

People's motivation to learn stems not only from their innate curiosity but also from the demands on parenting skills in family life, the need to acquire new skills in work life and the expansion of educational opportunities in society. People learn by participating in different areas of life and contributing to various psychosocial environments. Learning takes place everywhere and in many forms: formal, non-formal and informal.

Lifelong learning supports subjective well-being and maintains social cohesion. This is especially important during times of rapid change when loneliness can start dominating a person's life (e.g. after losing a job, during self-isolation due to a pandemic, or as a result of diminishing intergenerational relationships and solidarity). A discourse of 'education for well-being' is gradually gaining currency, whereby academic achievement and interest in learning support both independent action and collective action towards common goals.

We must remember that in an unequal society, children and young people are in an unequal position in relation to one another, both in terms of their personal characteristics and in terms of how favourable the surrounding environment is for them. Glass ceilings and floors tend to perpetuate their social position and circumscribe their opportunities and well-being. Children and young people need support in creating and realising opportunities in their lives – breaking through the glass ceiling (e.g. achieving their goals) and avoiding falling through the glass floor (e.g. dropping out of school). The psychosocial environment of relationships at school is particularly important for mental health and well-being. Bullying, both among students and between students and teachers, threatens the well-being of all parties and has long-term consequences for mental health (Soo and Kutsar 2021).

Hobbies are accompanied by a psychosocial environment that supports children's well-being in addition to providing a complex development challenge (see Valk et al. in this chapter). Hobbies are important for people's well-being at any age. They reinforce a sense of belonging to a community and a sense of cultural history and meaning, as well as providing opportunities for creativity. Hobbies are an example of cross-sectoral prevention work benefitting mental health, which does not qualify as mental health intervention.

**Hobbies are important for people's well-being at any age. They reinforce a sense of belonging to a community and a sense of cultural history and meaning, as well as providing opportunities for creativity.**

*Therefore, in contemporary society we are all artists – knowingly or not, willingly or not, whether we like it or not. We are life artists because we all are expected to give our lives purpose by using our own skills. I use the term 'artist' because being an artist involves having the capacity to give form and shape to what would otherwise be formless and shapeless; to impose order on what would otherwise be chaotic, haphazard and random.*

**SOURCE:** Brierley 2012, p. 82

## SUMMARY

We are connected to each other through psychosocial environments. As society becomes more complex and the future less predictable, these environments are increasingly sophisticated – families as functional networks, work relationships in their different forms and modes, and the diverse education landscape. Psychosocial environments are created collectively, acting together. In education, it is very important to focus on the learning environment and the respectful treatment of students just as much as on academic achievement, and to facilitate participation in educational life in general. For those who are absent from the labour market, new ways must be found to bring them back. It is also important to recognise the meaningful work done by people of different ages in terms of maintaining well-being and mental health.

In order to notice emerging social problems and find new solutions to reduce existing problems, it is important to monitor the well-being of people of different ages in psychosocial environments that are meaningful to them. Instead of intervening only after mental health problems have surfaced, greater emphasis must be placed on prevention, including the development of communities that support social cohesion.

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# 3.1
# Family relationships and family members' self-reported mental health and well-being

MARIANN MÄRTSIN, OLIVER NAHKUR AND LIILI ABULADZE

## KEY MESSAGE

**Estonian family structures have diversified over time. However, family members' mental health and well-being do not depend on family structure alone. The relationships between family members are more important than family composition. With its diverse family structures, Estonian society needs both formal and informal networks for families to ensure the availability of prevention and intervention strategies that support mental health and well-being for all families and family members.**

## INTRODUCTION

Every person is part of a family. We are connected with our family members through family relationships, even if we do not live with them or meet them every day. The family is a child's primary context for socialisation, where they learn the meaning of coexisting with others. From family members, the child learns how to participate in a relationship and how to recognise and share their joys and sorrows. Relationship patterns acquired from the family are tacitly passed down to future generations.

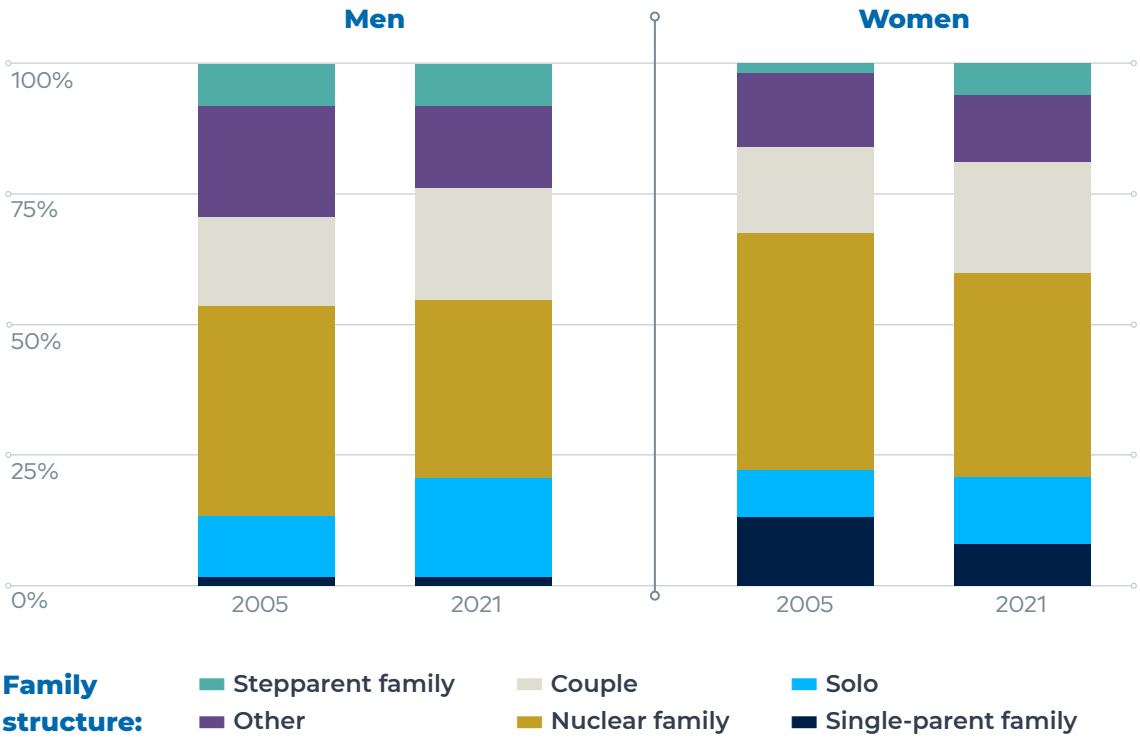
Today's families are characterised by diverse family structures – divorce and repartnering. The blended family, where at least one parent has previously been in a couple relationship and the family includes children from their previous and current relationships, is not an unusual family structure. A change in family structure leads to changes in the relationships between all family members and affects how they feel within and outside the family. At the same time, a change in family structure does not necessarily cause family relationships to deteriorate. It often leads to better-functioning relationships between family members (e.g. an abusive parent moving out). In any case, a change in family relationships requires adjustment and a conscious effort to function better.

**Today's families are characterised by diverse family structures, requiring adjustment and a conscious effort to function better.**

International studies show that family relationships significantly affect the well-being of adults and have a decisive role in life satisfaction in Estonia and other countries where individuals have a great deal of freedom when it comes to forming couple relationships, becoming a parent or deciding on the number of children they want to have (Margolis and Myrskylä 2013). Among the various aspects of life satisfaction, positive relationships with family members are not in the best shape in Estonia. Compared with other European countries, adults in Estonia have fewer people they can lean on in times of need (Ruggeri et al. 2020). Family relationships also have a significant impact on children's life satisfaction. If the child cannot understand why the parents are divorcing and forming a new family, and the child is not involved in decisions about their future, this can negatively impact the child's well-being (Nahkur and Kutsar 2021).

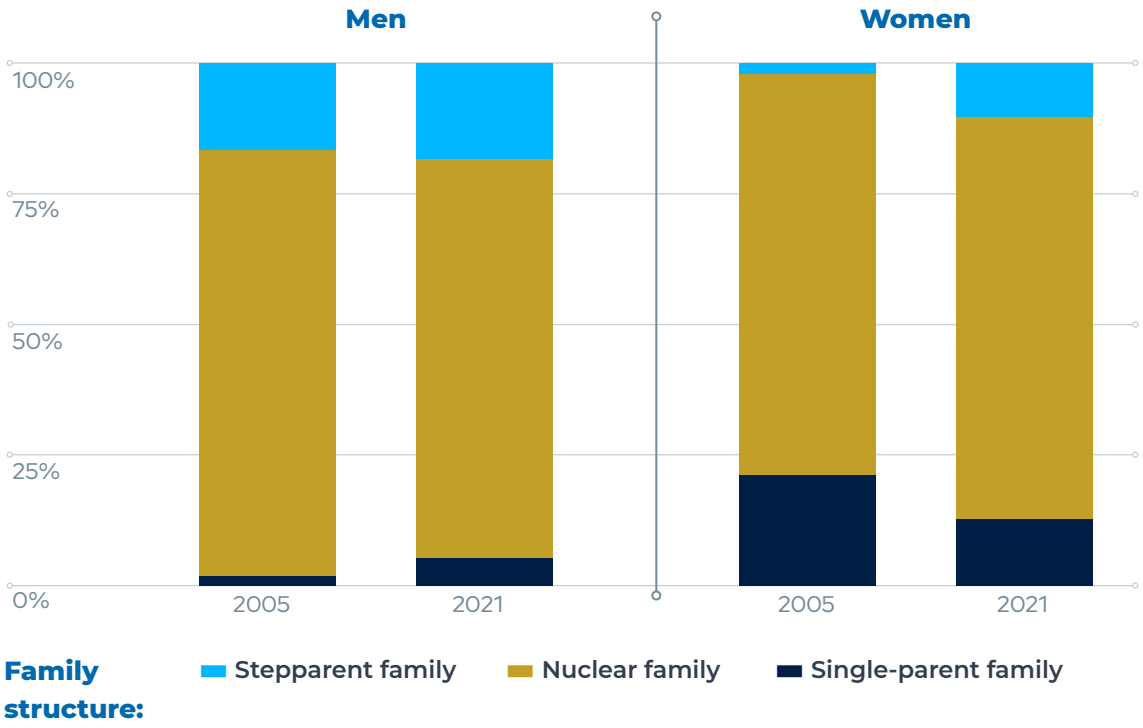
In this article, we seek answers to three questions: (1) How have Estonian family structures changed over time? (2) How are the mental health and well-being of children and adult family members in different family structures related to satisfaction with family relationships? (3) How do children and adults living in different family structures evaluate their mental health and well-being? We also discuss how the early stages of the COVID-19 pandemic affected the mental health and well-being of children and parents in Estonia. We look at mental health and well-being primarily in terms of overall satisfaction with life. Here we define family as people who live together and are in a couple relationship or parental relationship. This includes adults in a couple relationship with or without children, single parents living with one or more of their children but whose partner does not live with the family, as well as families with children and a stepparent.

**Figure 3.1.1.** Distribution and change of family structures among adults aged 18–60




**SOURCE:** figure by the authors, based on the Estonian Generations and Gender Survey data from 2005 and 2021–2022

**Figure 3.1.2.** Distribution and change of family structures among adults aged 18–60 living with children under 18




**SOURCE:** figure by the authors, based on the Estonian Generations and Gender Survey data from 2005 and 2021–2022

## Estonian family structures have diversified over time

To understand the changes in Estonian family structures in recent years, we used the 2005 (N = 5,642) and 2021–2022 (N = 9,088) data from the Estonian Generations and Gender Survey, which is a representative study of adult Estonian residents aged 18 to 60. The patterns of family formation in Estonia have changed significantly over time. At the beginning of the 20th century, 70% of young people started their unions by marrying, but among the birth cohorts of the 1960s and 1970s, more than 90% of couples started their unions with cohabitation (Puur and Rahnu 2011). The trend of childbearing not being confined to marriage appeared in Estonia already in the 1960s, when 14% of children were born out of wedlock. The same trend continues today as more than half of children are born to cohabiting parents.

The diversification of family structures can also be seen in the change in the share of single-parent and stepparent families. The majority of Estonian families consist of two parents and their biological child or children (Steinbach et al. 2016). At the same time, the share of people living alone and, to some extent, people living in families with a stepparent has increased in Estonia over time (see Figure 3.1.1). In 2021, 76.9% of all families with children (N = 3,488) in Estonia were those with two birth parents, 9.7% were single-parent families, and 13.4% were stepparent families. Compared to 2005, the share of both birth-parent and single-parent families has somewhat decreased (by 1.5% and 5.2%, respectively), while the share of people living in stepparent families has increased (6.7%),

**Based on self-reported life satisfaction, girls' life satisfaction is more affected by poor family relationships as they get older. Girls' greater sensitivity and vulnerability is probably due to the persistence of traditional gender roles in child-rearing.**

especially among women, for whom the increase is almost tenfold (see Figure 3.1.2). In the same period, the share of families with a single mother decreased by more than one-third, while the share of families with a single father more than doubled. It appears that after a previous couple relationship or marriage ends, women who raise children alone may have less difficulty finding a new partner than men who raise children alone.

The proportion of stepparent and single-parent families in Estonia is one of the largest in Europe. With its high proportion of stepparent families, Estonia is similar to other Eastern European countries. And its high proportion of single-parent families makes Estonia similar to Northern European countries (Steinbach et al. 2016).

## Family relationships affect children's and parents' life satisfaction

In evaluating adult family members' satisfaction with life and family relationships (18–64 years old; N = 2,466), we relied on the 2003–2016 data from the European Quality of Life Survey (EQLS), which is a representative study of the Estonian adult population, using the indicators of overall life satisfaction[1] and satisfaction with family life[2] respectively. We also studied the quality of the relationship between children and parents[3] and the support provided to one another in the family,[4] including how these aspects of family relationships affect overall life satisfaction.

The analysis indicates that family relationships play an important role in the life satisfaction of adult family members. The more satisfied one was with family relationships, the higher their evaluation of life satisfaction. This positive association is more apparent in the case of single parents but also applies to parents in a couple relationship. It appeared that across the different aspects of family relationships, only the parents' desire to devote more time to their child was linked to life satisfaction. Again, this was more apparent in the case of single parents than parents in a couple relationship. The greater the single parent's desire to devote time to their child, the lower their overall life satisfaction. Such results suggest that single parents realise the importance of and value their role in raising children but also feel that by themselves they cannot do everything they want to do. This perceived imbalance between their abilities and society's expectations affects the overall life satisfaction of single parents.

When analysing children's satisfaction with life and family relationships, we relied on the 2018 data from the International Survey of Children's Well-Being[5] (ISCWeB) for 10- and 12-year-old children, using the indicators of overall life satisfaction[6] and satisfaction with family members[7] respectively. For 11-, 13- and 15-year-old children, we used the 2018 data from the study of Health Behaviour in School-Aged Children (HBSC), where life satisfaction was evaluated on a 10-point ladder[8] and satisfaction with family relationships was measured as an overall assessment of the frequency of nine joint family activities.[9] In addition, we studied the quality of the relationship between child and parent,[10] the safety of the family environment[11] and family members' support for one another,[12] including how these affect life satisfaction. Both studies have a representative

sample for the respective age group in Estonia (ISCWeB 10-year-olds N = 1,013 and 12-year-olds N = 1,079; HBSC 11-year-olds N = 1,570, 13-year-olds N = 1,607 and 15-year-olds N = 1,550).

Satisfaction with family relationships impacts children's life satisfaction differently depending on age, gender and family structure. We compared children living in a family based on whether they were living with two birth parents, a birth parent and a stepparent, or a single parent. Although there are some age-related differences among family structures, the general trend is that family relationships play a more critical role in life satisfaction for children living in a family with a stepparent. Gender comparisons also show that, by age, the impact of family relationships on life satisfaction differs somewhat across family structures. However, the general trend is that family relationships are tied to life satisfaction more among girls, who become vulnerable to poor family relationships as they get older.

**People in a couple relationship, either with or without children, are significantly more satisfied with family life than single parents or people living alone, especially men. A person in a couple relationship is significantly more likely to get help from a family member or relative in case of mild depression and a need to talk.**

1 All things considered, how satisfied would you say you are with your life these days? 1 – very dissatisfied ... 10 – very satisfied.

2 How satisfied are you with your family life? 1 – very dissatisfied ... 10 – very satisfied.

3 As measured with the following two questions: (1) On average, how many hours per week are you involved in any of the following activities outside of paid work? Caring for and/or educating your children. (2) Could you tell me if you spend as much time as you would like to in each area, or if you wish you could spend less time or more time in that activity? Caring for children or grandchildren: 1 – spend less time; 2 – spend as much time as I currently do; 3 – spend more time.

4 From whom would you get support in each of the following situations? For each situation, choose the most important source of support. If you were feeling a bit depressed and wanting someone to talk to: 1 – a member of your family / relative; 2 – a friend, neighbour or someone else who does not belong to your family or relatives; 3 – a service provider, institution or organisation; 4 – nobody (only options 1 and 4 were used in the analysis).

5 See https://isciweb.org/ Data collection and the analysis presented here were supported by the Estonian Research Council grant (PRG700).

6 How satisfied are you with the following in your life? Satisfaction with life as a whole: 0 – not at all satisfied ... 10 – totally satisfied.

7 How satisfied are you with the people that you live with? 0 – not at all satisfied ... 10 – totally satisfied.

8 In general, where on the ladder do you feel you stand at the moment? 0 – worst possible life ... 10 – best possible life.

9 Overall frequency of joint family activities: 1) watching TV or videos together; 2) playing indoor games together; 3) playing computer games together; 4) eating together; 5) going for a walk together; 6) visiting different places together; 7) visiting friends or relatives together; 8) doing sports together; 9) sitting down and having discussions together. 1 – every day; 2 – most days; 3 – about once a week; 4 – less often; 5 – never.

10 ISCWeB: 'There are people in my family who care about me'; 'My parents/carers listen to me and take what I say into account'; HBSC: 'How easy is it for you to talk to your (step)mother/(step)father about things that really bother you?'

11 ISCWeB: 'I feel safe at home'; HBSC: 'Have you ever argued or fought with your parent when he/she was drunk?'; 'Have you ever heard your parents fighting when at least one of them was drunk?'

12 ISCWeB: 'If I have a problem, people in my family will help me'; HBSC: arithmetic average of the following statements: 'My family really tries to help me'; 'I get emotional support from my family'; 'I can talk about problems with my family'; 'My family is willing to help me make decisions'.

The importance of family relationships in children's life satisfaction is also evident when looking at various aspects of the quality of family relationships. Among 12-year-old children, the importance of these aspects is greater in the life satisfaction of children raised in a family with two birth parents or a stepparent, and somewhat less in the case of children raised by a single parent. For 12-year-old children living in a family with two birth parents, life satisfaction is most strongly related to satisfaction with the people they live with. For children living with a stepparent, the strongest factor is feeling safe, and for children living with a single parent, it is the child's perception of care in the family. Among 13- and 15-year-old children, aspects of the quality of family relationships best explain the life satisfaction of girls and 15-year-old children living with a stepparent.

Girls' greater sensitivity and vulnerability in the context of family relationships is most likely due to the persistence of traditional gender roles in child-rearing. Such findings raise questions about girls' vulnerability in family relationships vis-à-vis their role as future mothers and the possibilities for boys as future fathers to shift towards more open relationships with their future partners and children.

## Adults in a couple relationship have higher life satisfaction

The existence of a couple relationship and parenting relationship plays an important role in adults' life satisfaction. Out of all family structures, parents in a couple relationship have the highest life satisfaction, and people living alone and single parents have the lowest, especially women (see Figure 3.1.3). However, compared to other countries in the European Union, the life satisfaction of Estonian parents in a couple relationship is rather low or average, while the life satisfaction of Estonian single parents is average.

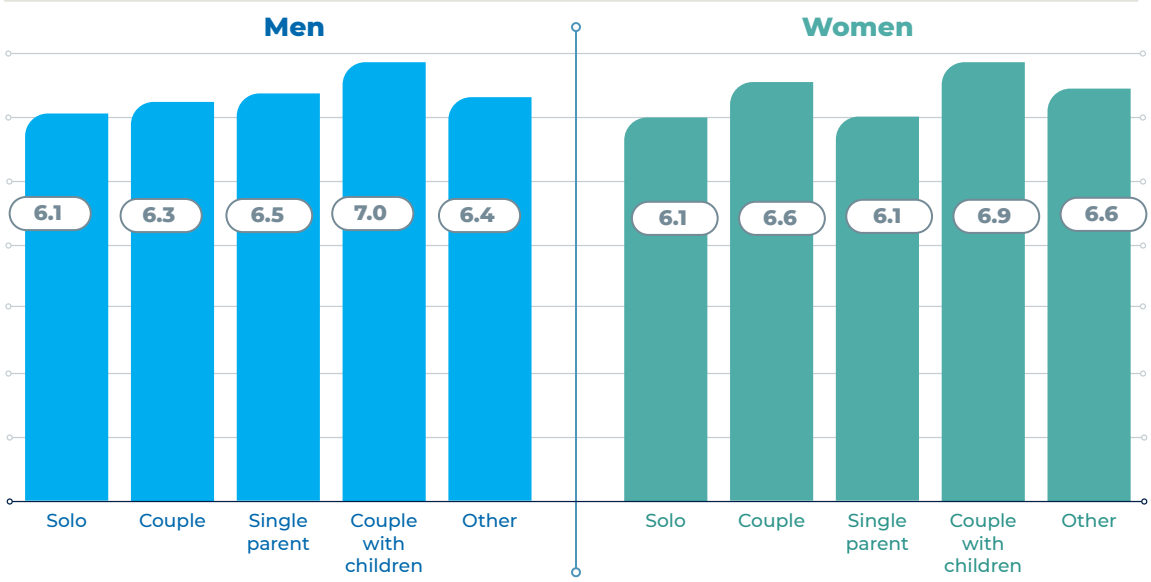
Having a couple relationship and/or being parents also plays a role in adults' satisfaction with family life. People in a couple relationship, either with or without children, are significantly more satisfied with family life than single parents or people living alone, especially men

**BE AWARE OF THE SIGNS OF POSTPARTUM DEPRESSION**

Becoming a parent is usually seen as something joyful and fulfilling. Yet studies estimate that 8–17% of new mothers and 7–9% of new fathers experience postpartum depression during the first year of their child's life, which puts both the child's and the parent's health, well-being, and development at risk. Typically, a parent suffering from postpartum depression experiences anxiety, irritability, guilt, fatigue, and a lack of energy and interest. All this makes it difficult to take care of the newly born child and oneself. One of the biggest predictors of postpartum depression in fathers is postpartum depression in the mother. Lack of a support network to help new parents is also among the risk factors. Therefore, it is important to pay special attention to family relationships before and after the birth of a child – to improve strained relationships, offer help to one another, and be ready to accept and rely on others for help.

**SOURCE:** Pedersen et al. 2021

**Figure 3.1.3.** Average life satisfaction (on a scale of 1–10) in adults by family structure and gender




**SOURCE:** figure by the authors, based on the 2016 data from the European Quality of Life Survey (EQLS)

(see Figure 3.1.4). Moreover, it is significantly more likely that a person in a couple relationship can get help from a family member or relative in case of mild depression and a need to talk.

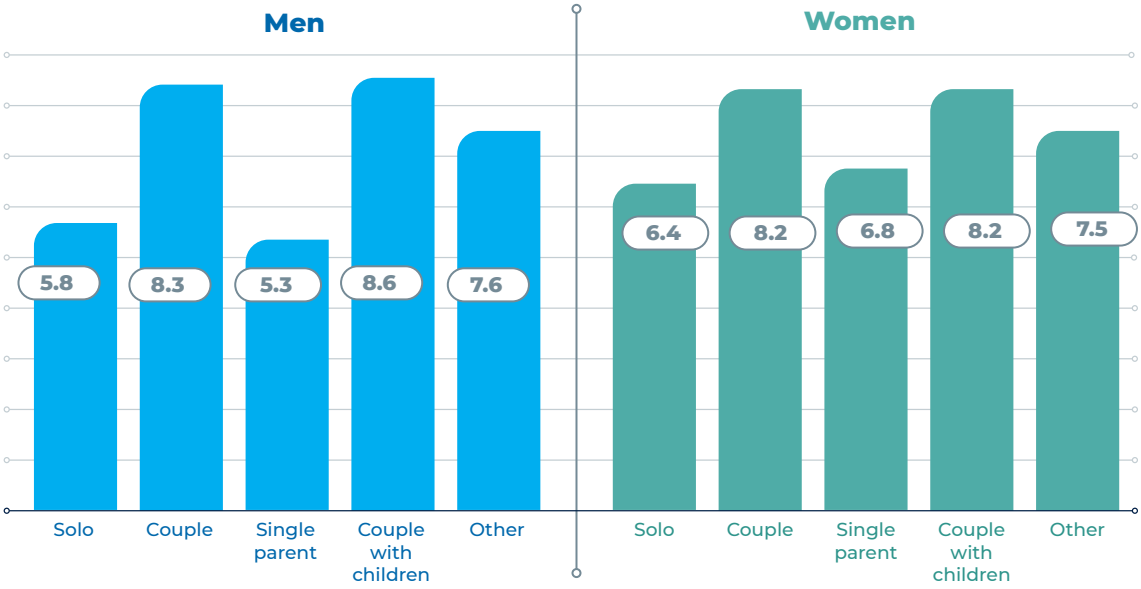
Regardless of the presence of children, Estonian adults aged 25–34 in a couple relationship are significantly more satisfied with life than adults living alone. This suggests that creating and maintaining a relationship in young adulthood supports life satisfaction. At the same time, among 35-to-49-year-olds, parents in a couple relationship are significantly more satisfied with life than people in any other family structure. This indicates the importance of having children in mid-life.

A comparison of men's and women's life satisfaction shows that parenthood increases life satisfaction for men in a couple relationship more than for women in a couple relationship. At the same time, women who are in a couple relationship and have children are significantly more satisfied with life than single mothers. Women's life satisfaction is also higher if they are in a relationship without children than if they are living alone without children.

Satisfaction with family life decreases with age, and women's satisfaction with family life is generally somewhat higher than men's. Women aged 35–49 are the exception: they are significantly less satisfied with family life compared to men of the same age. Moreover, in case of mild depression and a need to talk, they estimated the likelihood of receiving help from a family member or relative to be significantly lower than men did. On the one hand, this finding may indicate a discrepancy between women's expectations and the reality regarding equal parenting. On the other hand, it may indicate a discrepancy between women's self-esteem and society's expectations about them handling motherhood.

**Women's perceived lack of support from family is concerning. It indicates that many adult family members in Estonia may not get support from their family during the most difficult periods of their lives.**

**Figure 3.1.4.** Average satisfaction with family life (on a scale of 1–10) in adults by family structure and gender




**SOURCE:** figure by the authors, based on the 2016 data from the European Quality of Life Survey (EQLS)

Women's perceived lack of support from family is concerning. It indicates that Estonian adult family members may not get support from their family during the most difficult periods of their lives.

## Living with or separately from parents plays a role in adolescents' satisfaction with life and family relationships

Family structure also has an impact on children's satisfaction with life and family relationships; it becomes especially important when the child reaches adolescence. This trend is more pronounced in Estonia than in other countries in Eastern and Northern Europe (see Figures 3.1.5 and 3.1.6). Among 10-year-olds, life satisfaction is not significantly related to family structure. However, after reaching adolescence, children living with two biological parents are more satisfied with their lives and family relationships than children living with a stepparent or a single parent. Compared to children living with both of their birth parents, 12-year-old children living with a single parent or a stepparent were significantly less satisfied with the people they live with. Also, they significantly less agree that parents listen to them and take their opinions into account or provide support in case of a problem. Twelve-year-old children living in a family with a stepparent perceive their family members as caring significantly less often than children living in a family with two birth parents or a single parent, and they consider their home less safe than children living with birth parents.[13] Both 13- and 15-year-old children living with stepparents take part in joint activities with their family significantly less than children living with two birth parents. However, children living with two birth parents feel they have a more supportive atmosphere at home than do children living in other family structures. These findings clearly indicate the need to create and maintain a supportive environment and support net-

13 See the findings based on the same analysis in detail here: https://arenguseire.ee/pikksilm/laste-heaolu-tulevik/.

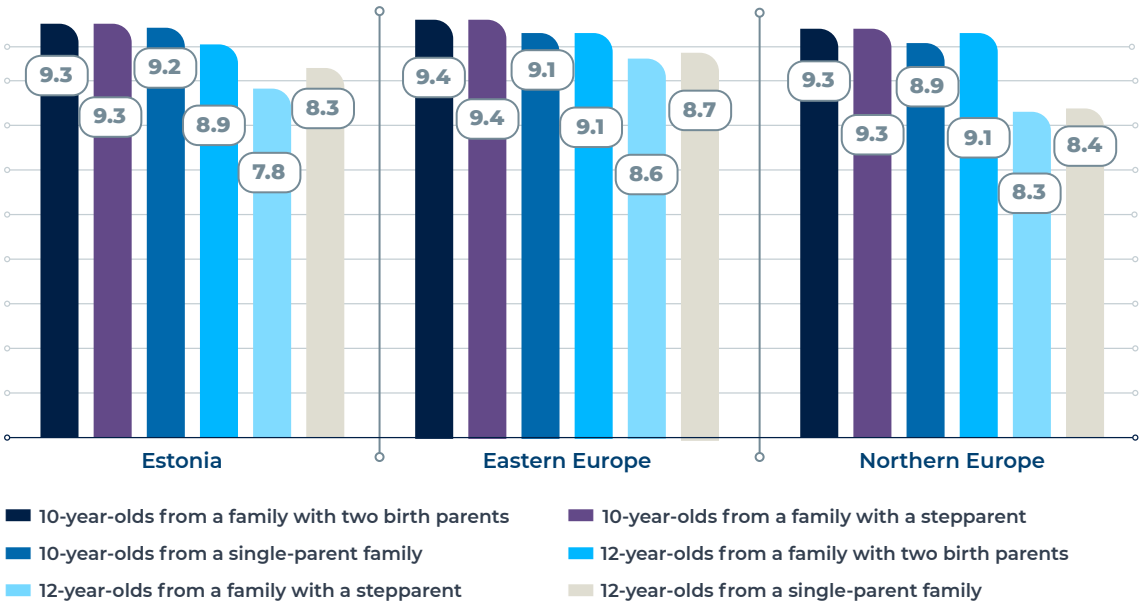
work for children, even when the family structure changes. Opportunities to express their joys and sorrows and spend time with family are especially critical when children reach adolescence.

As age increases, satisfaction with life and family relationships decreases the most among girls living in a family with a stepparent or a single parent. Almost 73% of 10-year-old girls living with a stepparent and 72% of girls living with a single parent gave their life satisfaction maximum points (10 on a 0–10 scale). However, among 12-year-olds, only 29% and 39%, respectively, gave their life satisfaction the highest assessment. The study of Health Behaviour in School-Aged Children (HBSC 2018) also confirms that family structure plays a more important role in girls' life satisfaction. As age increases, the assessments related to family relationships decrease the most among girls living in a family with a stepparent.

Recent in-depth studies show that losing their home and friends and adjusting to a new place of residence – including having to find new friends, losing and gaining family members, navigating new family relationship patterns and dealing with changes in family traditions – are some of the challenges that children face after their parents separate (Ilves 2021). Diversifying family structures create the need to support parents in adjusting with the role of a single parent or stepparent and in creating family networks that support the relationships and well-being of children and parents. One option is what is known as bird's nest parenting, which allows children to continue living in their home and maintain contact with both parents, who take turns living with them in their former family home (Lehtme and Toros 2019).

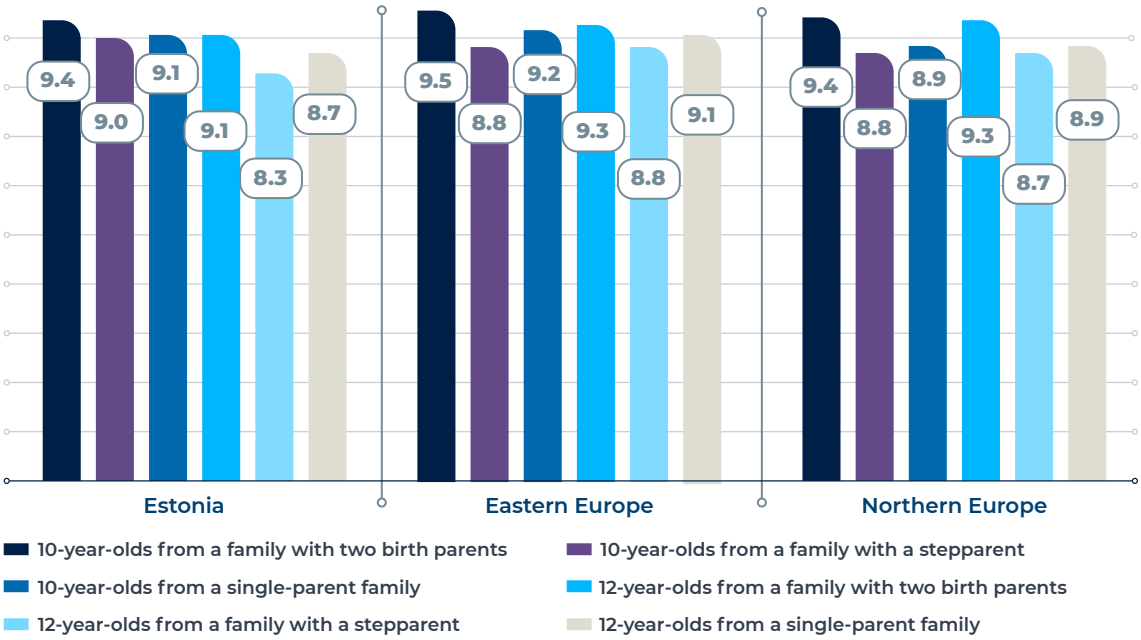
**Family structure affects children's life satisfaction and satisfaction with family relationships. It becomes particularly significant in adolescence, as children living with two biological parents are more satisfied with their lives and family relationships than children living with a stepparent or single parent.**

**Figure 3.1.5.** Average assessment of overall life satisfaction (on a scale of 0–10) for 10- and 12-year-old children by family structure in Estonia, Eastern Europe (Hungary, Poland, Romania) and Northern Europe (Finland, Norway)




**SOURCE:** figure by the authors, based on the 2018 data from the International Survey of Child Well-Being (ISCWeB)

**Figure 3.1.6.** Average assessment of satisfaction with family members (on a scale of 0–10) for 10- and 12-year-old children by family structure in Estonia, Eastern Europe (Hungary, Poland, Romania) and Northern Europe (Finland, Norway)




**SOURCE:** figure by the authors, based on the 2018 data from the International Survey of Child Well-Being (ISCWeB)

**Diversifying family structures create the need to support parents in adjusting with the role of a single parent or stepparent and in creating family networks that support the relationships and well-being of children and parents.**

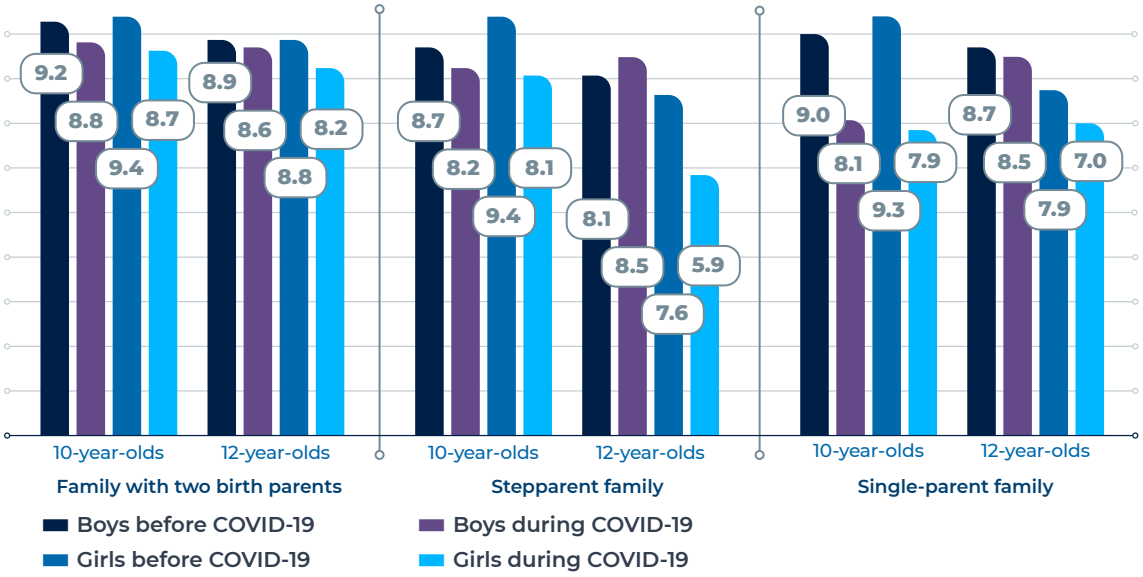
### A CHILD BETWEEN TWO HOMES

*It was a difficult moment when I had to leave my home, it was a very difficult moment for me … I cried every day. I still had to get my things. I can't be there every day anymore, so, yeah … moving out was very difficult for me.*

This is how Kira (not her real name), a girl interviewed by Eliise Ilves in 2021 as a part of her master's thesis, describes her experience of living between two homes.

**SOURCE:** Ilves 2021

**Figure 3.1.7.** Average assessment of overall life satisfaction (on a scale of 0–10) in 10- and 12-year-old boys and girls before the COVID-19 pandemic and during COVID-19, by family structure




**SOURCE:** figure by the authors, based on data from the International Survey of Child Well-Being (ISCWeB 2018) and the ISCWeB Supplement Survey (spring 2021)

## Adults experienced more stress, and children's satisfaction with life and family relationships decreased, during the coronavirus pandemic

The COVID-19 pandemic increased the perceived stress levels among Estonian adults. In October 2020, according to the Government Office's study on COVID-19, 25% of those surveyed had been under great or very great stress or tension; in March 2021, that percentage increased to 33%. According to some analyses, the percentage of the Estonian adult population who experienced stress increased to as much as 52% (Reile et al. 2021). According to a survey conducted by Turu-uuringute AS on behalf of the Ministry of Social Affairs, interviewing people who have children in preschool, primary school or lower secondary school, 44% of parents considered the living arrangements resulting from the state of emergency following the COVID-19 outbreak to be stressful and burdensome. Families with children of preschool or primary school age and families with three or more children perceived living arrangements during the emergency as especially burdensome. According to in-depth studies, families perceived social isolation as the most difficult aspect of the COVID-19 pandemic period. It caused misunderstandings in families and led to conflicts (Kopõtin 2021). The state of emergency made it difficult for parents to coordinate remote work and children's distance learning and to set limits for various activities, especially the use of smart devices (see also Kovaljov et al. in this chapter and Siibak et al. in Chapter 4). Uncertainty about the future, in some cases also the family's deteriorated economic situation, and the long, intensive time that families were forced to spend together caused frustration in both parents and children.

A special survey on the well-being of fourth- to sixth-grade children (N = 1,310) conducted in the spring of 2021 revealed that children's life satisfaction decreased during the COVID-19 period, especially among girls (see Figure 3.1.7). Children

**During the pandemic, children's satisfaction with family relationships generally decreased. The time spent with family helped bring children and their parents closer, but it also caused tensions between family members.**

living with a stepparent or a single parent experienced a greater decrease in life satisfaction during the pandemic than did peers of the same age and gender living with two birth parents.

During the pandemic, children's satisfaction with family relationships decreased. The changes were more apparent in children living in a family with a stepparent and, to a lesser extent, in children living with a single parent. Girls' satisfaction with family relationships decreased noticeably. Above all, during the pandemic, girls living with a stepparent or a single parent missed their relatives (e.g. grandparents or a parent who lives or works away from home) more than boys did. How well children and young people adapted to the new situation largely depended on how close they were with their family before the emergency and how well their family coped with the effects of the pandemic (Kutsar et al. 2022). The time spent with family helped bring children and their parents closer, but it also caused tensions between family members (Kopõtin 2021). The analysis by Kutsar et al. (2022) revealed that about half of 10-to-13-year-old children were very strongly attached to their family, feeling great care and consideration for one another, and there was an increase in closeness within family relationships during the pandemic. About a fifth of 10-to-13-year-old children had a weak attachment to their family. During the second wave of the pandemic (spring 2021), children felt more secure and feared the pandemic less than in the first wave. At the same time, fatigue from being around family members all the time and concern about not seeing friends worsened (Kutsar and Kurvet-Käosaar 2021). Movement restrictions created challenges and were an additional source of stress for children moving between their parents based on visitation arrangements (Ilves 2021).

### THE COVID-19 PANDEMIC STRAINED FAMILY RELATIONSHIPS

The COVID-19 pandemic was difficult for families. The long, intensive time that families were forced to spend together during the state of emergency created new strains on family relationships. In addition to increasing stress levels, physical and psychological domestic violence occurred slightly more often during the pandemic period. In April 2020, 4% of the participants' former or current family members had engaged in physical or psychological violence the month before. In April 2021, it was 7% of the participants. It is worth noting that among respondents aged between 15 and 24, this figure was twice as high (14%).

**SOURCE:** report on the 28th survey round of the COVID-19 study commissioned by the Ministry of Social Affairs

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## SUMMARY

Estonian family structures have diversified over time. The share of adults who live alone, and the share of children who live with one birth parent or in a family with a stepparent, has increased. These kinds of living arrangements may create challenges in terms of self-reported mental well-being. However, the family members' mental well-being does not depend on family structure alone. The quality of the relationships between family members is also important. A change in a family's structure can put family relationships under strain as their established relationship patterns no longer work. Family relationships therefore require conscious work and care, so they can be relied on in times of need. Parents are not born; people grow into parenthood. While traditional parenting requires effort, becoming a step or single parent also requires purposeful and informed action.

Many results presented in this article are not surprising. The importance of human relationships, including the importance of open family relationships and emotional closeness, is often discussed in the context of mental health and well-being. It is worrying that Estonian children and adults are not always satisfied with their family relationships and don't have people in their families to share their joys, fears and sorrows with. Today we know that adolescence can be a challenging period of development that can impact the mental health and well-being of young people. However, this knowledge does not seem to help families to consciously prepare for periods that put family relationships under greater pressure, or to pay special attention to rethinking family relationships when children become independent.

In order to build and maintain family relationships that support the well-being of children and adult family members, conscious action is necessary at the individual, family, institutional and national level. In order for today's children to be able to pass on the experience of a well-functioning family to their children, regardless of the family structure, it is necessary to contribute to the development of an informal and a formal support network for families. This will ensure the availability of prevention and intervention methods that support mental health and well-being for all family members and all families in Estonia.

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# 3.2
# The well-being of older men and women throughout the life course in relation to living arrangements

**LUULE SAKKEUS, UKU RUDISSAAR AND LIILI ABULADZE**

## KEY MESSAGE

**The relationship of well-being with forms of living arrangements is different for older men and women. Living alone tends to have a positive effect on women's well-being. For other forms of living arrangements, well-being is impaired by the burden of caregiving that falls on women, which is considerably increased when several generations live together. Men's well-being is the highest when they live with a partner and the lowest when they live alone or with a partner and someone else (children and/or parents). Social capital (level of education and employment) and economic capital (income and property) accumulated throughout the life course increase well-being in older age, especially for women living alone.**

## INTRODUCTION

Various experiences affect people's health and well-being throughout their life course. The life course approach (Elder 1998) consists of four principles. First, people's lives are part of a certain historical period that affects them throughout their lives. Second, the impact of various life events on a person's life course depends on the age at which the events are experienced. Third, as people's lives are interdependent, social and historical influences are manifested through shared relationships. Fourth, people have agency – they shape their life course with choices and actions within on historical and social constraints and opportunities. In the case of Estonia, it is important to recognise how the social upheavals caused by the Soviet occupation and subsequent societal transformations have affected the level of well-being of people over 65 years old today and the extent to which their current choices help mitigate past negative events and enhance their sense of well-being.

Living arrangements are important in the context of relationships and well-being. Research has shown that older men and women are affected by different patterns of well-being – while women seek assurance in partnerships, in the case of men, women's greater social activity in older age helps to maintain the couple's significant social relations and thereby maintain men's good health (Liu and Waite 2014; Abuladze and Sakkeus 2013). Middle-aged people often live with their parents for economic support (Grundy 2005). However,

that means they may be obligated to take care of their parents as the parents become more limited in their daily activities (Seltzer and Bianchi 2013). In both cases, being stressed about insufficient resources can reduce well-being significantly. Conversely emotional support can increase well-being considerably. Parents and children have more frequent interactions and more commonly live together in countries with weak social welfare (Hank 2007). Due to recent demographic changes (e.g. the decreasing number of children), the well-being of the older population in such countries may deteriorate as the corresponding national institutions and services are not (yet) developed enough to counterbalance the effects of demographic changes (Reher 1998).

This article explores the gender differences in assessments of well-being in relation to forms of living arrangements and accumulated social and economic capital of people over the age of 65 (the birth cohorts born before the economic crisis of the 1930s, during the crisis of the 1930s and the Era of Silence (a period of authoritarian rule in Estonia) until the outbreak of World War II, and during the war and up until 1946).

**Women tend to seek assurance in partnerships; for men, women's greater social activity in older age helps to maintain the couple's significant social relations.**

In this article, we use the SHARE (Survey of Health, Ageing and Retirement in Europe) survey's 2011–2013 data of Estonians over 65 years old (1,880 respondents, including 506 or 26.9% men). Regarding forms of living arrangements, we focused on people living alone (solo) or with a partner (couples). In both cases, we also identified the presence or absence of children and/or parents in the household. Due to the small sample size, we grouped all the remaining types of living arrangements under 'other'. We defined socioeconomic position by four childhood characteristics (number of books per person, number of rooms per person, parents' highest level of education and economic situation in childhood household) and four adulthood characteristics (respondent's level of education, last occupation according to ISCO,[1]

### CAPITAL ACCUMULATED OVER THE LIFE COURSE PLAYS A ROLE IN THE EVENTS OF LATER LIFE

According to the life course approach, the capital accumulated in childhood and that accumulated later in life both play an important role in subsequent life events. These conditions shape the general standard of living, access to economic resources, social prestige, and educational and cultural capital in old age. The circumstances of living arrangements, both in childhood and adulthood, can enhance well-being (if the accumulated capital is large) or reduce it.

1 ISCO – International Standard Classification of Occupations.

and income and value of net wealth adjusted to household size), which were integrated into a composite index between 0 and 1 for childhood and adulthood respectively (Niedzwiedz et al. 2015). A higher value indicates a higher socioeconomic position.

We also used the health-related Global Activity Limitation Index (GALI[2]). We adjusted the analysis for the number of living children (people who have no (living) children cannot have children living with them or providing them support). After the Second World War, as Estonia was annexed by the Soviet Union, many people of foreign (mostly Russian) origin settled here; they had lived outside Estonia during their childhood and often much of adulthood. In our analysis, we considered origin (born in Estonia or not) as a possible factor related to the level of well-being.

We measured subjective well-being with the CASP-12[3] index (Hyde et al. 2003), which consists of 12 questions about feelings and situations on a four-point frequency scale. Scores can range between 12 and 48. Then we measured life satisfaction (Brown et al. 2004) on a scale of 0–10. For comparability, in both cases we converted the score to a scale of 0–100 (a higher score indicates higher subjective well-being or life satisfaction). In the case of older people, these two indicators measure different aspects of well-being and relate differently to forms of living arrangements. The overall indicator of subjective well-being is more forward-looking, while life satisfaction is more of a retrospective appraisal of life. We will use the general term 'well-being' when discussing both perspectives together.

## Living arrangements and well-being in later life

People's well-being is firstly affected by what happens in the family. In the last century, the development of Estonian family structures has seen a decrease in the number of children and an increase in the number of divorces, but it has also seen an increased frequency of forming new relationships. The long-standing gender gap in life expectancy has most impacted women living alone in old age. A general obligation to work and compulsory secondary education, introduced in Estonia in the mid-20th century, have increased individualisation and women's emancipation. For the same reasons, opportunities have expanded, especially for women, for managing on one's own in old age. In this development, Estonia has kept pace with other developed countries. However, the social arrangements, which should support the needs of older people as their number increases, have not caught up with the changes. Therefore, we assume that, all things considered, the various patterns of familial living arrangements will continue to be essential for our well-being.

Older people in Estonia evaluated their subjective well-being at 71.3 points

**The long-standing gender gap in life expectancy has most impacted women living alone in old age. In addition to increased individualisation and women's emancipation, opportunities for managing on one's own in old age have expanded, especially for women.**

2 GALI – Global Activity Limitation Index.

3 CASP – Control, Autonomy, Self-realisation and Pleasure.

**Table 3.2.1.** VAverage subjective well-being and life satisfaction of older people (over 65) by country (0–100 scale)

| SUBJECTIVE WELL-BEING | |
|---|---|
| **COUNTRY** | **(CASP-12)** |
| Switzerland | 84.5 |
| The Netherlands | 84.3 |
| Denmark | 84.2 |
| Austria | 81.1 |
| Sweden | 80.4 |
| Germany | 79.7 |
| Slovenia | 78.5 |
| France | 76.3 |
| Belgium | 75.6 |
| **AVERAGE** | **75.7** |
| Spain | 71.4 |
| **ESTONIA** | **71.3** |
| Czechia | 71.2 |
| Poland | 70.5 |
| Hungary | 69.5 |
| Italy | 67.4 |
| Portugal | 65.3 |

| LIFE SATISFACTION | |
|---|---|
| **COUNTRY** | |
| Denmark | 85.2 |
| Sweden | 84.6 |
| Switzerland | 84.5 |
| Austria | 82.0 |
| The Netherlands | 80.1 |
| Germany | 77.0 |
| Belgium | 76.7 |
| **AVERAGE** | **75.5** |
| Italy | 73.9 |
| Spain | 73.9 |
| Poland | 73.0 |
| Slovenia | 72.7 |
| Czechia | 71.9 |
| France | 70.7 |
| Portugal | 68.4 |
| **ESTONIA** | **66.6** |
| Hungary | 66.3 |

**SOURCE:** table by the authors, based on data from SHARE 2011 (N = 20,688)

on average (Table 3.2.1). In terms of average scores, Estonia ranks in the last third among SHARE countries, together with Czechia, Poland, Hungary, Italy and Portugal. Older adults in Estonia evaluate their life satisfaction on average at 66.6 points. Among the SHARE countries, only Hungary has a lower score. When comparing both indicators with other countries, it is notable that the average assessments of well-being for older people are lower in Eastern and Southern Europe than in Western and Northern Europe.

Two forms of living arrangements prevail among older people in Estonia: people living without a partner (solos) and people living with a partner. Solo people are more likely than couples to live with others, such as their children or parents (Table 3.2.2). In life satisfaction and well-being, couples living together have the highest average score, followed, in life satisfaction, by people living alone. In mental well-being, the highest average is for people in 'other' forms of living arrangements, followed by people living alone.

When analysing the associations between living arrangements and subjective well-being, certain differences

**Both subjective well-being and life satisfaction are highest in couples living together.**

**Table 3.2.2.** Average subjective well-being and life satisfaction of older people (over 65) by forms of living arrangements in Estonia (0–100 scale)

| LIVING ARRANGEMENTS | (%) | SUBJECTIVE WELL-BEING | LIFE SATISFACTION |
|---|---|---|---|
| Solo | 45.9 | 72.1 | 66.6 |
| Solo with children and/ or parents | 8.7 | 67.3 | 65.4 |
| Couple | 37.2 | 73.9 | 69.3 |
| Couple with children and/ or parents | 3.7 | 70.9 | 65.8 |
| Other | 4.6 | 72.5 | 63.8 |
| **TOTAL** | **100.0** | | |

**SOURCE:** table by the authors, based on data from SHARE 2011 and 2013

**Table 3.2.3.** Subjective well-being (forward-looking appraisal of life) and its associations with different forms of living arrangements in relation to childhood and adulthood socioeconomic conditions for men, women and the total population[4]

| | | MEN | | | |
|---|---|---|---|---|---|
| | | Model 1 | Model 2 | Model 3 | Model 4 |
| Living arrangements | Solo | -2.3*** | -2.1** | -0.9 | -0.9 |
| | Solo with children and/or parents | -4.6 * | -5.1** | -3.5 | -3.9* |
| | Couple with children and/or parents | -3.0** | -3.0** | -2.7* | -2.8** |
| | Other | -1.3 | -2.4 | -1.5 | -2.0 |
| Gender | Men | | | | |
| Conditions in childhood | Index (0...1) | | 7.7*** | | 3.8* |
| Conditions in adulthood | Index (0...1) | | | 14.4*** | 13.4*** |
| Constant | | 79.9*** | 76.6*** | 72.1*** | 71.0*** |

**SOURCE:** table by the authors, based on data from SHARE 2011 and 2013

4 Tables 3.2.3 and 3.2.4 show linear regression coefficients. A positive or negative value of the independent (explanatory) variable indicates whether each independent variable has a positive or negative relationship with the dependent variable (well-being or satisfaction). If the independent variable is positive, this indicates that as the variable increases, the mean of the dependent variable also increases. If the independent variable has a negative value, the mean of the dependent variable decreases as the independent variable increases. The value of the coefficient indicates how much the mean of the dependent variable changes in case of a one-unit change of the independent variable while all the other variables are held unchanged.

between genders appear regardless of birth cohort, health-related activity limitations, birth origin and number of children (Table 3.2.3). Men appear to thrive when living as a couple or in living arrangements labelled as 'Other', while all other forms of living arrangements significantly reduce their subjective well-being. This association also stands when considering the socioeconomic conditions in childhood. When adjusting for adulthood socioeconomic position, there is a significant change in the association between living arrangements and well-being: the negative impact of living alone or living alone with children and/or parents on men's well-being becomes insignificant (when compared to living with a partner). In the final model for men, where both men's childhood and adulthood conditions are considered, it appears that adulthood conditions have a bigger influence on the association between living arrangements and well-being. However, the combined effect of these conditions on the well-being of men who live with children and/or parents, whether alone or with a partner, is negative.

**For women, living alone (compared to living with a partner) has a positive effect on subjective well-being, if we also consider their socioeconomic situation in childhood and adulthood.**

| WOMEN | | | | TOTAL POPULATION |
|---|---|---|---|---|
| Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| -0.1 | -0.1 | 2.6*** | 2.5*** | 1.3*** |
| -4.5*** | -4.4*** | -1.8** | -1.8** | -2.7*** |
| -2.1 | -2.1 | -1.2 | -1.3 | -2.3** |
| 0.1 | 0.1 | 2.5** | 2.5* | 0.9 |
| | | | | -0.4 |
| | 8.4*** | | 1.5 | 2.2* |
| | | 21.3*** | 20.8*** | 18.4*** |
| 77.8*** | 73.7*** | 66.6*** | 66.1*** | 68.1*** |

**NOTES:**

Statistical significance:
*** p < 0.001 ** p < 0.01 * p < 0.05

Model 1: living arrangements and sociodemographic factors

Model 2: living arrangements, sociodemographic factors and conditions in childhood household

Model 3: living arrangements, sociodemographic factors and conditions in adulthood

Model 4: living arrangements, sociodemographic factors, and conditions in childhood household and adulthood

Model 5: total population (women and men combined) with all factors

Reference groups: couples, women

In the case of women, the statistical associations are different. For women, living alone with children and/or parents is the only form of living arrangements that reduces women's subjective well-being compared to living with a partner after adjusting for birth cohort, health-related activity limitations, birth origin and number of children. The associations of all other forms of living arrangements and well-being do not statistically differ from the associations between well-being and living with a partner. When considering the conditions in their childhood household, the relationships between forms of living arrangements and subjective well-being remain the same for women over 65. If we consider the socioeconomic position in adulthood only, then in the case of women, compared to living with a partner, living alone has a positive effect on well-being, and so does living with someone who is not a partner, parent or child ('other'). Conditions experienced in adulthood increase well-being when living alone with children and/or parents. Similar associations remain between living arrangements and well-being after adjusting for childhood and adulthood socioeconomic position simultaneously.

Similarly, life satisfaction, which is on average lower than the overall indicator of subjective well-being, reveals differences between men and women in relation to forms of living arrangements (Table 3.2.4). Unlike with subjective well-being, women have a higher average life satisfaction than men. For men, any living arrangements other than living with a partner reduce life satisfaction. Only the life satisfaction of solo men living with children and/or parents is the same as that of couples. When considering socioeconomic position in childhood, dissatisfaction increases among men who live in 'other' forms of living arrangements or with a partner and children and/or parents. Compared to living with a partner, men's

**Table 3.2.4.** Life satisfaction (retrospective appraisal of life) and its associations with different forms of living arrangements in relation to childhood and adulthood socioeconomic conditions for men, women and the total population

| | | MEN | | | |
|---|---|---|---|---|---|
| | | Model 1 | Model 2 | Model 3 | Model 4 |
| Living arrangements | Solo | -4.3*** | -4.1*** | -3.2** | -3.2** |
| | Solo with children and/or parents | -4.1 | -4.4 | -3.2 | -3.7 |
| | Couple with children and/or parents | -4.3* | -4.4** | -4.0* | -4.1* |
| | Other | -4.9* | -6.5** | -5.0* | -6.2** |
| Gender | Men | | | | |
| Conditions in childhood | Index (0...1) | | 11.9*** | | 9.2*** |
| Conditions in adulthood | Index (0...1) | | | 11.5*** | 9.2** |
| Constant | | 77.0*** | 71.8*** | 70.8*** | 68.0*** |

**SOURCE:** table by the authors, based on data from SHARE 2011 and 2013

life satisfaction increases slightly in all other forms of living arrangements only after adjusting for socioeconomic position in adulthood. But their life satisfaction is still significantly higher when living with a partner. When adjusting for socioeconomic position in adulthood as well as childhood, both turn out to have almost equal effect on the relationship between life satisfaction and living arrangements: men over 65 have a lower life satisfaction in all living arrangements other than living with a partner.

When we look at the relationship between women's life satisfaction and living arrangements, after adjusting for birth cohort, health-related activity limitations, birth origin and number of children, there is no difference in satisfaction between women living with only a partner and women living with a partner and children and/or parents. All other living arrangements are less satisfying for women. A similar pattern persists when socioeconomic position in childhood is considered. If we adjust for socioeconomic position in adulthood, then neither women living with a partner and children and/or parent nor women living alone are any different in terms of life satisfaction when compared to women living with a partner. A better socioeconomic position in adulthood slightly increases women's life satisfaction in all forms of living arrangements. If socioeconomic position in both childhood and adulthood is considered, the previously described pattern stands, because adulthood socioeconomic position, in particular, plays a significant role in the associations between women's life satisfaction and living arrangements. Childhood conditions lose their significance when it comes to the associations between women's life satisfaction and living arrangements, while the significance of adulthood conditions increases.

| WOMEN | | | | TOTAL POPULATION |
|---|---|---|---|---|
| Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| -1.9** | -1.8** | -0.3 | -0.4 | -1.1 |
| -4.1*** | -4.0*** | -2.4** | -2.5** | -3.0*** |
| -3.0 | -3.0 | -2.3 | -2.3 | -3.0* |
| -4.4** | -4.5** | -3.0* | -3.1* | -3.7** |
| | | | | -1.0 |
| | 6.8*** | | 3.0 | 4.6** |
| | | 12.7*** | 11.7*** | 10.7*** |
| 79.4*** | 76.1*** | 72.7*** | 71.8*** | 71.5*** |

**NOTES:**

Statistical significance:
*** p < 0.001 ** p < 0.01 * p < 0.05

Model 1: living arrangements and sociodemographic factors

Model 2: living arrangements, sociodemographic factors and conditions in childhood household

Model 3: living arrangements, sociodemographic factors and conditions in adulthood

Model 4: living arrangements, sociodemographic factors, and conditions in childhood household and adulthood

Model 5: total population (women and men combined) with all factors

Reference groups: couples, women

## SUMMARY

There has been a significant development in family formation since the 1960s, which has changed the roles of women and men in the family, as well as in society. As we age, more life events accumulate that, in the context of societal development, have an impact on our well-being in older age. As a result of these changes, we see that living arrangements affect the well-being of older women and men differently.

People born in the early 20th century had relatively few children on average, and over the years, their children had a higher mortality rate than children of subsequent generations. Among the generations we analysed, in almost a third of the cases, living alone was caused not by the partner passing away but by separation. After a couple relationship ends, men start a new life with a new partner more often than women do. The long-standing high mortality rate of men in Estonia has meant that many women have been left living alone, especially in old age. Women deciding to stay solo has a great deal to do with their level of education – which has been higher than men's since the generations born in the 1930s – and paid employment, which ensures an independent income even in old age. As a result of this objective development, as well as expanded opportunities, more than half of women over 65 now live alone, while only a little over a quarter of men in that age group live alone. However, if they live with a partner, then, due to men's lower average life expectancy and healthy life years, the man is usually the first to have activity limitations due to health problems and thus need support. In this case, the female partner living with him often becomes the first helper (Tammsaar et al. 2012).

Our analysis revealed that for people over 65, living arrangements are associated with well-being in opposite directions depending on gender. Men's subjective well-being is the highest when they live with a partner; it is the lowest when they live with children and/or parents, either alone or with a partner. The subjective well-being of solo women is similar to the well-being of couples when adjusting for the socioeconomic conditions in childhood and adulthood. Men living in any other form of living arrangements have lower life satisfaction than when living with a partner. Women living alone have a higher level of subjective well-being and a more positive retrospective appraisal of life than women in any other form of living arrangements (although the life satisfaction of women living with a partner is the same). At first glance, it seems paradoxical that older solo women have higher well-being scores and the same level of

**The positive effect that living alone has on well-being may be due to the greater burden of care placed on women in other forms of living arrangements.**

life satisfaction as women living with a partner. However, there is a pragmatic explanation for this result in the Estonian context. The positive effect that living alone has on well-being may be due to the greater burden placed on women to provide caregiving in other forms of living arrangements. Even socioeconomic resources acquired in adulthood do not ease that. Several studies in Estonia have revealed that the informal burden of care is borne in particular by women over the age of 65 (Tammsaar et al. 2012), that relieving the burden of informal caregivers improves their well-being (Bleijlevens et al. 2015), and that the need for that has significantly increased (Government task force for reducing burden of care 2017).

The positive effect that living with a partner has on men's well-being suggests that their partner acts as a safety net, providing support in old age. Older women have larger social networks, and men living with a partner can be a part of that. As several previous studies have revealed, men living alone have the highest risk of health-related activity limitations (Abuladze and Sakkeus 2013), and their significantly lower life satisfaction testifies to that. Among our research subjects – men and women over 65 – the difference in life expectancy has clearly visible effects. Thus, for men, the need for support arises earlier than for women, which is an additional reason why men value living with a partner (Hank 2007). Due to the usual age difference between men and women, when older women live with a partner, they often shoulder the responsibility of care when their partner's health deteriorates. This can mean years of constant caregiving, in addition to stress from not having enough knowledge in the field of caregiving and emotional stress from the bad mood of the partner needing care. Living with parents, however, can often mean that the burden of care increases significantly for both genders, which is associated with decreasing well-being for both women and men. This may be more likely when they also have adult children living with them. The latter could increase the burden of caregiving and especially emotional or relational stress, which reduces well-being and satisfaction (Seltzer and Bianchi 2013). In Estonia, as in other Eastern European countries, caregiving is mainly left to the family. Thus the well-being of women can deteriorate significantly due to forced caregiving obligations, which in turn can generate future health problems.

**The long-neglected need in Estonia to organise caregiving in a more egalitarian manner – and not allow the burden of care in old age to fall solely on women – has resulted in women's well-being being best supported by different living arrangements than those that best support the well-being of men.**

The analysis highlights that the social and economic capital accumulated throughout the life course is important. Childhood socioeconomic capital (number of books per person, number of rooms per person, parents' highest level of education and economic situation in childhood household) is connected to increased well-being for men living with a partner far more than it is for men living in any other living arrangements. However, better socioeconomic conditions in adulthood can compensate for this disadvantage, and the negative relationships between different living arrangements and well-being decrease among older men. Men's greater dissatisfaction with life in living arrangements other than with a partner is explained by the fact that life satisfaction is assessed retrospectively: the conditions in childhood household and adulthood have equal

influence. There is a significant positive relationship between the well-being of older women and living alone (there is also a slightly lower positive relationship among women who live with others) compared to living with a partner. This positive relationship is supported by the socioeconomic conditions in adulthood, in which case we assume that women, as the main caregivers and supporters of other family members in old age (Tammsaar et al. 2012), are able to purchase the necessary services with better available resources and free themselves from related obligations. The long-term social pressure on women to be the main caregivers has led to a situation where women living alone in old age have the highest level of subjective well-being.

In conclusion, the long-neglected need in Estonia to organise caregiving in a more egalitarian manner – and not allow the burden of care in old age to fall solely on women – has resulted in a situation where women's well-being is best supported by different living arrangements than those that best support the well-being of men.

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# 3.3
# Mental health and well-being in the learning environment

**AUNE VALK, KADRI SOO AND MAI BEILMANN**

## KEY MESSAGE

**A sense of well-being at school begins with close relationships at home that consider the child's autonomy, complemented by teachers' caring attention and the togetherness of fellow students. In addition to good relationships, students' well-being is supported by a contemporary approach to learning that stimulates learning motivation. Well-being is most at risk for children in lower secondary school and university students, as well as those who have experienced bullying or have a chronic illness or special educational needs. Participating in extracurricular education is an opportunity to improve one's well-being.**

## INTRODUCTION

In Estonia, people often ask why children lose interest in learning at school and what aspects of our school environment[1] helps children learn and feel good about learning. According to self-determination theory (Ryan and Deci 2000), one of the most influential theories in this field, (learning) motivation and well-being are supported by the satisfaction of three universal psychological needs: autonomy (the ability to act independently), competence or self-efficacy (the success of actions) and relatedness (the existence and quality of relationships). To support students' autonomy, they must be able to take responsibility for their own learning, which requires information, meaningful choices and interesting tasks. The exercise of autonomy is hindered by a controlling environment (both marks and punishments can serve as a means of control), where the teacher cannot understand the student. Contributing to self-efficacy is the student's desire to develop in a supportive environment where students can test themselves and receive constructive feedback on their performance. Positive relationships with fellow students and teachers help create and maintain a sense of relatedness at school.

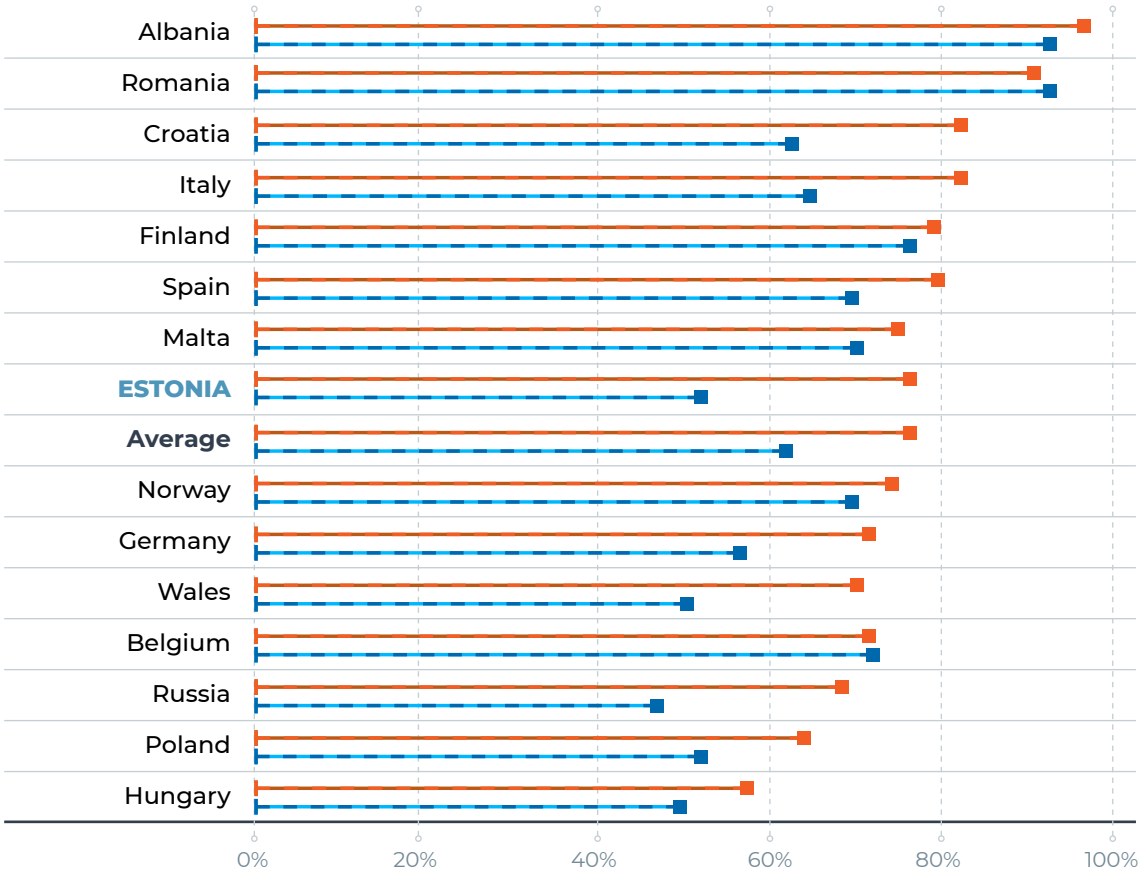
Internationally, it has been estimated that 10–20% of students suffer from mental health problems and poor well-being (Kieling et al. 2011) and that one in two adult mental health problems started before the age of 14 (Choi 2018). The OECD Programme for International Student Assessment (PISA) has revealed that anxiety and depressiveness have increased, while bullying at school and suicides have decreased internationally among 15-year-olds in the past few decades (Burns and Gottschalk 2019).

1 The terms 'school environment' and 'learning environment' are both used in this article. The former is a broader concept, covering the physical environment in the school and objective indicators, such as the size of the school and the language of instruction, in addition to psychosocial aspects.

**Well-being at school is not just about having fun and feeling comfortable. It is a subjective experience that comes with self-realisation and meaningful development and is related to learning motivation.**

Along with the home, the school environment plays a key role in children's well-being, as well as in promoting mental health and agency. We proceed from the understanding of self-determination theory that there is a connection between learning motivation and well-being and that well-being at school is about more than just having fun and feeling comfortable. It is a subjectively perceived experience that comes with self-realisation and meaningful development. A learning environment that supports learning and well-being – described in Estonia as a modern approach to learning – was among the goals of the lifelong learning strategy for 2020 and was emphasised in the vision document for education Smart and Active Estonia 2035. Its implementation is monitored, among other ways, through the National Satisfaction and School Environment Survey (referred to below as the national satisfaction survey).[2]

**Figure 3.3.1.** Proportion of students in European countries who are very satisfied with their life as a student (8, 9 or 10 points on a scale of 0–10)




**SOURCE:** figure by the authors, based on ISCWeB survey data from 2017/18

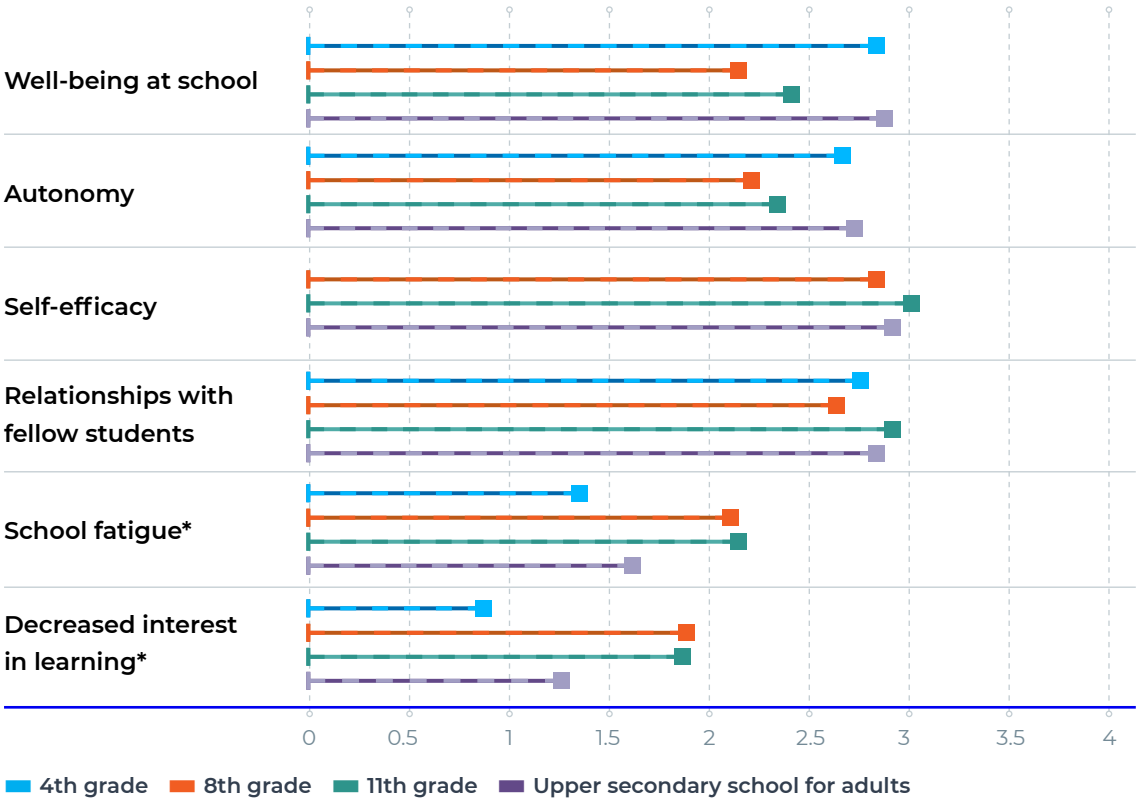
2 The results presented here are based partly on analyses made by a TalTech research group (Kaja Lutsoja, Marit Rebane and Jelena Matina). We thank Merit Kangro for mediating and interpreting the data and results. In 2021, the survey was taken by 11,365 fourth-grade students, 9,460 eighth-grade students and 5,193 11th-grade students, as well as 937 adults studying in upper secondary school.

## The decline in Estonian lower-secondary-school students' well-being is among the largest in Europe

Children's well-being as students reflects their subjective school experience, relationships and sense of well-being at school. According to the International Survey of Children's Well-Being (ISCWeB),[3] a majority (77%) of 10-year-old children in Europe are very satisfied with their life as a student (more than 8 points on a scale of 0–10, (Figure 3.3.1). The well-being of 10-year-old Estonian children is close to the average of the studied European countries. As a general trend, children's subjective well-being decreases with age: among 12-year-olds, about one-tenth fewer respondents are very satisfied with their life as a student than among 10-year-olds. Compared to other countries, Estonia's decline in well-being ratings is one of the largest: nearly 20%. Twelve per cent of 10-year-olds and 19% of 12-year-olds report low levels of satisfaction with their life as a student in Estonia (ratings of 0–4 on the same scale).

In Estonia, one of the reasons for the decline in school-related well-being may be that children in this age range are moving to a higher school level. There,

**Figure 3.3.2.** Estonian students' average assessments (on a scale of 0–4) of their well-being at school and aspects that support and hinder well-being




**SOURCE:** graph by the authors, based on national satisfaction survey data from 2021

**NOTE:** School fatigue and decreased interest in learning, marked with an asterisk, are negative indicators, i.e. a lower score indicates a better situation. Most of the apparent differences (greater than 0.1 point) are also statistically significant..

3 Based on the responses of 10- and 12-year-old students from the 2018 survey. Data collection and the analysis presented here were supported by the Estonian Research Council grant (PRG700).

**The change in students' school-related well-being, when mapped out, is U-shaped: subjective well-being is higher in the fourth grade, bottoms out in the eighth grade, increases in upper secondary school, and is again higher among adult students in upper secondary school.**

instead of one class teacher, the student has several different subject teachers, and the contact (relatedness) between the student and the teacher decreases. Furthermore, the formative assessment that was used in primary school is not being used at higher school levels, but marks are becoming important, and many students find this stressful. The amount of homework is also changing. According to the national satisfaction survey, this is a problem for almost every third student in the 8th and 11th grades but only for 13% in the 4th grade. Perception of the amount of homework is related to well-being at school.

The results of the national satisfaction survey in 2021 (Figure 3.3.2) reveal that the change in students' school-related well-being,[4] when mapped out, is U-shaped: subjective well-being is higher in the fourth grade, bottoms out in the eighth grade, increases in upper secondary school, and is again higher among adult students in upper secondary school. The increase in well-being estimates at the upper secondary school level can be explained by an increase in conscious learning and appreciation for learning by that time. Moreover, significantly less bullying has been observed at the upper secondary school level.

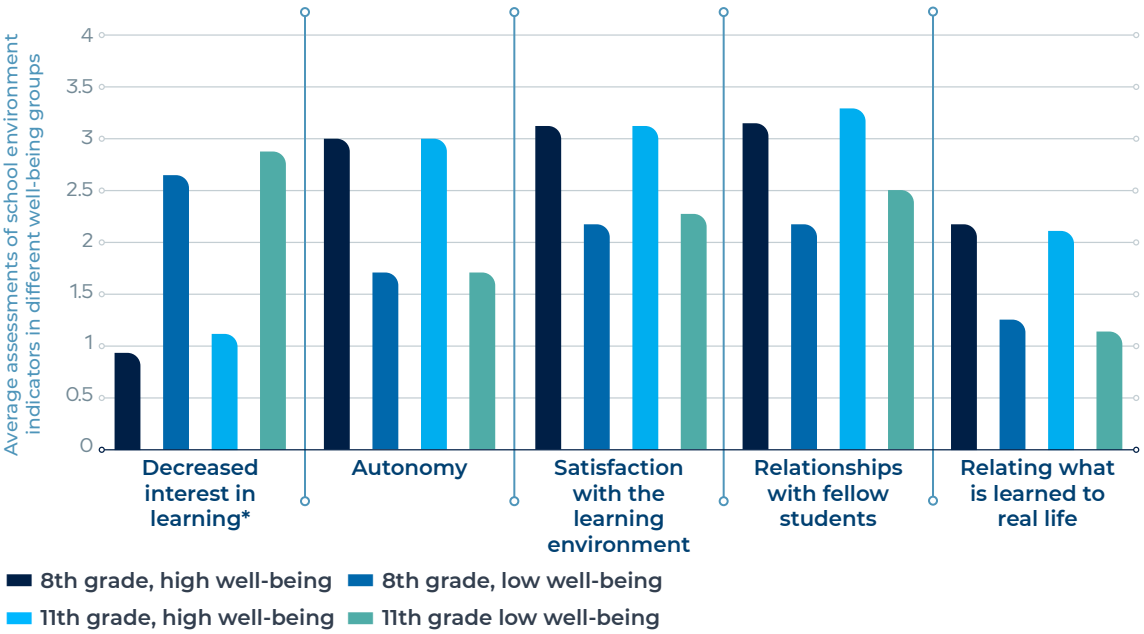
## A modern approach to learning supports students' well-being

According to the national satisfaction survey, students are most satisfied with the physical aspects of the school environment (including the timetable, classrooms, and learning materials) and the valuing of learning in the classroom. Conversely, opportunities for movement (the opportunity to be physically active during breaks and during lessons) received the lowest scores at all age levels. Among the various aspects of modern approaches to learning, students most value receiving constructive feedback but feel that teachers should do more to help them relate what they are learning to real life. Children in the fourth grade, where formative assessment is mostly used, are most satisfied with the feedback they receive. Both 8th- and 11th-grade students are more critical about the extent to which the school supports their autonomy, and they value self-efficacy and relationships with fellow students relatively highly (Figure 3.3.2).

To find out which aspects of the learning environment have the greatest impact on students' well-being at school, we use the responses of 8th- and 11th-grade students to the national satisfaction survey. Figure 3.3.3 shows the factors most strongly related to students' well-being, which (for the sake of simplicity) are presented as averages, with a comparison between students of low and high subjective well-being. Well-being is most strongly related to interest in learning, followed by autonomy and relationships. For eighth-grade students in particular, interest in learning is boosted if the teacher knows how to relate what is being taught to real life. All this supports a modern approach to learning, which

4 Overall well-being at school is assessed by a sum of the respondents' agreement with three statements: 'School is interesting', 'I feel good at school' and 'I usually enjoy going to school'.

**Figure 3.3.3.** The relationship between indicators describing the learning environment (on a scale of 0–4) with students' well-being at school (8th- and 11th-grade students)




**SOURCE:** figure by the authors, based on national satisfaction survey data from 2021

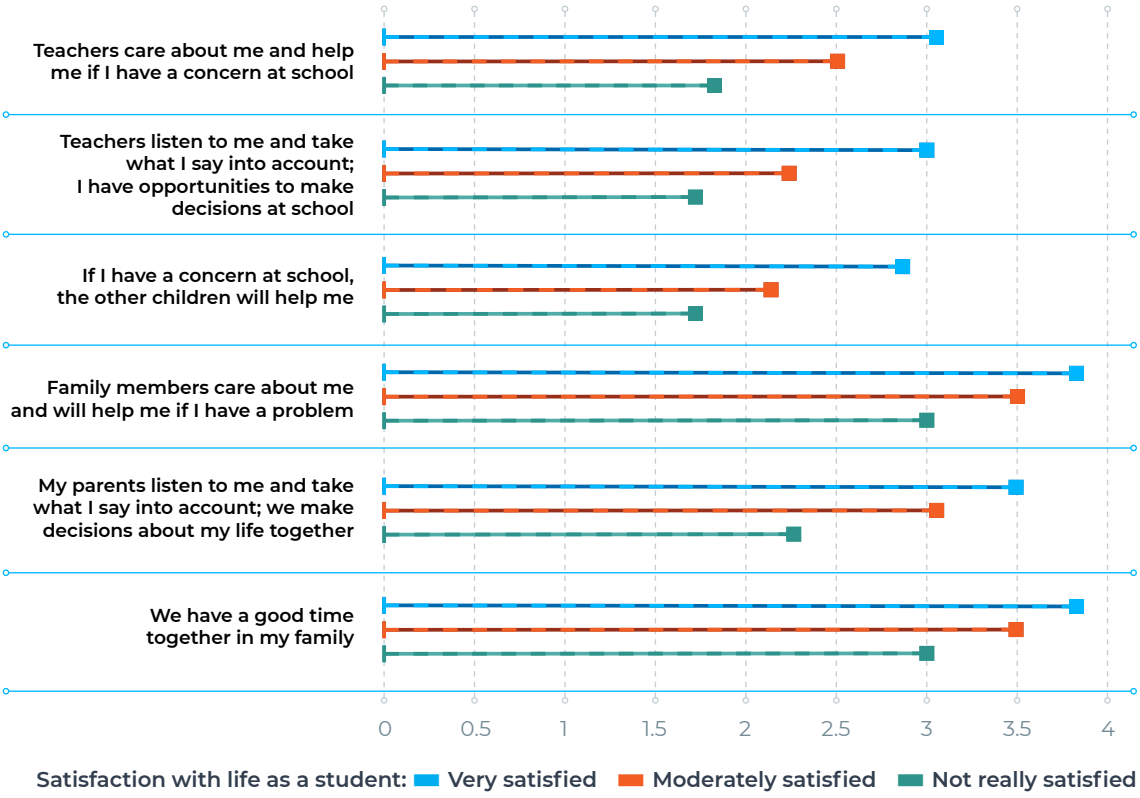
**NOTE:** Decreased interest in learning, marked with an asterisk, is a negative indicator, i.e. a lower score indicates a better situation. The results presented in the figure are based on a regression analysis, which examined the relationships between school satisfaction and 13 indicators describing the school environment. The model also included the gender of the respondent, the language of instruction in the class, an assessment of the family's financial status, and the presence of a special need or disease that prevents learning.

prioritises solving vital tasks in a cooperative learning environment that takes into account the individuality of learners.

Among girls, there are more children who are very satisfied with their school life compared to boys; this difference disappears in the 11th grade. Girls of different ages complain more about school fatigue than boys, which may mean, among other things, that they feel more social pressure to achieve better results. Trying to meet expectations makes them anxious and stressed. Students with special needs rate their well-being and the learning environment at school lower than students without special needs do. The analysis showed that well-being does not vary according to the language of instruction, except in the 11th grade, where students studying in Estonian are slightly more satisfied with various aspects of the school environment and have higher well-being than students studying in Russian. While eighth-grade students are generally the most critical in their evaluations, students from small schools (up to 20 students per year) are more positive when evaluating various aspects of school life. In lower secondary schools with fewer children, the students are likely to have a closer relationship with the teacher (more personal contact and attention). In upper secondary school, the quality of education and the choices available at a large school are valued. Thus, students' well-being and satisfaction with various aspects of the school environment are greater, according to the evaluations of the 11th-grade students at large schools (those with three or more parallel classes).

**Relationships with fellow students and teachers form the core of the learning environment, which is continuously influenced by the student's relationships at home.**

**Figure 3.3.4.** Average evaluations (on a scale of 0–4) of support at home and at school in the groups of satisfaction with life as a student (12-year-old Estonian children)




**SOURCE:** figure by the authors, based on ISCWeB survey data from 2018

**NOTE:** The figure shows the average results, while the analysis is based on a multinomial regression analysis, in which the relationships between groups who had different levels of satisfaction with life as a student and indicators of school and home well-being were evaluated. In addition, the model included the respondent's gender, family structure, language of instruction and the number of students in the class. Statistically significant differences are presented in the figure.

Relationships with fellow students and teachers form the core of the learning environment, which is continuously influenced by the student's relationships at home. We compared groups of 12-year-old students who had low, medium and high satisfaction with their life as a student (ISCWeB). The comparison showed that children who are very satisfied with student life consider their teachers to be caring and helpful and the school to be a very safe place (Figure 3.3.4). These children grow up in homes where they experience both autonomy (parents consider their opinion) and relatedness (the students perceive their parents as being very caring and spending a lot of time with them). Children who are not satisfied with their student life do not rate their relationships with teachers and fellow students particularly highly. Moreover, they experience less closeness and acceptance at home; in particular, they perceive little positive relatedness.

## Bullying at school threatens students' mental health and well-being

Although a general decline in school bullying has been noted internationally (Burns and Gottschalk 2019), bullying is still widespread among students in Estonia, judging by the national satisfaction survey results. According to the PISA study, Estonia has slightly more bullying among 15-year-olds than OECD

### YOUNG ADULTS' RECOLLECTIONS OF SCHOOL BULLYING

*There was no big difference between girls and boys when it came to being violent. Rather, boys were more likely to hit you, while girls were better at psychological violence. If you were especially unlucky, you would experience both.*

*I was the youngest child in my family, and both my brothers and my father had studied at the same school before me. The math teacher told me in the first lesson that my math mark would not be higher than a three [equivalent to a C]. With this knowledge, I had to study under this teacher for years. Since the teacher had their own opinion and it seemed impossible to change it, I just started skipping school and my math skills never improved.*

**SOURCE:** Soo and Kutsar 2019

countries do on average. Nearly a quarter (23%) of fourth-grade students have experienced repeated bullying (including other students hitting them, mocking them, taking their things, insulting them and/or threatening them online). By the 8th grade, this proportion has shrunk to 13%, and by the 11th grade, it has shrunk to 5%. Compared to students who are not bullied, students who have experienced repeated bullying give a lower evaluation of both the learning environment and their well-being at school. Their relationships with peers often deteriorate, and their interest in learning decreases. For example, eighth-grade students are twice as likely to have little interest in learning and nearly four times as likely to be dissatisfied with their relations with other students if they have been repeatedly bullied. If the child does not feel safe at school or welcome among peers, and if the teachers do not notice and help the child in case of bullying, the child no longer wants to go to school. If no help is received at home, the child's vulnerability and risk of developing mental health problems increases.

**Table 3.3.1.** The proportion (%) of eighth-grade students participating in extracurricular activities (both in and outside their school) and its relationship with the level of well-being at school

| | | WELL-BEING AT SCHOOL | | |
|---|---|---|---|---|
| | | High | Medium | Low |
| Participates in extracurricular activities at school | yes | 60.4 | 48.7 | 39.6 |
| | no | 39.6 | 51.3 | 60.4 |
| Participates in extracurricular activities outside of school | yes | 78.1 | 73.7 | 65.3 |
| | no | 21.9 | 26.3 | 34.7 |

**SOURCE:** table by the authors, based on national satisfaction survey data from 2021

## Participation in extracurricular education is associated with higher well-being

According to the national satisfaction survey, almost half of eighth-grade students (48%) participate in the school's extracurricular activities (e.g. hobby clubs, organising events), and nearly three-quarters (71%) are involved in extracurricular activities outside the school (e.g. attending a hobby school, a youth centre or camp).

Those who participate in extracurricular activities feel they have greater autonomy, self-efficacy and positive relatedness and are usually more satisfied with their relationships with classmates. They have less school fatigue and more interest in learning. Extracurricular education can help compensate if, for example, a student who feels uneasy or is bullied at school finds friends and supporters in extracurricular activities instead. A comparison of the groups of students with high, medium and low levels of well-being at school shows that 60% of students with high well-being participate in extracurricular activities at school, and the same proportion of students with low well-being do not (Table 3.3.1). However, extracurricular education outside of school is more uniformly supportive of children's well-being

## Student well-being during the COVID-19 crisis

The COVID-19 pandemic and the state of emergency in the spring of 2020 was a major change in the lives of all people. Students and teachers had to quickly adapt to distance learning, which tested students' ability to self-manage and threatened their well-being. According to the 2021 national satisfaction survey, students' well-being at school (a composite of the assessments 'School is interesting', 'I feel good at school' and 'I usually enjoy going to school') has not changed compared to 2019 and 2020 (all surveys were conducted in February). Fourth- and eighth-grade students' sense of autonomy has decreased, which is why in 2021, children responded that they could not learn as they wished and be 'themselves' at school. This result was expected in the

### EXCERPTS FROM INTERVIEWS WITH STUDENTS DURING THE COVID-19 PANDEMIC

*A sixth-grade girl: 'I miss my friends. I feel like I haven't seen them in years. I miss school. I wish the virus would go away and I could go back to school.'*

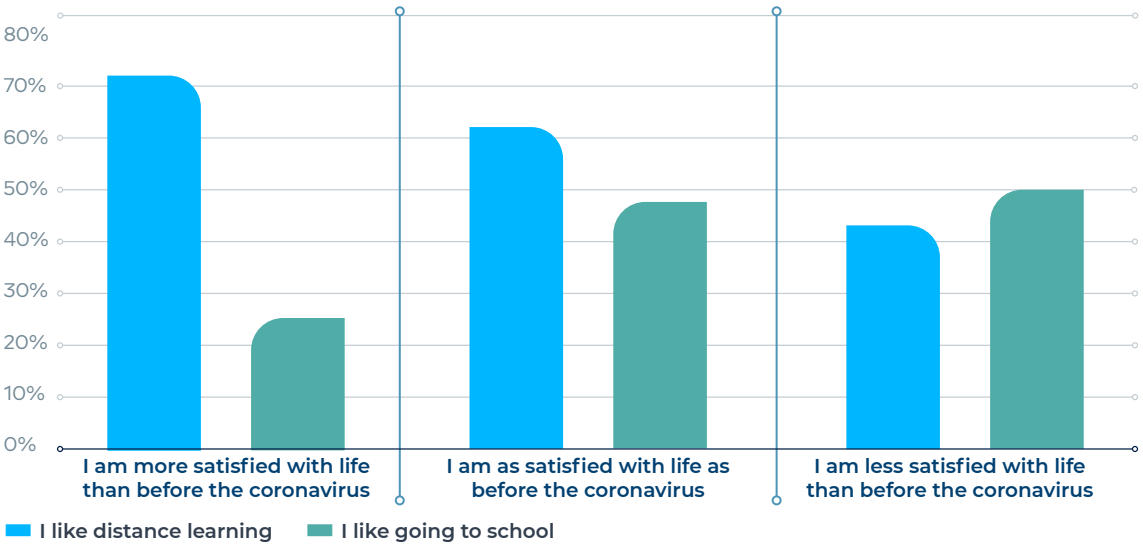
*A sixth-grade boy: 'I really want to go back to school because there is nothing to do at home.'*

*A sixth-grade boy: 'I miss school and especially my friends. Schoolwork also goes faster at school.'*

*A 12th-grade girl: 'Life without friends between these walls is a disaster.'*

**SOURCE:** Kutsar and Kurvet-Käosaar 2021

**Figure 3.3.5.** Students' contact and distance learning preferences and life satisfaction before and during the COVID-19 pandemic (students who completely or somewhat agreed with the statements, %)




**SOURCE:** figure by the authors, based on ISCWeB survey data from 2021

context of the pandemic and the various restrictions associated with it. Additionally, school fatigue and decreased interest in learning are more of a problem for 8th- and 11th-grade students than for 4th-graders and adult learners. Children who receive little support from parents and teachers also experience greater fatigue and decreased interest in learning. However, loss of interest in learning is a risk factor for dropping out.

The results of an ISCWeB Supplement Survey conducted during the COVID-19 pandemic[5] show that students' overall satisfaction with life in retrospect fell from an average of 8.4 points to 7.2 points on a 10-point scale during the pandemic period. Life satisfaction decreased more in girls than in boys, and not all children experienced a decline in life satisfaction or did not experience it to the same degree. While slightly more than half (52%) of the children reported that their life satisfaction was lower than it was before the pandemic, 33% of the children perceived no change in their life satisfaction level, and 15% of the children reported an improved satisfaction level. There was an especially large increase in satisfaction among students who tend to prefer distance learning (Figure 3.3.5).

**Students' overall subjective satisfaction with life in retrospect fell during the COVID-19 pandemic, but not all children experienced a decline or did not experience it to the same degree.**

Comparing the feedback of these groups on home and school, the group whose satisfaction remained the same before and during the pandemic seems to be the most balanced. Despite the

5 The COVID-19 Children's Worlds Supplement Study (ISCWeB) was conducted among fourth- to sixth-grade students in the spring of 2021 in various parts of the world. More than 1,300 Estonian students participated in the survey (Russian-speaking and immersion classes did not participate). Most of the respondents were in distance learning at the time of the survey.

restrictions, these students continued to cope well both in everyday activities (playing sports, reading and spending free time outdoors) and in schoolwork. They felt more supported by teachers and perceived greater autonomy at school, especially compared to children whose satisfaction increased during the pandemic. They could see the positive aspects of the pandemic period. For example, they appreciated more than others the fact that they were able to spend more time with their family, sleep longer, and make their own schedule. They also learned new ways to do schoolwork online.

Children whose satisfaction level increased during the pandemic admitted that they had not been particularly satisfied with their relationships, school or teachers' support before the pandemic. They missed their classmates less and were less likely to want to go back to school, because during the lockdown, they had more free time at home and fewer responsibilities; they played computer games more often, met their friends online, spent less time outdoors and participated in sports less. They also missed the teachers' guidance less and worried less about getting bad marks at school because of COVID-19. They liked distance learning more than other students did, and almost half said that they never felt like going to school during the pandemic.

Students whose satisfaction decreased during the pandemic worried about their studies and missed their friends. During distance learning, they spent more time doing schoolwork and less time playing, being physically active and socialising with friends. Compared to the other two groups, they missed the teachers' advice more often and studied more with their parents. They liked distance learning less than contact learning. They were more worried about the changes to their life as a student and that, due to the lockdown, they might get bad marks at school. They also had significantly more other pandemic-related concerns, such as worries about family finances or about family members becoming infected.

Overall, 16% of students felt anxiety due to the pandemic. Girls felt this way more than boys. Able and coping students felt COVID-19-related anxiety the most, which may have been partly due to their greater awareness and general tendency to worry. Compared to less anxious children, they received more information about the virus and felt less safe in general – at home, at school and near the home. They also worried about themselves and family members getting infected and about family finances, marks and other issues related to school.

Data from the national satisfaction survey (collected in February 2021, before distance learning) show that older students were more affected by the pandemic than younger ones. Eleventh-grade students and adult learners admit to being tense during the COVID-19 crisis significantly more often (42–43% of them often felt tense) than fourth-graders (14%) or eighth-graders (33%).

## Mental health of university students

While young and highly educated people generally have better mental health than older and less educated people, students' mental health is significantly worse during university studies. The analysis by Käosaar and Purre (2021) explains the mental health situation of university stu-

**While about 9% of all those of university age experienced a significant level of stress, this indicator was 49% among university students.**

dents. The survey data were collected in 2019 within the framework of the international Eurostudent survey, to which an abbreviated Estonian emotional state questionnaire was added. This was the basis for calculating the emotional distress (referred to below as 'stress') score (with subscales for depressiveness, anxiety, mental exhaustion and sleep disorders). A total of 2760 students from all Estonian higher education institutions responded to the survey. While 9% of students feel that they have some kind of mental health problem (3% in 2015), a significantly larger proportion of students have a high level of emotional stress. According to a 2014 health survey by the National Institute for Health Development, while about 9% of all those of university age experienced a significant level of stress, this indicator was 49% among university students. This seems like an exceptionally high proportion, but similar results have been obtained in previous studies from other countries (Sharp and Teiler 2018). The stress level is higher among female students, students with special needs, Russian-speaking students, students with financial difficulties and students who have experienced bullying at university. Interestingly, the stress level is higher among those bachelor's degree students who have entered university immediately after completing the previous level of study, as well as those who do not work and do not have children. This result differs from several previous studies (see Sharp and Teiler 2018 for an overview), in which working and family responsibilities are associated with higher stress in students. Among school-related factors, low motivation, limited communication with fellow students and a lack of clarity regarding the requirements for completing the curriculum predict greater stress. Support from the teaching staff improves well-being.

**The biggest predictors of school-related stress in university students are low motivation, limited communication with fellow students and a lack of clarity regarding the completion of the curriculum. Support from the teaching staff improves well-being.**

The same phenomenon was analysed using data from the 2021 Estonian National Mental Health Study,[6] comparing students and employees aged 20 to 29. The analysis also revealed that students have higher levels of anxiety and depressiveness than working people do. The difference in the levels of depressiveness is fully explained by background characteristics, including income and gender. In other words, among students there are more people with financial difficulties and more women, who are also more depressed. However, differences in general anxiety remain even after matching based on background characteristics. Since it is a cross-sectional study, we cannot definitively assess whether more anxious young people are more likely to study or whether the increase in anxiety stems from the learning environment. However, previous long-term studies (e.g. Andrews and Wilding 2004) show an increase in both anxiety and, to a lesser extent, depressiveness during university studies and relate this to student lifestyles. Among the causes of these problems are academic and time pressure, dissatisfaction with studies and lack of support from teaching staff, low self-efficacy and unclear career prospects, as well as financial difficulties. The importance of moderation is reinforced by the fact that those who

6 More information on the study appears in Chapter 1 of this report. The analysis was prepared by Kenn Konstabel and is available as a manuscript from the first author.

study very little or very much have more problems (Larcombe et al. 2016). A high level of stress is, in turn, associated with poor academic results, dropping out and risky behaviour (smoking, alcohol and drug use, suicidal thoughts).

## SUMMARY

By international comparison, Estonian students' well-being at school is at an average level. According to the PISA study, Estonia is one of the few countries where students' academic results are outstanding while their life satisfaction is average or above average. A comparison of children of different ages within Estonia shows that eighth-grade students are in a relatively difficult situation. This is probably related to age characteristics, as well as the fact that their relationship with teachers remains more distant than that of fourth-grade students, who mainly have one teacher. By the eighth grade, interest in learning has also decreased significantly. Compared to upper secondary school students, eighth-grade students also feel they have less autonomy, or the ability to make choices, and poorer relationships with fellow students. They also have poorer self-management skills, which could help them solve problems and stay motivated. Students with special needs generally rate their well-being lower.

Well-being at school depends on good relationships at home and the support of teachers and fellow students. Speaking of relationships, it is crucial to reduce bullying and provide support for students with special needs. In addition to relationships, it is important that the learning environment allows for shaping the learning process autonomously and offers instruction that encourages learning and is related to real life. These three factors – good relationships, choices in learning, and learning that offers real-life tasks and experiences of success – are the three foundations for maintaining and developing students' interest in learning. Interest in learning, in turn, means both enhanced well-being and better academic results.

As to the schools where students are happier, there is no systematic difference in well-being between counties or concerning the language of instruction. However, in upper secondary school, the well-being of Russian-speaking students is lower, which points to problems in what is known as the '60+40 system' (at least 60% of teaching in upper secondary school must be in Estonian), where students are likely to have coping difficulties and unclear prospects. Younger students' well-being is higher in smaller schools, and upper secondary school students' well-being is higher in larger schools. This should be taken into account when designing the school network reform. While relationships are crucial at a younger age, the need to make learning-related decisions becomes more important at higher levels of school. Well-being in education is fostered by students' participation in extracurricular activities both at school and outside of school. It is important to emphasise the wide spectrum of influence that extracurricular education has on the development of children's autonomy, self-efficacy and social connectedness, which is why students should have enough choices and access to extracurricular education.

**Younger students' well-being is higher in smaller schools, and upper secondary school students' well-being is higher in larger schools.**

University students' mental health indicators are of concern, as nearly half of the students have high levels of emotional stress. Like school students, university students with special needs and/or economic difficulties experience more stress. Problems are caused or amplified by unclear learning goals, low motivation and a lack of support from the higher education institution and fellow students. Those who perform multiple roles – working students and students with family responsibilities – do surprisingly well. This shows that lifelong learning works – that higher education institutions can offer flexible learning opportunities. But it also shows that greater time pressure is compensated by a better economic situation and clearer learning motivation.

In summary, well-being is not just a nice addition to learning, which is the main goal at school. Improving well-being is an important task that keeps students functioning and healthy both during school and later in life, and supports their interest in learning. School cannot take away children's special needs or change the family's difficult economic situation, but it is these groups that need special support. At the same time, the school holds at least three keys to creating well-being: good relationships (including reducing bullying), supporting learners' autonomy (including offering decisions and choices) and creating an environment that supports an interest in learning. ●

**Well-being at school is not just a nice addition to learning, which is the main goal, but it also keeps students functioning and healthy both during school and later in life, and supports their interest in learning.**

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# 3.4 The labour market, the working environment, and mental health and well-being

AVE KOVALJOV, LIINA RANDMANN, MARIT REBANE AND AARO HAZAK

## KEY MESSAGE

As an essential part of a person's well-being, identity and use of time, work is closely related to mental health. The COVID-19 pandemic led to significant changes in the labour market and working environment. The changes in the organisation of work and workload and the related mental health implications affect work performance, which in turn has an impact on the employee's salary, success in the labour market and well-being. In the changed situation, mental health indicators were, as expected, worse for people not participating in the labour market. However, they also worsened among many employees, whose occupational identity and sense of security were shaken. Women, who have more difficulties reconciling work and family life, as well as employees burdened with new urgent tasks (frontline workers, managers), were hit harder than others.

## INTRODUCTION

Work is an essential part of an adult's life, affecting their economic, cultural, social and psychological coping abilities. Working takes up a large part of a person's time, and the working hours often cannot be freely chosen. According to Eurostat (2022), in 2021, the average working week in Estonia was 39 hours for men and 36 hours for women, while 21% of men and 15% of women had the benefit of flexible working hours.

**Compared to being away from the labour market, for reasons such as unemployment or parental leave, working is associated with a greater sense of well-being.**

Compared to being away from the labour market for various reasons (e.g. unemployment, parental leave), working as such is associated with a greater sense of well-being. Work is an important source of self-development and self-determination and has a wider positive impact on well-being, because work provides social connectedness. However, there are a number of risks in the working environment and the organisation of work that affect well-being and mental health.

Working often requires physical and mental, as well as emotional, effort. The nature of work and working conditions are important for both the worker and their family members. Harvey et al. (2017) divide the work-related risk factors for well-being into three groups: imbalanced job design (e.g. working time is not enough to fulfil work tasks, effort-reward

imbalance), occupational uncertainty (e.g. temporary work) and a lack of value and respect in the workplace (e.g. a low level of autonomy at work, i.e. unfair treatment or bullying and the exclusion of employees from decision-making). According to Eurostat (2021), 41% of women and 34% of men in Estonia considered their working environment harmful to their mental health in 2020, while 48% of respondents reported that health problems arising from work affect their daily activities. The main causes of stress were high workload, time pressure, and interaction with difficult colleagues and clients. A survey conducted in Estonia in 2020 (Eurofound 2020) showed that people also worry about a lack of savings and possible hardships in the event that they or a family member loses their job.

How one copes with work in times of rapid and unexpected changes, and how this affects mental health and well-being, depends not only on the person but also on factors such as the workplace, working conditions, family-related factors, and opportunities to reconcile work and family life. Recent international studies show that the mental health impact of the COVID-19 pandemic, which strongly shook the entire occupational sphere, has not been uniform across the entire population. Women, young people, frontline workers, and the infected and people close to them, as well as people who isolated themselves completely, suffered more mental health problems (Reile et al. 2021).

This article aims to show how the mental health and well-being of Estonian employees coming from different socioeconomic groups and working under different conditions have changed during the COVID-19 pandemic and how these changes are related to differences in working environments vis-à-vis other European countries.

## The COVID-19 pandemic led to major changes in working environments

For Estonia, the COVID-19 crisis that began in 2020 was unprecedented, giving rise to a state of emergency, excess mortality, an overload in the hospital system, and restrictions on movement and activities. There were also major changes in the usual working environments and working conditions. Many studies (e.g. Kumar and Nayar 2021) have confirmed the negative impact of the pandemic on people's mental health and well-being, including through changes in working conditions.

The pandemic has significantly changed the forms and ways of working for some people and threatened job

### SHARE OF REMOTE WORK DURING THE COVID-19 PANDEMIC

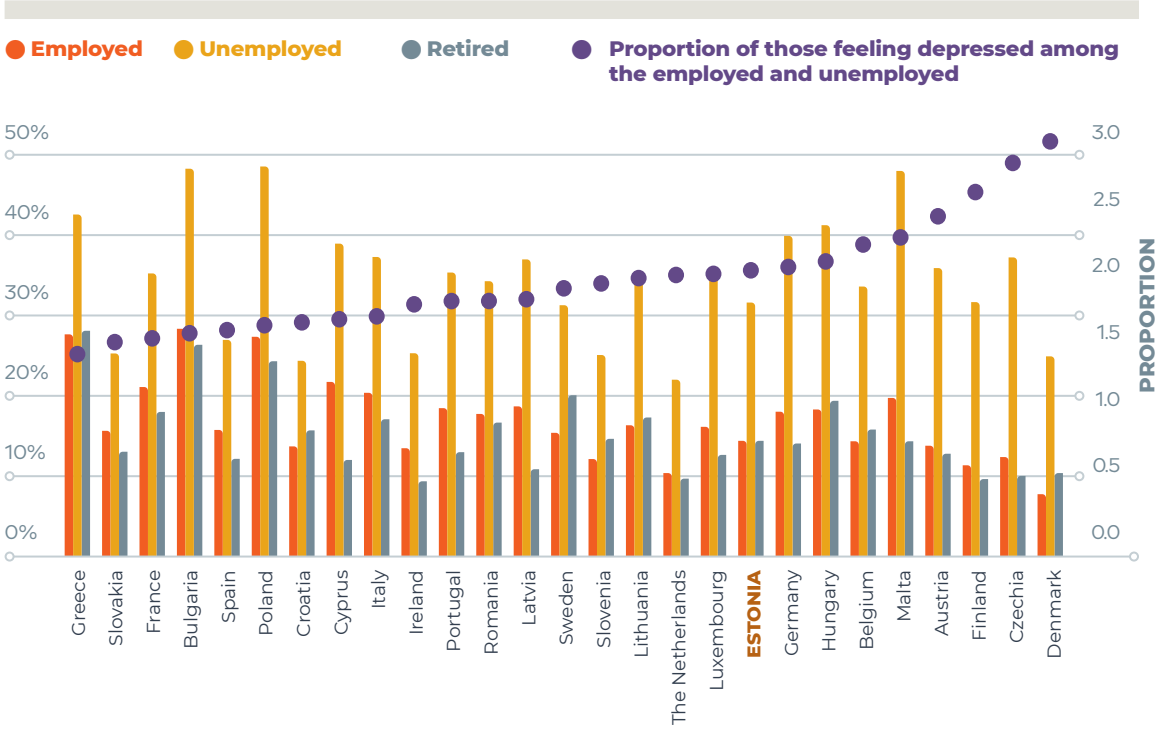
The pandemic accelerated changes in the ways, times and places of working. The number of people involved in platform work and especially remote work increased. In the EU, the share of people working from home increased from 5% in 2019 to 12% in 2020. According to Statistics Estonia, the share of employees in remote work was 9% in 2015 and 18% in 2019; it reached 31% in 2020. Most of them worked from home for all their working hours, while 11–15% worked from home for only a small fraction of the working time. By the beginning of 2021, the share of remote working had dropped to 21%.

**SOURCE:** Eurofound 2020

stability for others, causing issues with coping and self-identification. The labour market impacts of the pandemic are more wide-ranging than just the absence of certain workers from work or the reduction or increase of workloads during the crisis. Changes in the organisation of work affect the types of workers participating in the labour market. The organisation of work and the workers' mental health affect work performance, which in turn affects the workers' income and success in the labour market. Changes in the organisation of work and workload ultimately affect mental health.

The increase in remote working during the pandemic required both employees and managers to be able to implement and coordinate hybrid forms of work despite having no previous experience or norms for doing so. During the pandemic, the share of employment relations based on civil law contracts rather than employment contracts increased.
In connection with remote working, employees felt changes in both their mental and physical health, which prompted greater public attention to the issue of employees' well-being. According to the Eurofound (2020) survey, 3–4% of respondents stated that remote work caused them stress, and 12% attributed the stress to an increased workload. According to the same survey, overall life satisfaction in Estonia, on a 10-point scale, decreased from 6.8 points in 2019 to 6.0 points in 2021. The decrease was somewhat more for men than for women. With the expansion of flexible forms of work, the need for additional competencies grew. ICT knowledge, risk management and analysis, product development, communication and management skills became more important. Everyone's self-management skills, including the ability to independently plan and organise their work and take responsibility, became important. Employees became more aware of the significant impact of the working environment on their mental health.

**Figure 3.4.1.** The proportion of people who had felt depressed more than half of the time in the previous two weeks, by labour market status, and the ratio of the proportion of depressed people among the unemployed and the employed




**SOURCE:** figure by the authors, based on Eurofound data from 2020

## Having a job as a factor supporting mental health

Employment as such can have a beneficial effect on mental health. The 2020 Eurofound survey reveals that the percentage of people who have experienced depression is more than twice as high among people who are unemployed than among those who are employed. The respective figures for Estonia are 33% among the unemployed and 15% among the employed (Figure 3.4.1). Compared with other European countries, Estonia falls in the middle range in terms of the difference in the percentage of people who felt depressed during the previous week among the unemployed compared to the employed.

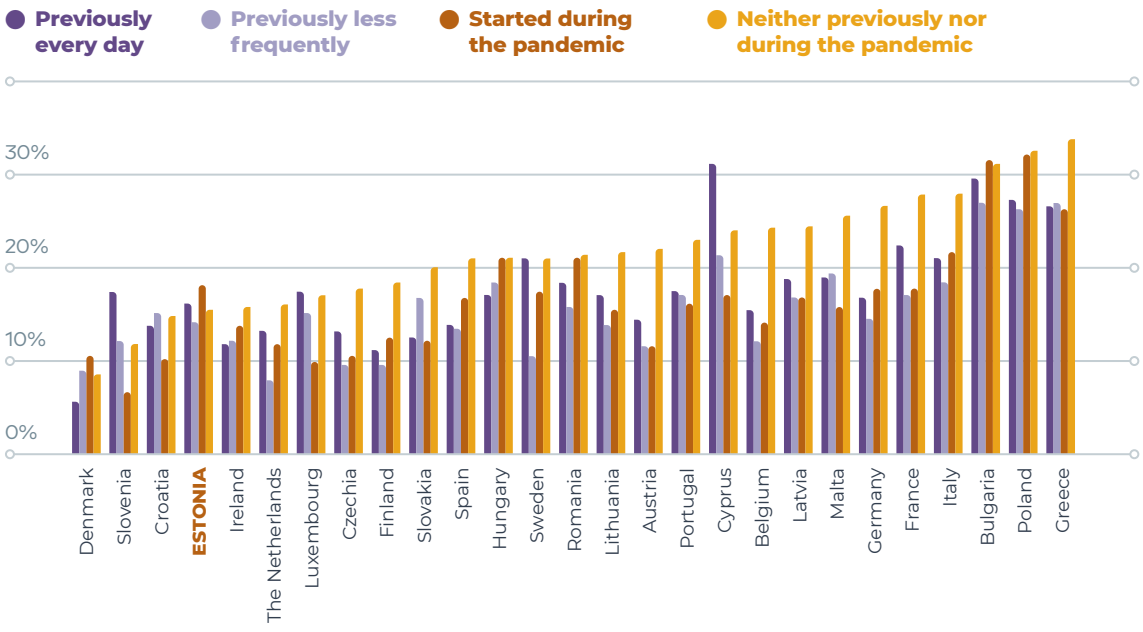
**The proportion of people who have experienced depression is more than twice as high among people who are unemployed.**

## Working from home has its advantages and disadvantages

A new aspect of work during the COVID-19 pandemic was the fact that many people were working from home. The Eurofound 2020 survey shows that in Estonia the proportion of those who were depressed most of the time in the previous two weeks did not differ significantly between those who worked from home (including those who had already been working from home before the pandemic) and those who did not work from home (Figure 3.4.2). However, it seems that the change in work organisation due to remote working has

**The change in work organisation due to remote working has slightly increased the proportion of depressed people.**

**Figure 3.4.2.** The proportion of people who felt depressed more than half of the time in the previous two weeks by remote working status




**SOURCE:** figure by the authors, based on Eurofound data from 2020

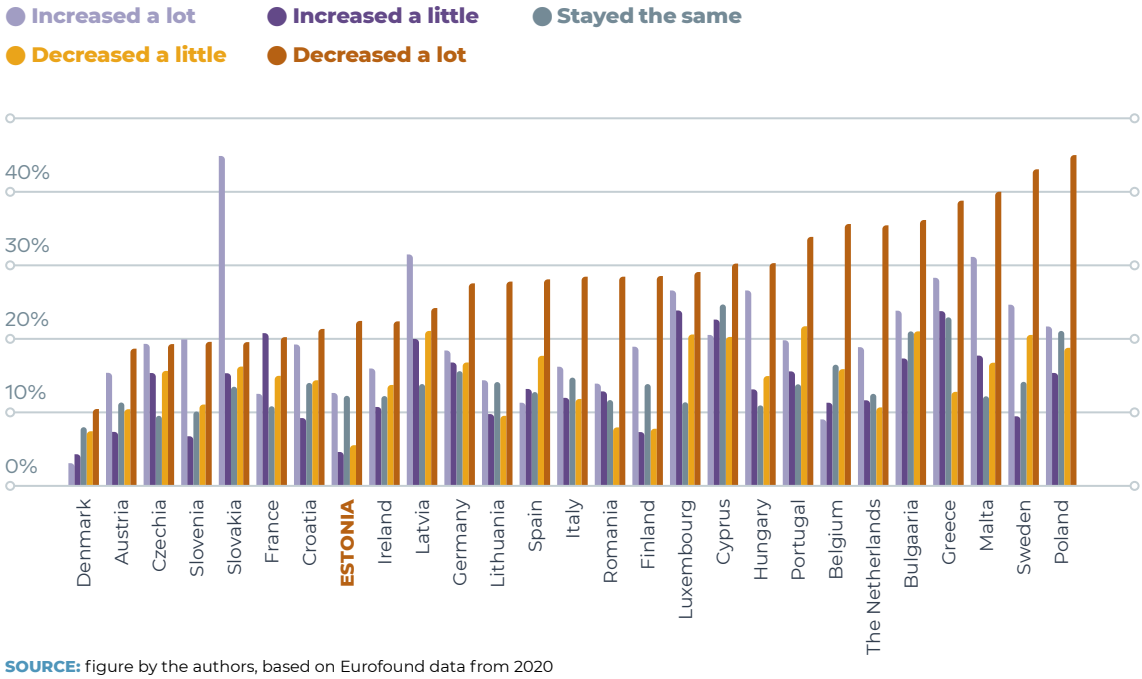
slightly increased the proportion of depressed people. This may be due to the fact that they may not have had the necessary tools or space to work from home, or they may have lacked the skills to do so (e.g. using video meeting tools) or were unable to get immediate help from colleagues when it was needed (Ainsaar et al. 2021). In addition, Estonia stands out among European countries in that it had a large share of depressed people among those who did not have the opportunity to work from home. A direct risk of infection makes them a vulnerable group.

## The COVID-19 pandemic led to mental-health-threatening changes in workload

For many people, the pandemic led to changes in workload. There were those who suffered from a sudden increase in workload due to additional tasks related to the pandemic (e.g. frontline workers and managers dealing with crisis management and the coordination of frontline workers). However, there were also those whose workload decreased (e.g. people working in the service sector). Depression was widespread in Estonia, as well as in the majority of other European countries. This was especially noticeable among those whose workload decreased significantly during the pandemic (Figure 3.4.3), so that having a job no longer gave them the customary sense of security.

Figure 3.4.4 also shows that having a job is very clearly related to mental health, apparently through financial security. The figure shows that the share of depressed people in Estonia was highest among those who lost their jobs either temporarily or permanently. Nevertheless, among those who permanently lost their jobs, there were more depressed people in most other European countries than in Estonia.

**Figure 3.4.3.** The proportion of people who felt depressed more than half of the time in the previous two weeks by workload during the pandemic

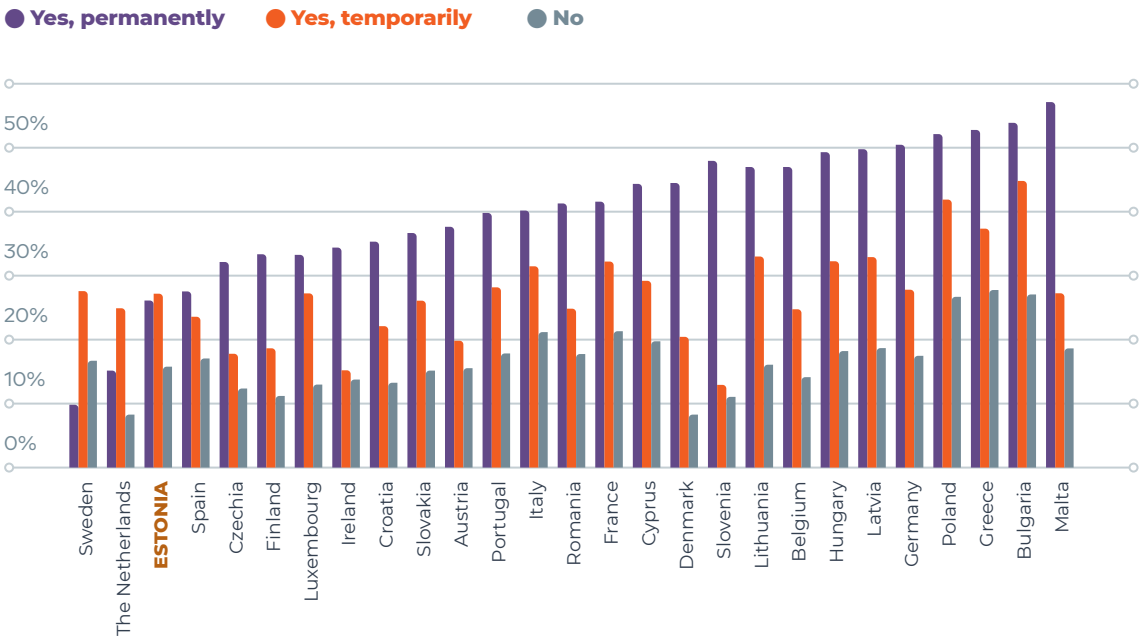



**SOURCE:** figure by the authors, based on Eurofound data from 2020

*There was basically no time off work. When I went out of the house for the first time, I went to visit my sister. I think that by then, more than a month had already passed, or maybe one and a half months – it was quite a long time. There wasn't like ... While others shared on social media how they were able to look inside themselves, so to speak, and watch Netflix and read and enjoy the outdoors, we on the crisis team were in a completely different situation.*

**EXCERPT FROM AN INTERVIEW, SOURCE:** Ainsaar et al. 2021, p. 62

**Figure 3.4.4.** The proportion of people who felt depressed more than half of the time in the previous two weeks: people who lost their job during the pandemic and those who did not




**SOURCE:** figure by the authors, based on Eurofound data from 2020

## The impacts of the COVID-19 health crisis on mental health are greater among the non-working working-age population

Since 2008, a survey of the health behaviour of the Estonian adult population has been conducted every two years among people aged 16–64. The total sample size from 2008 to 2020 was over 19,000 individuals, of whom just over 1,000 completed the questionnaire during the first wave of the pandemic, from 12 March to 17 May 2020. The state of emergency in Estonia was not as severe as in more densely populated regions of the world, but it still amplified people's fears and emotional vulnerability. The survey showed that during the first wave of COVID-19, there was an increase in feelings of depression and sleep disorders, as well as the use of sleeping pills, sedatives and antidepressants among

people belonging to different socioeconomic groups. The increase in tension and depression during this period was felt the most among the working-age population in Estonia. The survey also revealed that persons participating in the labour market have significantly fewer mental health concerns than persons who are not participating in the labour market (those who are inactive, unemployed, on parental leave, studying or in military service). This finding is in line with the trends in other countries (Figure 3.4.5; cf. Figure 3.4.1).

The impacts of the health crisis manifested themselves differently in different groups. Some population groups may have benefitted from social isolation, for example, by having more flexible working hours and spending less time commuting. According to the analysis, managers, above-average salary earners, men and people in a couple relationship benefitted from the lockdown, as these groups reported less anxiety and sleep problems than in previous periods. On the other hand, women, workers in technical jobs (including nurses), workers in the tourism and service fields, and people with lower salaries experienced more mental health problems during the state of emergency at the beginning of the COVID-19 pandemic than they had in previous years.

## The conditions of the working environment have varied effects on the mental health and well-being of different groups of employees

The quality of the working environment and its impact on employees' well-being can be assessed in terms of the job demands on the employees and the job resources available to them. The balance of job demands and resources is expressed in how complex, varied and intensive the work is, what

**Figure 3.4.5.** A selection of mental health indicators of the Estonian working-age population during the first wave of the COVID-19 pandemic

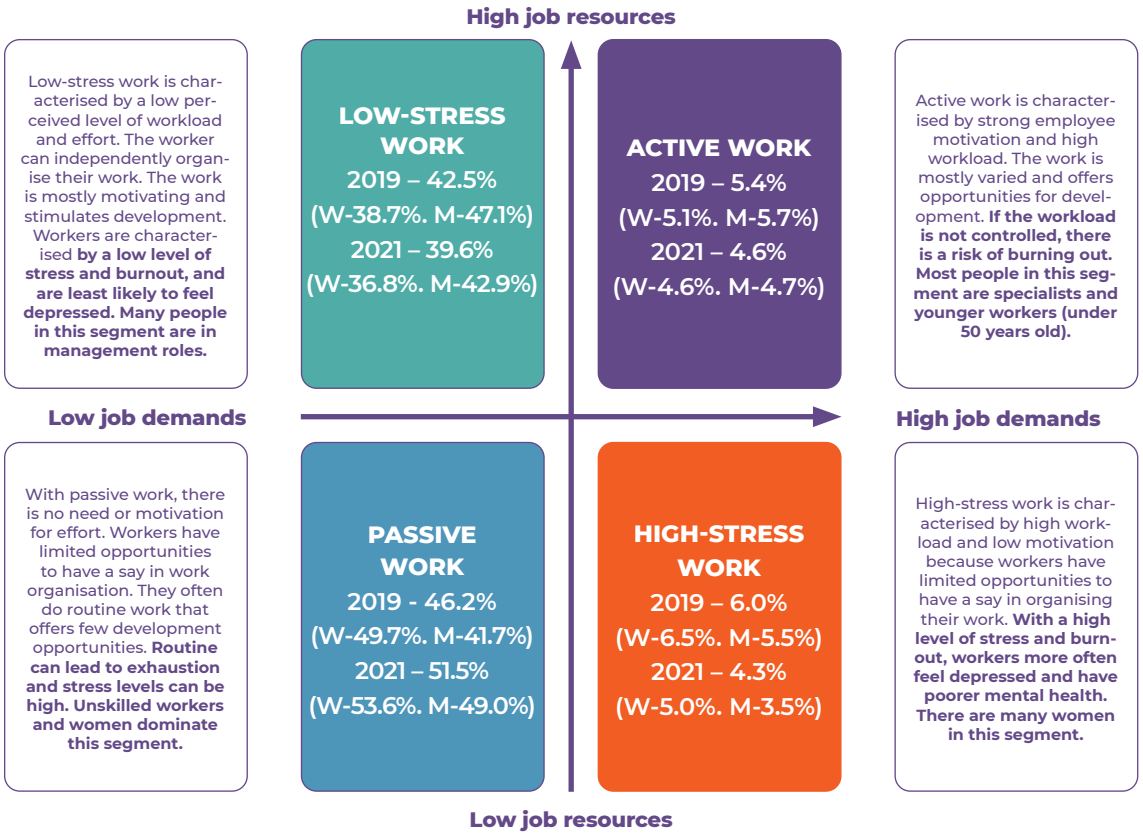

**SOURCE:** figure by the authors, based on Estonian adult population health behaviour survey data from 2020

opportunities it offers for personal and professional development, and the extent to which the employee can have a say in matters concerning their work and organise their activities independently.

In 2019, TalTech and Qvalitas Arstikeskus AS began a study to assess the psychosocial quality of the working environment, using the Copenhagen psychosocial questionnaire COPSOQ III.[1] The sample consisted of employed people visiting Qvalitas clinics for occupational health checks. The data collected from nearly 26,000 respondents in 2019 and 2021 are used below to compare pre-pandemic and post-pandemic assessments of people's working environment and well-being.

For a more general assessment of the nature of work, we used the job demands and resources model created by Bakker and Demerouti (2007), which gives insight into employees' work motivation and performance and helps predict their work stress and burnout (Figure 3.4.6).

**Figure 3.4.6.** Job demands and resources model with the impact of various types of work on mental health




**SOURCE:** Bakker and Demerouti's (2007) model; figure by the authors, based on COPSOQ survey data from 2019 and 2021

**NOTE:** Results of the COPSOQ study in bold below the description of each model; comparison between 2019 and 2021 and the percentage of men and women at the centre.

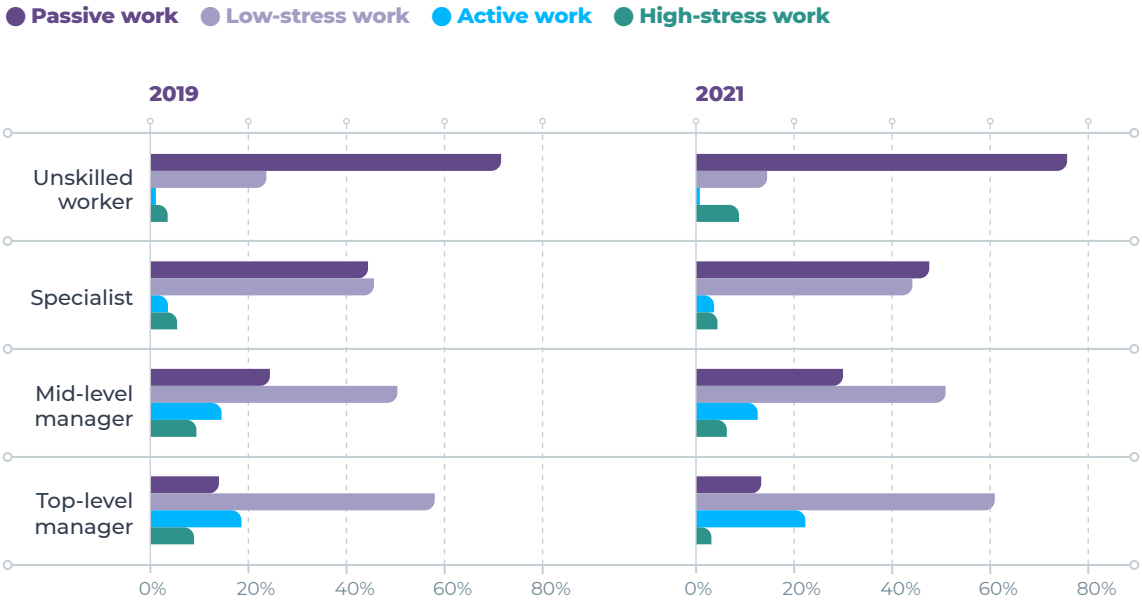
1 Both the International Labour Organisation and the World Health Organisation recognise the COPSOQ III questionnaire as a tool for occupational risk assessment (ILO 2016; Leka and Jain 2010). The 2019 version of the questionnaire was used in this study.

Job demands are the physical, cognitive and emotional factors of the working environment which are associated with tension and stress. These have a negative impact on the employee's mental and physical health, reduce work engagement and productivity, and increase the risk of burnout. Job resources are the physical, social and organisational factors related to work motivation helping employees to achieve goals, increase well-being, reduce stress, and deepen their engagement with their work and the organisation. Employees with high levels of job resources can cope with their daily job demands significantly better and also have potentially lower levels of stress.

Different types of work have different effects on the employees' mental and physical health, as well as motivation and engagement. Therefore, it is important to know how employees perceive their work. Four types of work can be distinguished based on different combinations of job demands and resources: passive, active, low-stress and high-stress work. The survey revealed that in a two-year comparison, the share of those who perceived their job as low-stress decreased by nearly 3 percentage points, while the number of people in passive jobs increased by 5 percentage points. These two types of work are also the most widely represented. A considerably smaller percentage of respondents rated their jobs as active or high-stress. The share of people in high-stress jobs decreased by approximately 2 percentage points during the period. Changes in the share of people in active jobs were less than one percentage point (Figure 3.4.6). The changes in the two-year comparison are small, suggesting that working during the pandemic did not significantly change people's perceptions of their jobs.

Low-stress work and active work are most conducive to employee well-being. These types of work involve higher job resources; employee well-being and work motivation are likely to be the highest, regardless of the job demands. High-stress work has a different effect on employees' mental health than passive work does. In high-stress jobs, the workload often re-

**Figure 3.4.7.** Share of different types of work across job positions, comparison between 2019 and 2021




**SOURCE:** figure by the authors, based on COPSOQ survey data from 2019 and 2021

quires great effort and self-control, while independence, involvement and opportunities for development are limited. Passive work often consists of simple and routine tasks, with limited opportunities for development and little independence or involvement in decision-making.

There were significant differences in how men and women assessed the types of work they do. The share of women doing low-stress work is significantly smaller than the share of men, while women more frequently report doing passive or high-stress work. Women rated their job demands higher than men, feeling that their work pace was faster and workload higher than they would like. More women are engaged in both mentally and physically taxing work, and there are fewer women among employees whose work is varied and motivating and stimulates development. The greater representation of women in passive and high-stress jobs is related to their higher levels of stress and burnout. Women also experience more mood disorders than men do.

There were also differences between job positions (Figure 3.4.7). Among specialists, 40% of respondents were in passive and low-stress jobs. Around 5% of specialists were in high-stress jobs, while specialists formed the largest group among the people in high-stress jobs. They rated their work as varied but found the pace of work fast and the workload high. They also had little say in work organisation matters and time planning.

**The greater representation of women in passive and high-stress jobs is related to their higher levels of stress and burnout. Women also experience more mood disorders than men do.**

**Enabling flexible working hours and remote working is generally positively correlated with work performance and employees' subjective well-being, including fewer sleep problems and feelings of fatigue. However, flexible work arrangements require considerable self-discipline from the employee.**

More than 70% of unskilled workers perceived their jobs as routine, offering little variety and opportunities for development, as is characteristic of passive jobs. They had very little say in matters of work organisation and time planning, and they lacked flexibility in terms of working time and place. The smallest proportion of these workers were in active jobs. The proportion of unskilled workers who rated their job as high-stress increased during the pandemic. During this period, many of the unskilled workers were frontline workers, whose work became more stressful due to the COVID-19 pandemic.

About 60% of managers rated their work as low-stress, their job demands as moderate or low, and their job resources as high. This means that their jobs are varied and offer opportunities for development, and they can organise their work and time use independently. By being able to organise their tasks and plan their time, the employee can distribute their workload and adjust their work pace. Jobs of this type are versatile and motivating, as well as the most beneficial for mental and physical health.

In 2019, there were more people in high-stress jobs among managers than in other positions: 9% of mid-level and top-level managers rated their work as high-stress and their mental and physical health worse than other

employees. By 2021, the proportion of those in high-stress jobs decreased to 6% among mid-level managers and to 3% among top-level managers.

As seen in Figure 3.4.8, employees in high-stress jobs had the worst mental health indicators in both 2019 and 2020. They reported having moderate stress and burnout, as well as a higher rate of occurrence of mood disorders than others. They also rated the degree of work-life conflict as moderate, and their work engagement as somewhat lower than representatives of other types of work. Those in high-stress jobs are at risk of transferring the tensions arising at work to their family life, which can worsen their mental health.

The situation is similar with people in active jobs. Their mental health indicators are somewhat better but also indicate moderate levels of stress and burnout. In contrast to people in high-stress jobs, they have fewer mood disorders and their subjective assessment of their health is higher. They have a moderate level of work-life conflict, although their work engagement is very high. People in active jobs usually have the highest work motivation and satisfaction with personal and professional development.

The mental health indicators of those in passive jobs continue to border on critical levels, reflecting a moderate level of burnout and a critical stress level. Their level of mood disorders is low and similar

**Figure 3.4.8.** Assessments of the psychosocial factors of the working environment by people doing different types of work, and their mental health indicators


**SOURCE:** figure by the authors, based on COPSOQ survey data from 2019 and 2021

**NOTE:** All psychosocial factors are rated on a 100-point scale, in which 100 means the factor is fully present and 0 means it is absent.

to those in active jobs. The level of work-life conflict is also low, which allows us to assume that tensions arising at work do not necessarily disturb family life.

Those in low-stress jobs have the best mental health indicators. Their stress and burnout indicators are below critical levels. Their subjective assessment of their health is higher than that of people doing other types of work. They have the lowest mood disorder and work-life conflict indicators out of respondents in any category of jobs. Their mental health is good and their work engagement indicators are very high, suggesting that people in this type of job can enjoy both their work and their family life.

In a two-year comparison, people doing all types of work subjectively assessed their health as having worsened somewhat, while mental health indicators improved. The exception is people in high-stress jobs, whose mood disorder indicators somewhat increased. At the same time, all the differences are marginal, and their discriminatory power is weak. The results allow us to assume that the mental health of employees is primarily influenced by the type of job they have and less by external events.

## Flexible working time and place as a component of subjective well-being

In a qualitative study on mental health and COVID-19, interviews were conducted with frontline workers, parents and older people in November and December 2020 (Ainsaar et al. 2021). The study shows that for many employees, both the working time and the pace of work increased because, especially for managers and frontline workers, urgent tasks were added to their regular tasks and unexpected events occurred often. The continuously changing information and the overload caused by being constantly available through various communication channels (e.g. telephone, email, Skype, Messenger and Zoom) added stress for managers.

The interviews revealed that flexible working time and place can lead to additional stress due to the context (e.g. working from home). When working from home, people may not have enough opportunities to be isolated from other family members, or work tools may have to be shared. If primary-school children at home need help with schoolwork, the mother's working hours are especially

*I was only able to [work] on weekends. It is not realistically possible to instruct primary school children at home and work at the same time. So, when the school day ends, the work day only begins, and it lasts until midnight if you actually have to get anything done. It would have been different only if the workload had not been so big at that moment and I could have somehow managed it in less time. Well, during the day I managed to answer some emails but not do any thorough, time-consuming things that require concentration and silence and so on.*

**EXCERPT FROM AN INTERVIEW, SOURCE:** Ainsaar et al. 2021, p. 62

fragmented and tend to shift to sleep time. During the pandemic, traditional gender roles were reinforced, which increased stress levels, especially among mothers working from home. While their home- and work-related roles were previously separated in time and place, role conflicts now emerged as both roles had to be fulfilled simultaneously, contributing to psychological tension. Also, women with school-age children had to take on the role of home teacher, which further intensified the role conflict. Those who did not have children found themselves working all the time. Thus, there were several reasons for the time shortage stress: problems related to juggling work and family life, especially for women, on the one hand, and the intensification of work on the other. At the same time, mothers learned to plan time in a new way, making use of all the available gaps (such as children's sleep time). They began to set boundaries between work and free time and to review the expectations arising from the job. Paradoxically, remote workers learned to enjoy and value what they used to take for granted, such as working in an office (and being able to focus only on work) and having schools and kindergartens available for children.

Thus, as the crisis unfolded, people learned to cope with increased stress and tension in a number of different ways. They began to consciously take time for themselves (art, crafts, reading) and left for places with limited access (such as a summer house). Discussing problems

**Among the workforce, special attention should be paid to women who have children in primary school, to workers for whom the pandemic brought many new urgent tasks, and to those whose workload was significantly reduced during the pandemic.**

*Just going to the office has an entirely therapeutic effect at times – imagine that there is silence, you take your coffee and you just work. When I went to the office at some point, even if it was after lunch, it had such a 'wow!' effect – I can just work here without anyone interfering. What a luxury! Before then, going to the office and working there just seemed like a routine.*

*That's the way things are. You can appreciate ordinary things much more, like being able to go to the gym or, wow, I'm here in the office and I can work in silence. Yes, it doesn't relate to the scale; rather, I think that the whole state of emergency and the current situation has also taught me a lot, to be grateful for things that otherwise seemed to be taken for granted. I think this is the positive side of this whole thing. To believe, to believe, to appreciate things that you otherwise took for granted.*

**EXCERPT FROM AN INTERVIEW, SOURCE:** Ainsaar et al. 2021, p. 78

with colleagues using different communication tools, but also limiting communication channels, helped people to cope professionally.

Various studies (including Estonian studies on creative workers in the research and development sector) suggest that enabling flexible working hours and remote working is generally positively correlated with work performance and employees' subjective well-being, including fewer sleep problems and feelings of fatigue. Offering flexible forms of work also often means improved competitive advantages for the employer, as the human resources are used more optimally. However, flexible work arrangements require considerable self-discipline from the employee, who must take control of not only the time of starting work but also the time of finishing work and balance the activities and goals of work and private life.

## SUMMARY

Several changes have occurred in the mental health of Estonian people due to the COVID-19 pandemic. Working people continue to have a higher level of subjective well-being compared to non-working people. Our analysis shows that among the workforce, special attention should be paid to women who have children in primary school, to workers for whom the pandemic brought many new urgent tasks, and to those whose workload was significantly reduced during the pandemic. Attention should also be paid to frontline workers and those who lost their jobs due to the pandemic.

In broader terms, the starting points for a redistribution of labour market advantages can be seen in the pandemic-related changes in working life. People who functioned best in a labour market with fixed working hours, working in a workplace and having a stable working life may now be at a disadvantage vis-à-vis those who perform best with flexible working hours and remote working and who can better adapt to and cope with mental health challenges in changing circumstances that require high self-discipline. It is important to understand that the differences between people in terms of these advantages are formed through the combined effects of both natural (including genetic) factors and factors arising from the living and developmental environment. Some of these factors are under the person's control, while others are not. This means that it is crucial to take into account the individual characteristics of people both in the organisation of work at the employer's level as well as in the design of labour market measures on the national level. More attention should be paid to ensuring different but equal opportunities for different groups of

**More important than salary is a sense of belonging and security and the opportunity to take time for self-realisation, which also supports mental health.**

the working-age population (e.g. working mothers with young children, the unemployed and those whose workload was considerably reduced during the pandemic) to ensure their optimal involvement in the labour market and their work contribution and to improve their subjective well-being.

Overall, people learned new coping mechanisms (time management, choice of communication channels, taking time off and physical separation) due to new situations of tension and stress during the COVID-19 pandemic. More important than salary is a sense of belonging and security and the opportunity to take time for self-realisation, which also supports mental health. The COVID-19 pandemic era has rapidly provided new solutions to enable various social groups to work more flexibly and for management to trust employees to work remotely. Such solutions include flexible options to switch between working from home and in the office, and the development and widespread use of online collaboration tools.

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# 4 Digital technologies and mental well-being

**PHOTO:** Urmas Luik

# 4.0 Introduction

## Digital technologies and mental well-being

KATRIN TIIDENBERG

### KEY MESSAGES

1. Contrary to popular belief, the use of digital technology is rarely the cause of mental health problems. The impact of digital technology on mental well-being depends on the user, the way they use the technology, and the situation of use.
2. Problematic technology use undoubtedly exists but is statistically far less common than generally believed. In the Estonian media, the discussion of digital technology's impact on mental health tends to be exaggerated.
3. Digital technologies are an underused resource for mental well-being. They act as a self-help tool, help expand and diversify social participation and involvement, help create and maintain meaningful relationships, and support the work of mental health professionals. Mindful use and self-regulation skills are important.

### INTRODUCTION

In recent decades, mental health problems have been increasingly associated with digital communication technology, especially the use of smart devices with a screen and social media. However, there is no consensus among researchers on the impact of digital technology. A number of studies find that using smart devices and social media and playing computer games causes mental overload, leading to depression, anxiety, moodiness, sleep and eating disorders, communication problems, and even 'digital dementia'. On the other hand, a similar number of studies claim that the use of these same technologies helps to build relationships, enables participation and belonging, provides support and a sense of security, gives access to information, reduces stress and anxiety, alleviates boredom, provides entertainment, teaches resilience, improves memory in older people, and even helps surgeons achieve a better success rate. The truth does not lie between these two extremes; instead, it lies in the simultaneous validity of both opposing claims. To explain this, I will present some statements confirmed by international studies and discussed in more detail in the articles of this chapter. These help to make sense of how digital technology can support mental well-being even when the relationship between the two continues to be culturally overburdened.

While there are a multitude of digital technologies, this chapter reflects the data available for Estonia and therefore focuses on internet use, computers, smart devices, tracking applications and social media. It looks at mental well-being in general rather than mental health problems in specific. In Estonia, online guided meditations and mindfulness apps are gaining popularity, but the use of digital technologies for activities supporting mental well-being has not yet been sufficiently studied.

## 'Real life' and 'virtual life'

In public discussion and parenting discourse, the distinction drawn between 'real life' and 'virtual life', although dismissed by researchers, continues to be widespread. In fact, we only live one life but do so in ways that are mediated by technology and in ways that are not. This is not to say there is no significant difference between face-to-face and online communication. But it does mean that the contrast between different instances of face-to-face communication (such as whispering sweet nothings to your lover in the park versus yelling at the opposing team's fans in a stadium parking lot) may be greater than the difference between acts of face-to-face communication and online communication (such as talking with grandma at the summer house versus chatting with her on FaceTime). Online communities can become even more important to people than 'real-world' communities. The articles in this chapter discuss some of the alternative groups that have become popular in Estonia in recent years. New spirituality, folk wisdom and conspiracy theory groups on social media function as interpretive and participatory communities that can have a very real-life impact despite the fact that they exist online.

**Contrasting 'real life' with 'virtual life' is pointless. In fact, we only live one life but do so in ways that are mediated by technology and in ways that are not.**

## Impact on mental well-being depends on the user

How and for what purpose someone uses the internet or smart devices, which needs and desires they seek to satisfy, and what the overall impact of their digital technology use is obviously depends primarily on the user. Some people are more vulnerable to developing problematic (e.g. excessive or obsessive) patterns of technology use due to their personality, level of self-esteem, cultural competences and mental health background. It is important to note the direction of the causality here. Although it is commonly argued that technology use is the cause and poor mental health is the effect, research tends to show the opposite. Poor mental health leads to problematic technology use. How we as a society talk about the impact of technology use matters. One of the reasons why studies consistently find drastic differences between perceived and measured effects is due to media coverage that stirs up moral panic.

**Although it is commonly argued that technology use is the cause and poor mental health is the effect, research tends to show the opposite. Poor mental health leads to problematic technology use.**

**Anxious and sensationalist media coverage that constantly talks about addiction causes people to overestimate their own and others' screen time and the impact technology use has on well-being.**

Anxious and sensationalist media coverage that constantly talks about addiction causes people to overestimate both their own (young people) and others' (parents, teachers) screen time and the impact technology has on their well-being.

User-centred studies that analyse the relationship between digital technologies and mental well-being tend to focus on users' age, often looking at children and young people. Despite frequent claims that the mental health of children and young people is deteriorating due to digital technologies, research does not support such generalisations. Based on long-term social studies, Vuorre et al. (2021) analyse how the use of smart devices and social media correlates with depression, suicidality, anger and worry, and compare it with TV watching. They find that the relationship between technology use and depression has actually weakened over the last decade, while social media use is now more strongly correlated with worry and other indicators remain unchanged. Many other researchers collecting data in different countries (see e.g. Rozgonjuk et al. 2020) have arrived at results showing that social media use is not associated with depressiveness. Older people, on the other hand, are facing real mental health risks. In their case, changes in mental

**Research does not support the generalisation that the mental health of children and young people is getting worse due to digital technologies.**

**MORAL PANIC**

Public discourse – often transmitted by the media – that amplifies public concern about social order and values is described as 'moral panic'. In a moral panic, a purported problem is exaggerated, and its causes, consequences, victims and villains are sensationalised. For example, a harmless activity (listening to music) may be depicted as leading to terrible consequences (a school shooting). Technology panic is a type of moral panic that focuses on new technologies. As a rule, each new technology panic is almost identical to previous ones. Over the past couple of centuries, the media has claimed that children (and maybe also women) are being corrupted by, alternately, novels, the telephone, cinema, radio, rock and roll music, comic books, television, VHS tapes, Walkman cassette players, computers, the internet, social networking sites, computer games, smartphones and, most recently, TikTok. According to the media, using these technologies leads to delinquency, excessive individualism, and dangerous sexual and health behaviour, destroying the traditional nuclear family, its values and thus, of course, the whole fabric of society.

**SOURCE:** Tiidenberg and van der Nagel 2021

**Older people's mental well-being is threatened by a lack of digital competence and the non-use of digital technologies.**

well-being are associated with declining cognitive ability and increasing loneliness, which is why a lack of digital competence and the non-use of digital technologies emerge as risks (Quinn 2018). In this chapter, we look at the connections between the use of digital technologies and mental well-being in children, young people, older people and families. The data gathered in Estonia clearly shows a need to reduce generational inequality in digital literacy and access to participation.

## Impact on mental well-being depends on the technology

What digital technology means to the user and how it affects them also depends on the particular properties of the technology. On the one hand, the features and functions of the technology matter – the menu options and buttons, which actions are easy to perform and which are more complicated, and what the rules allow or forbid. On the other hand, users' agency also matters – how people actually use the technology and how they break the rules for ease of use. In academic discourse, the concept of affordances is used to

**The data gathered in Estonia clearly shows a need to reduce generational inequality in digital literacy and access to participation.**

**Platform developers have built their user interfaces based solely on how best to capture and hold users' attention, ignoring our individual and collective well-being.**

describe this intersection between the features of the technology and the users' agency. Thus, the fundamental question is this: What are the mental well-being affordances of each particular technology?

The mental well-being affordances (or lack thereof) of today's digital technology are obviously not a result of divine will. Platforms and applications and their menu options, buttons and rules are created by private companies. The current information disorder and platform design that induces social comparison is a product of the last 25 years, during which governments did not interfere much in the digital technology industry, and platform developers built their user interfaces based solely on how best to capture and hold users' attention. They were not thinking about our individual and collective well-being. At the same time, there has been a dangerous concentration of power in the hands of giant platforms (e.g. Facebook), companies that own various platforms (e.g. Meta, formerly Facebook), and app stores or device manufacturers (e.g. Apple). This means that what could be considered internal business decisions about trade secrets (concerning how the service works or what the buttons, toolbar items and rules of use are) actually significantly shape how we treat each other and what we think is right. This is directly linked to mental well-being. For example, Meta has been aware for years that the algorithm that treats Facebook's 'angry' reaction emoji as worth five times more than a 'like' provokes rage and am-

plifies the spread of misinformation. Likewise, Meta is aware that adolescents with fragile mental health can suffer when Instagram's recommendation algorithm systematically feeds them thin-ideal images (Frenkel 2021). Both algorithms were designed to increase engagement and did so successfully, so Meta was reluctant to change their logic, regardless of user well-being.

## Impact on mental well-being depends on the way technology is used

It is common to measure the use of digital technology in time. However, the American Association of Pediatrics, which first proposed the globally recognised '2 × 2' rule (no more than two hours of screen time per day and not before the age of two), admitted in 2016 that this recommendation was not science-based and did not fit well with the reality of digitally saturated life. Instead of doggedly counting screen time hours, it is important to think about what people do during their screen time and why, with whom and how they do it (Livingstone 2019). Video-calling your grandma, posting on TikTok, browsing Instagram, and playing a computer game are all 'screen time', but these activities stimulate us differently, satisfy different needs and carry different risks. But even this is an oversimplification. It makes a difference whether the computer game a 9-year-old plays for an hour is Grand Theft Auto or Minecraft and whether the child plays alone or with others, or with strangers or acquaintances. It also makes a difference whether a 14-year-old spends two hours scrolling through fitness model content on Instagram or posting her K-Pop drawings to a small fan community and commenting on others' posts. We know from research that mental well-being tends to be supported by creative and participatory uses of technology that foster relationships, a sense of belonging and self-realisation.

**The '2 × 2' rule (no more than two hours of screen time per day and not before the age of two) is not science-based and does not fit well with the reality of digitally saturated life. Instead of simply counting hours, it is important to think about what people do during their screen time and why, with whom and how they do it.**

**In addition to using digital technology that supports our mental well-being or is unavoidable for work or school, we should also get enough sleep, nutrition and exercise.**

Of course, we all only have 24 hours a day, which means that in addition to using digital technology that supports our mental well-being or is unavoidable for work or school, we should also get enough sleep, nutrition and exercise. While time-based tracking can help families reach agreements, it is important to remember that what we do with the time matters.

## Moving forward

When thinking about the future of mental well-being in the context of the digital technologies currently in use and discussed in the articles of this chapter, it is important to note that a significant shift is taking

**Digital competence includes digital self-regulation and self-care – turning off reminders and notifications, blocking content and users, and periodically avoiding social media by practising what is known as digital fasting.**

place. For ordinary users, digital technology is inescapable, useful and helpful but also intrusive, tiring and disempowering. A critical stance is replacing naive enthusiasm. In the process, more and more people are actively managing their technology use. Based on recent research, people's digital competence increasingly includes digital self-regulation and self-care. This means turning off reminders and notifications, blocking content and users, and periodically avoiding social media or other platforms by practising what is known as digital fasting. Hopefully, this will usher in a more conscious and balanced use of technology that also serves our mental well-being.

Another way to think about the future of mental health is in terms of future technologies. Artificial-intelligence-based diagnostics and treatment and digital pills have been developed but are still in their infancy. Interventionist technologies (apps and online spaces intended to help people with mental health problems or support the work of professionals) have been around for a while longer, but we still have too little data for their evidence-based evaluation.

However, for both current and future technologies, it is important whether they are designed and built to support well-being, and how problems are resolved that become apparent during use. So far, the regulation of digital giants has been driven by the logic of an emerging industry and economic growth – the companies have been largely self-regulating. We now know that this laissez-faire approach has not been justified when it comes to ensuring (mental) well-being. It is time to opt for a human-centred and well-being-oriented approach. Whether digital technologies are developed, designed and regulated to serve well-being is a much more important question for the future of mental health than the number of hours a day people use a computer.

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# 4.1 Use of digital tools, digital skills and mental well-being

VERONIKA KALMUS, TIINA TAMBAUM AND LIILI ABULADZE

## KEY MESSAGE

**Estonian internet users aged 12 to 16 have satisfactory digital skills and mental well-being indicators compared with other European countries, while excessive internet use predicts lower levels of mental well-being in young people. The middle-aged and older population (aged 50 and over) tend to have problems with digital skills, while people with better digital skills feel less lonely and depressed. Although the factors affecting mental well-being are different in these two age groups, how and in what context digital skills are acquired is essential in both cases.**

## INTRODUCTION

In the digital age, information technology tools and environments play an important role in everyday life – in learning, communicating, using services and elsewhere. This is why, in 2006, the European Parliament included digital competence among the eight key competences of the 21st century. A key competence is a combination of knowledge, skills and attitudes that all people need to ensure success, self-realisation and personal development, active citizenship, social inclusion and employment. Therefore, digital competence is vital for all people, regardless of age.

Obstacles to the use of digital tools, including a lack or low level of digital competence, are considered a form of social deprivation. Social deprivation increases the risk of exclusion, which in turn affects mental health and well-being. Children, youth and older people are the most vulnerable. The relationships between digital competence and mental well-being manifest in different ways at different ages. These complex and indirect associations in children and youth have not been researched extensively. Evidence shows that young people's better digital skills are linked to their greater experience with online risks, but there are no links to online harm. Greater digital competence may reduce harm, as digitally competent young people are better able to cope with online risks (Haddon et al. 2020).

While technology is regarded as a stimulating environment for successful ageing, the rapid development of technology also creates psychological pressure in older people. Research reveals that the use of digital tools in older

**DIGITAL COMPETENCE** is the ability to use information and communication technology to benefit oneself and others in everyday life and reduce potential harm. Digital competence incorporates several digital skills, such as information management and data literacy, communication and collaboration, digital content creation, safety and problem-solving.

age improves the quality of life, subjective well-being and self-reported health. Older people are discouraged by their lack of digital competence (Tambaum 2021). When managing the digital environment becomes too much for older people, they tend to blame themselves and their age and feel they are of less value.

In this article, we look at the mental well-being and coping of two vulnerable groups – Estonians aged 12 to 16 and those older than 50 – in a rapidly changing digital environment and compare this with international results. We focus on the links between mental well-being and the use of digital tools and self-reported digital or computer skills.

## Mental well-being of young Estonian internet users in the European context

EU Kids Online, a network of researchers from more than 30 countries who aim to help children be safer and more aware on the internet, has studied the main trends in young people's internet use in Europe, including Estonia. This article is based on data from the second round of the EU Kids Online survey, collected mainly in 2018 in 19 European countries,[1] from children aged 9 to 17 and their parents (N = 25,101). We look at 12-to-16-year-old internet users in our analysis, since in most countries only adolescents were surveyed about digital skills and mental well-being, and 17-year-olds were not included in some countries. For comparability, we included 16 countries (N = 12,018) with weighted data representative of the general population.

The EU Kids Online survey measured young people's mental well-being on a scale of emotional problems consisting of four statements ('I worry a lot', 'I am nervous in certain new situations; I easily lose confidence', 'I am often unhappy, sad or tearful', 'I have many fears and I am easily scared'; response scale 1 – not true for me … 4 – very true for me) and on a life satisfaction scale ('Imagine that the top of the ladder "10" is the best possible life for you and the bottom "0" is the worst possible life for you. In general, where on the ladder do you feel you stand at the moment?').

1 The EU Kids Online 2018 survey in Estonia was funded by the Estonian Internet Foundation, the Ministry of Education and Research (from the European Social Fund), the Ministry of Justice, the Ministry of Social Affairs, and the research projects PUT 44 (Estonian Research Council) and IUT 20-38 (Ministry of Education and Research). Turu-uuringute AS collected the data.

## Safety of the digital environment and emotional problems

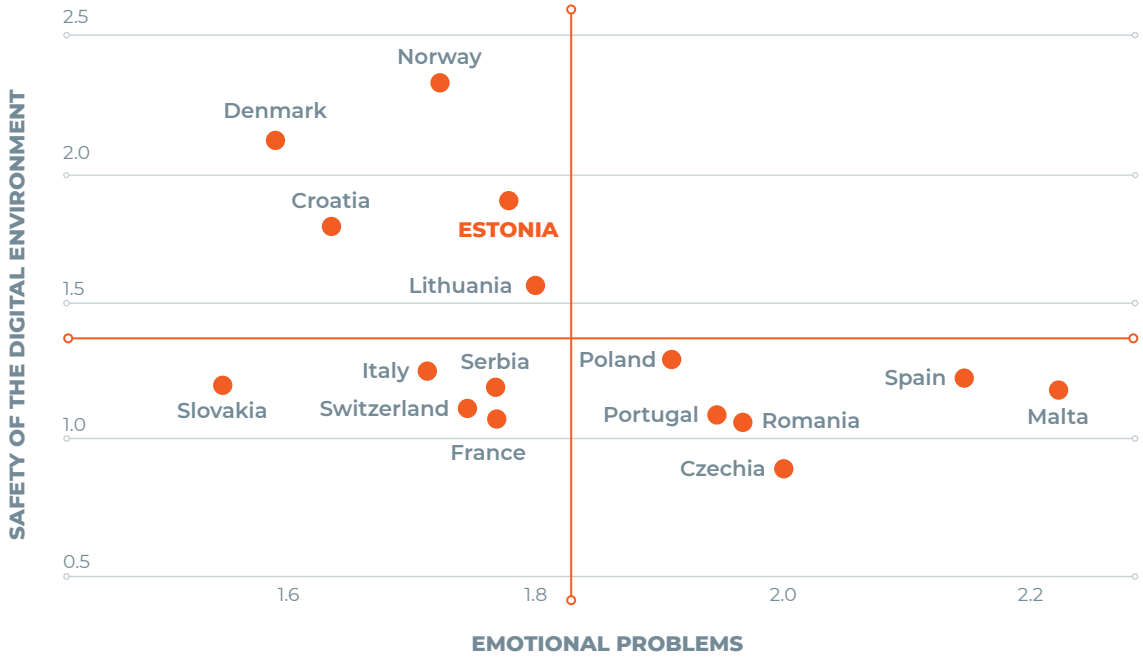
**Young people who perceive the digital environment as safe have somewhat fewer emotional problems.**

We assume that the digital environment, where young people operate every day, influences their mental well-being. The EU Kids Online survey reveals that young people who perceive the digital environment as safe have somewhat fewer emotional problems (Pearson's r = -0.11; p < 0.001). The same pattern is evident when comparing the average aggregate indicators of the countries (see Figure 4.1.1; Pearson's r = -0.47; p = 0.07).

On the international comparison matrix (Figure 4.1.1), Estonia's young people have slightly fewer emotional problems than the average in the 16 European countries, but their perceived safety of the digital environment is significantly higher than the average in the 16 countries. Estonia is most similar to other countries in the Scandinavian and Baltic region – Lithuania and Norway. For example, only 3% of 12-to-16-year-olds in Estonia stated that they never feel safe on the internet, while more than 14% of young people in Romania, Italy and Switzerland agreed with that statement (Figure 4.1.2).

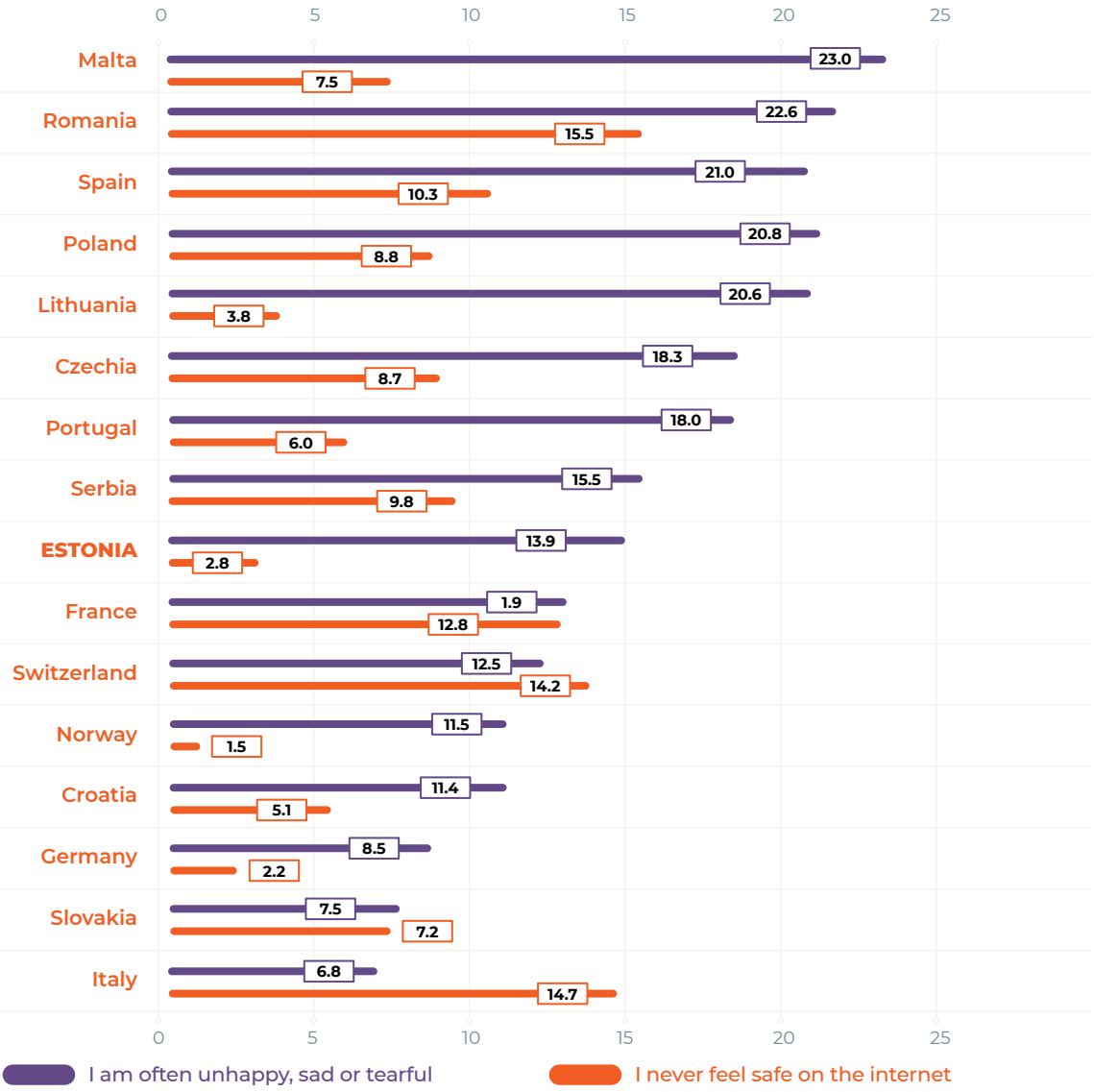
One in seven Estonian adolescents stated that they are often unhappy or tearful (Figure 4.1.2), which indicates a serious problem in their mental well-being. The average level of unhappiness was higher in eight countries and lower in seven. Thus, according to one of the

**Figure 4.1.1.** Emotional problems and the perceived safety of the digital environment among 12-to-16-year-olds in European countries (averages of the scales; lines indicate the average of the sample)




**SOURCE:** figure by the authors, based on EU Kids Online data from 2018

**Figure 4.1.2.** Self-reported internet safety and emotional state of 12-to-16-year-old young people in European countries (percentage of those who agreed with the statement)




**SOURCE:** figure by the authors, based on EU Kids Online data from 2018

main indicators and the aggregate feature consisting of four indicators presented in Figure 4.1.1, Estonia falls within the average of the European countries studied in terms of the prevalence of emotional problems among young people.

## Digital skills and life satisfaction

Digital competence plays an important role in coping with modern life. Therefore, we hypothesised that young people's digital skills are related to another indicator of mental well-being – life satisfaction. A weak link was revealed: European adolescents who consider themselves more digitally com-

**Adolescents who consider themselves more digitally competent tend to be slightly more satisfied with their lives.**

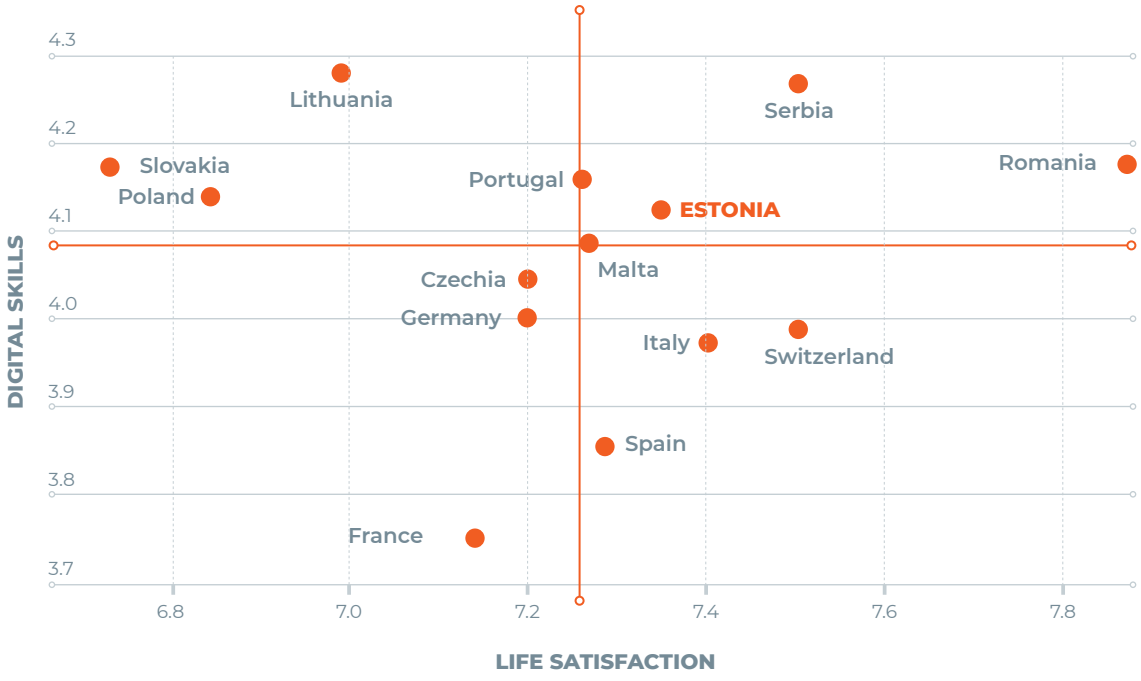
petent tended to be slightly more satisfied with their lives. Estonia is among the countries where the average indicators of both young people's life satisfaction and self-reported digital skills are slightly higher than in the other countries studied (Figure 4.1.3). Lithuania stands out among neighbouring countries: young people's self-reported digital skills are significantly higher, while the level of life satisfaction is considerably lower.

In summary, the indicators of mental well-being of Estonian youth aged 12 to 16 are average or satisfactory compared to 16 other European countries. Among other things, the fact that Estonian adolescents perceive the digital environment as relatively safe and that their digital skills are good compared to other countries could play a role in this. Unlike in some other countries, there are no gender or age gaps in the digital skills of young people in Estonia (Smahel et al. 2020, pp. 37–38).

## How important is the digital environment's influence on the mental well-being of Estonian youth?

The role of the digital environment in shaping mental well-being must be viewed in a broader context and considering social inequality. For this, we first analysed Estonian adolescents' emotional problems and life satisfaction by gender, age, ethnicity, type of residence and perceived socioeconomic status (see Figure 4.1.4). Emotional problems are significantly more prevalent

**Figure 4.1.3.** Self-reported life satisfaction and digital skills of 12-to-16-year-olds in European countries (averages of the scales; lines indicate the average of the sample)




**SOURCE:** figure by the authors, based on EU Kids Online data from 2018

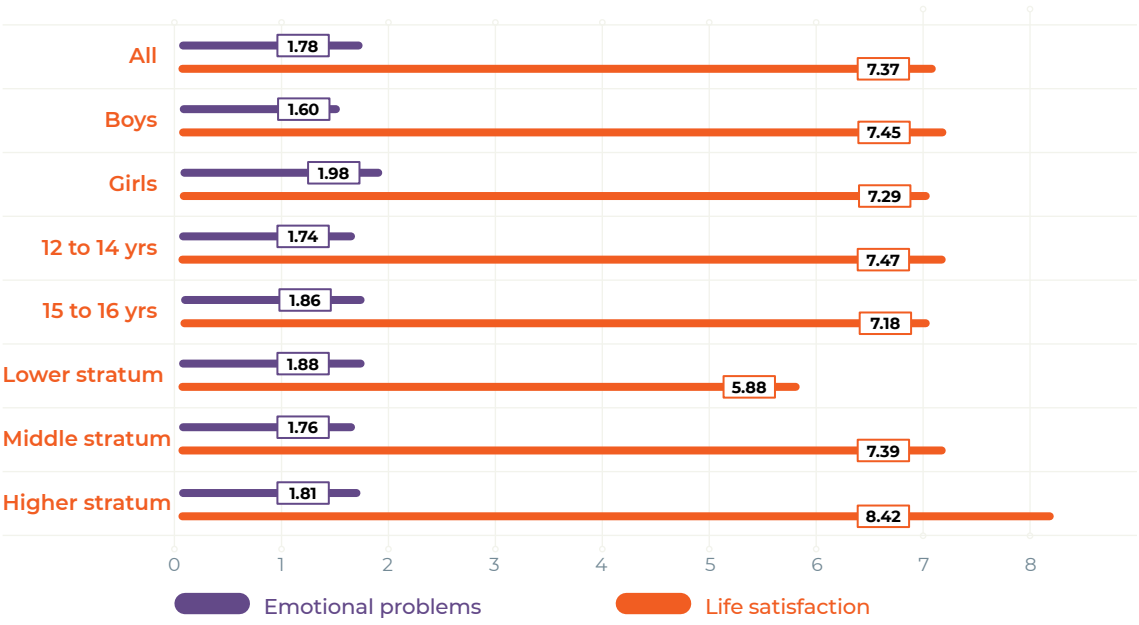
in girls (significant difference at level $p < 0.001$) and somewhat more prevalent in 15-to-16-year-olds ($p = 0.06$). Furthermore, older adolescents have slightly lower life satisfaction ($p = 0.08$).

We used self-reported social status to indicate the socioeconomic dimension. It was measured on a ten-step social 'ladder', where the respondents could place themselves and their family based on wealth and parents' level of education and employment position. As expected, young people's life satisfaction is strongly correlated with perceived social status ($p < 0.001$): adolescents who place themselves in the lower stratum (ranking 0–5) are the least satisfied with their lives, and those placed in the higher stratum (ranking 8–10) rate their life satisfaction the highest (Figure 4.1.4). Young people's emotional problems do not depend on the socioeconomic dimension. The mental well-being of Estonian youth is not related to ethnicity (based on response language) or type of residence (size of settlement).

In order to find out what the mental well-being of Estonian youth depends on the most, we analysed gender, age and social status alongside personality traits and characteristics describing the digital environment, school and family environment in regression analysis models. The personality traits and environmental characteristics we tested included sensation seeking, the safety of the digital environment, digital skills, the variety of online activities, parental and teacher mediation of internet use, and support from peers and friends. The model in which being female, perceived discrimination (bullying) and self-reported excessive internet use played the largest role

**Emotional problems occur significantly less in young people with higher self-efficacy.**

**Figure 4.1.4.** Emotional problems and life satisfaction of Estonian youth aged 12 to 16 by gender, age and social status (averages of scales)




**SOURCE:** figure by the authors, based on EU Kids Online data from 2018

**SELF-EFFICACY** is an individual's belief that they can cope with goals, tasks, new situations and problems. Among European and Estonian youth, self-efficacy is strongly related to digital competence (Mascheroni et al. 2020). In the digital age, self-efficacy increases with growing digital competence, which in turn promotes mental well-being.

**Table 4.1.1.** Variables affecting the mental well-being of Estonian youth aged 12 to 16 (red/green background colour = a higher value of the predictive variable decreases/increases mental well-being)

| PREDICTIVE VARIABLES | DEPENDENT VARIABLE: EMOTIONAL PROBLEMS | DEPENDENT VARIABLE: LIFE SATISFACTION |
|---|---|---|
| Gender (0 = boy, 1 = girl) | 0.240 | |
| Age | 0.097 | |
| Higher social stratum | | 0.442 |
| Excessive internet use | 0.205 | -0.102 |
| Self-efficacy | -0.116 | 0.178 |
| Perceived discrimination | 0.213 | |
| Supportive family environment | | 0.164 |
| Supportive school environment | | 0.099 |

**SOURCE:** figure by the authors, based on EU Kids Online data from 2018

best predicted the likelihood of emotional problems (Table 4.1.1). Emotional problems occur significantly less in children with higher self-efficacy and in younger children.

High self-reported social status, self-efficacy and a supportive family environment (meaning that their family listens to them and provides help) best predict life satisfaction in adolescents. A lower level of self-reported excessive internet use and a supportive school environment (supportive fellow students and teachers) are also important.

Therefore, the mental well-being of Estonian youth is largely influenced by individual traits and the immediate social environment. Self-reported excessive internet use turned out to be the most important digital environment trait. In more serious cases, this could also be connected to mental health problems (Sisask and Streimann 2020).

**The mental well-being of youth in Estonia is largely influenced by individual traits and the immediate social environment.**

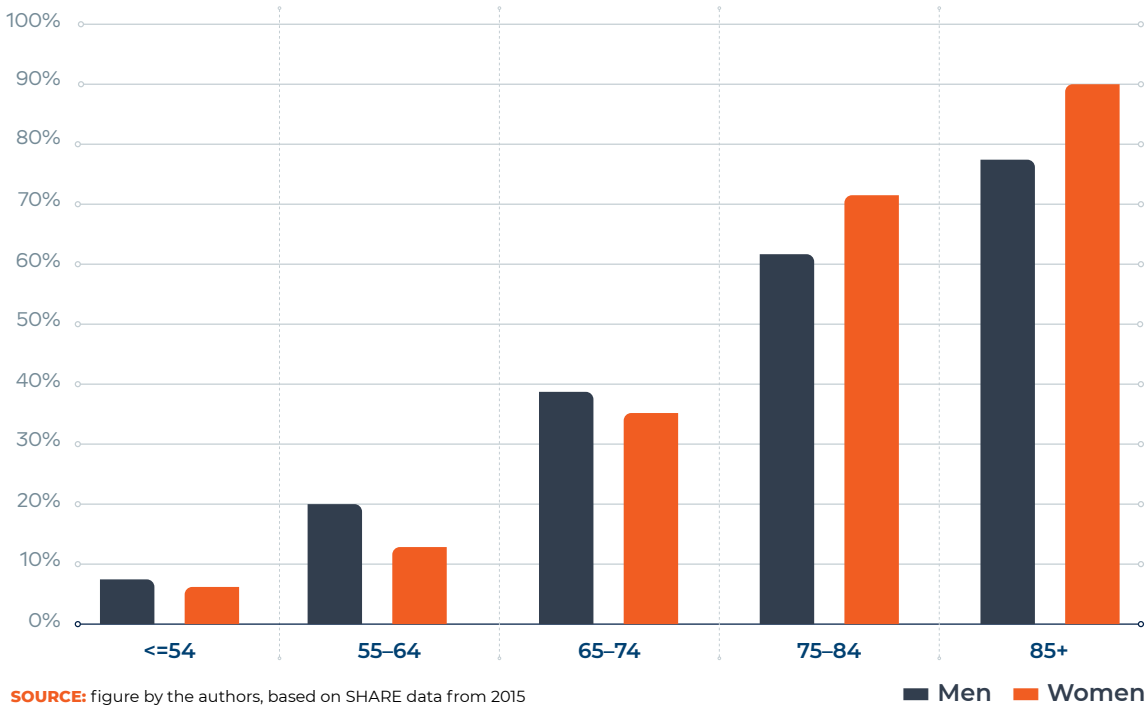
## Computer literacy and internet use of middle-aged and older Estonians

The international longitudinal study SHARE (Survey of Health, Ageing and Retirement in Europe) covers the Estonian population aged 50 and over and their use of digital tools, self-reported digital skills and subjective well-being, quality of life and cognitive abilities. In Estonia, more than 7,500 people aged 50 and over have been surveyed every other year since 2011. The following questions were asked about the use of digital tools in 2013 and 2015: 'Have you used the internet at least once in the past seven days to send e-mails, search for information, make purchases or for other purposes?' Self-reported digital skills were measured with the question 'How would you rate your computer skills? Would you say they are ... excellent, very good, good, fair, poor?' There was another option: 'I never used a computer' (checked only if the respondent said this spontaneously).

In 2015, 38% of people aged 50 and over in Estonia had never used a computer; two years earlier, the same figure was 45% (Tambaum 2019). According to this measure, Estonia ranks only slightly above the average among 18 European countries. As expected, there are more people not using a computer in older age groups, but, for example, 20% of men and 13% of women aged 55 to 64 had also never used a computer (Figure 4.1.5).

Computer and internet use by middle-aged and older people is primarily influenced by external circumstances, especially whether they needed to use a computer in their current or most recent job. Only 16% of employed people do not use computers and the internet. This figure is 60% among not employed respondents. Estonian men between the ages of 55 and 64 differed the most from other SHARE countries. Half of Estonian men of this age did not use the internet regularly, while in the other countries the figure is

**Figure 4.1.5.** Estonian people over 50 who have never used a computer, by gender and age (% of age group)




**SOURCE:** figure by the authors, based on SHARE data from 2015

**The main reason older adults do not use the internet is not the absence of opportunities but the lack of skills.**

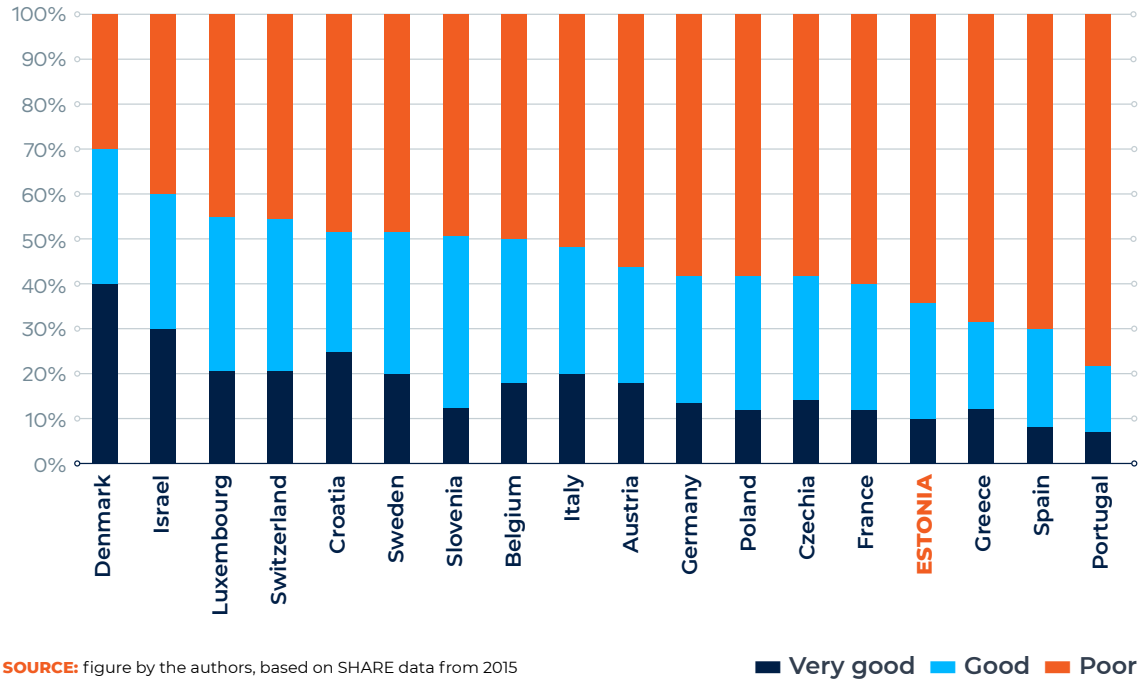
30%. Men who live with a partner use the internet more than those who live alone (39% and 56%, respectively). Estonian older adults' relative lag in digital skills is also evident in the use of public e-services. This, in turn, points to years of unequal treatment in communication with the state and in participation in democratic governance (Solvak et al. 2019).

The main reason older adults do not use the internet in Estonia and Europe is not the absence of opportunities but the lack of skills. The PIAAC survey (Programme for the International Assessment of Adult Competencies) revealed that although older people in Estonia are outstanding in both functional reading and mathematical literacy, their problem-solving skills in a technology-rich environment are weak (Halapuu and Valk 2013). According to the SHARE survey, 64% of people who used the internet in 2015 evaluated their computer skills as fair or poor (Figure 4.1.6).

The data of the two waves of SHARE surveys show that self-reported digital skills tend to decrease over time. In the space of three years (2013–2015), only 5% of Estonian people aged 55 to 64 in 2015 and participated in both waves acquired computer literacy. In the same group, 17% experienced a drop in self-reported skills, and 5% assessed their skills as having become nonexistent. On the one hand, the

**In older age, digital skills are always related to a specific need, and when the need disappears, certain skills tend to fade.**

**Figure 4.1.6.** Self-reported computer literacy (% of those who have skills) among Estonian computer users aged over 50 (very good: evaluations 'excellent' and 'very good'; poor: evaluations 'fair' and 'poor')



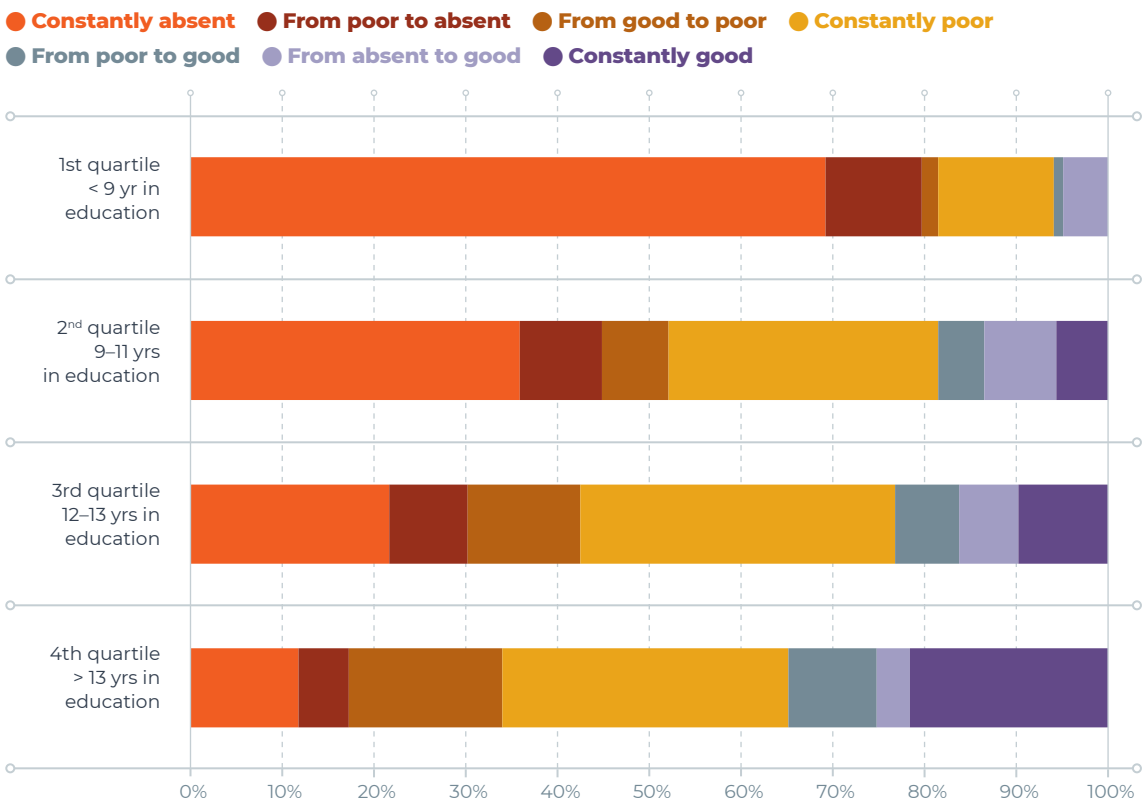

**SOURCE:** figure by the authors, based on SHARE data from 2015

**People who do not have constant access to digital skills instruction have fewer opportunities to keep up with changes in technology and software.**

deterioration of digital skills is related to changes in the lives of the observed age group, such as leaving the workforce. In older age, digital skills are always related to a specific need, and when the need disappears, certain skills tend to fade. On the other hand, these skills are dynamic, as digital technology changes and develops constantly, and subjective self-reports are influenced, among other things, by how other age groups' increasing skills are perceived. People who do not have constant access to digital skills instruction have fewer opportunities to keep up with changes in technology and software. Moreover, in adult education in Estonia, digital skills are mainly taught through imitation. When learning through imitation, new skills are acquired, but with no complex understanding, so the person cannot transfer the skills to a changed situation.

At first glance, it is surprising that the higher the respondent's level of education, the more likely self-reported skills were to decrease over time (Figure 4.1.7). People with higher education are probably more likely to take part in digital skills courses without a specific goal, just in case. If the training does not help with applying the skills and no further training is provided as technology progresses, the skills will disappear. This can explain why

**Figure 4.1.7.** Change in computer literacy by quartile of years in education in Estonia between 2013 and 2015, among those who were aged 55 to 64 in 2015 (% of people who responded in both waves)




**SOURCE:** figure by the authors, based on SHARE data from 2013 and 2015

the change in skills over time is greater among the highly educated than among the less educated. It is also common for people to pick up unskilled jobs as they get older, and the digital skills they acquired for a profession are no longer needed.

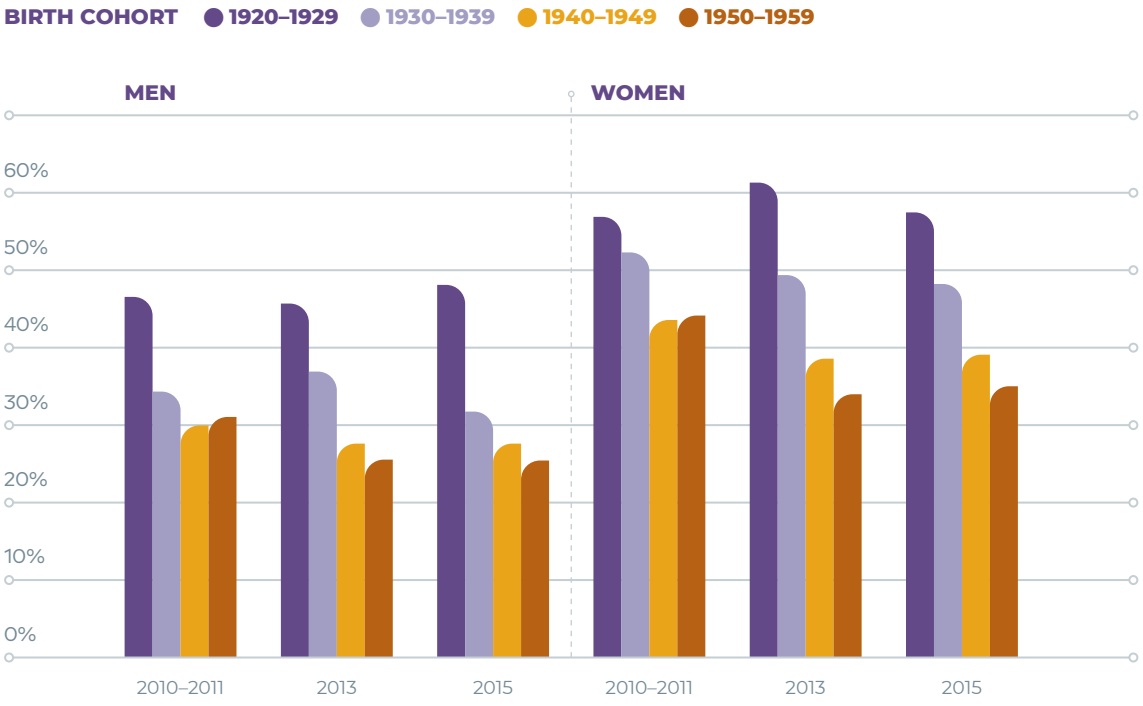
## Depressiveness and loneliness in middle-aged and older adults and their association with digital skills

In the SHARE survey, depressive symptoms are assessed with the EURO-D scale, which includes low mood, suicidal ideation, pessimism, guilt, irritability, feeling lonely, changes in sleep and appetite, lack of interest, fatigue, decreased concentration, tearfulness and lack of enjoyment. A person who reports at least three of these symptoms coming up in the previous four weeks is considered depressive (Abuladze et al. 2020).

Loneliness – the lack of meaningful human relationships and communication – is one of the signs and risk factors of depressive symptoms. Loneliness is measured in the SHARE survey on the R-UCLA three-point scale, asking the respondents how often they feel a lack of companionship, exclusion or isolated from others. Total points on the scale range from 3 to 9. People with 5–9 points are considered very lonely; those with 4 points are considered moderately lonely; and those with 3 points are considered not lonely.

Among European countries, Estonia has one of the highest rates of depressiveness in middle-aged and older people. According to 2011 data, 42% of people in Estonia aged 50 and over were depressive. In 2013, this figure dropped to 34%, and in 2015, it stayed the same. Figure 4.1.8 shows the change by gender and birth cohort. In general, depressiveness is more prevalent in women and people aged 80 and over – more than half of them reported depressive symptoms in all waves of the survey.

**Figure 4.1.8.** Prevalence of depressiveness (%) and change by birth cohort 2010–2015 in Estonian men and women




**SOURCE:** figure by the authors, based on SHARE data from 2010–2011, 2013 and 2015

There are rather few very lonely people in Estonia – 2.0% of the total sample in 2013 and 2.2% in 2015 (Figure 4.1.9). Very high loneliness is more common in older age; differences between genders are less noticeable here. In 2013, 5.6% of men born in the 1920s were very lonely; in 2015 this figure increased to 10.3% (the figures are similar among women). Among younger people, the respective indicators are in the range of 1.0–1.5%. People with less education (eight years or less) have a higher risk of loneliness than those with more years spent in education.

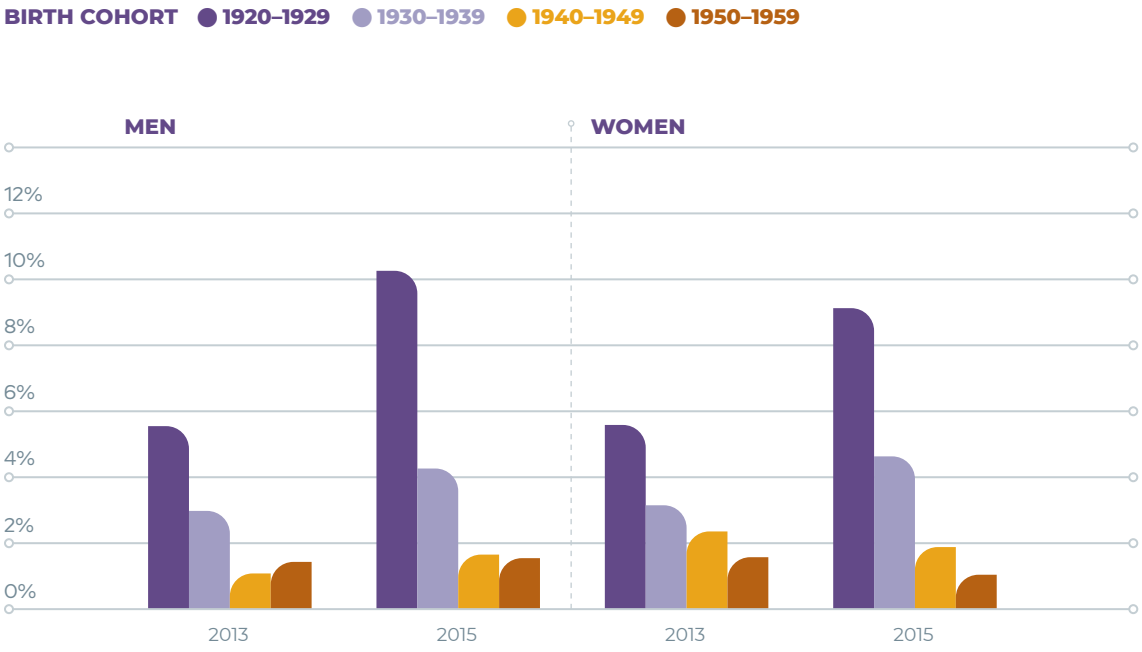
SHARE 2015 data reveals that Eastern European countries have some of the highest rates of lonely men. The rates of lonely women are highest in Southern Europe and the Mediterranean countries, followed by Eastern Europe.

The number of depressive symptoms among middle-aged and older people who use the internet is somewhat lower than among non-users in Estonia and the other countries that participated in the survey. Also, not using the internet has a significant relationship with loneliness. In Estonia and the other countries, loneliness among internet users is below average (< 4), and non-users have a higher than average feeling of loneliness (> 4).

The occurrence of depressiveness is also significantly related to the level of computer literacy. The more literate people were, the fewer depressive symptoms they had on average, among both men and women in Estonia and in the other countries (Figure 4.1.10).

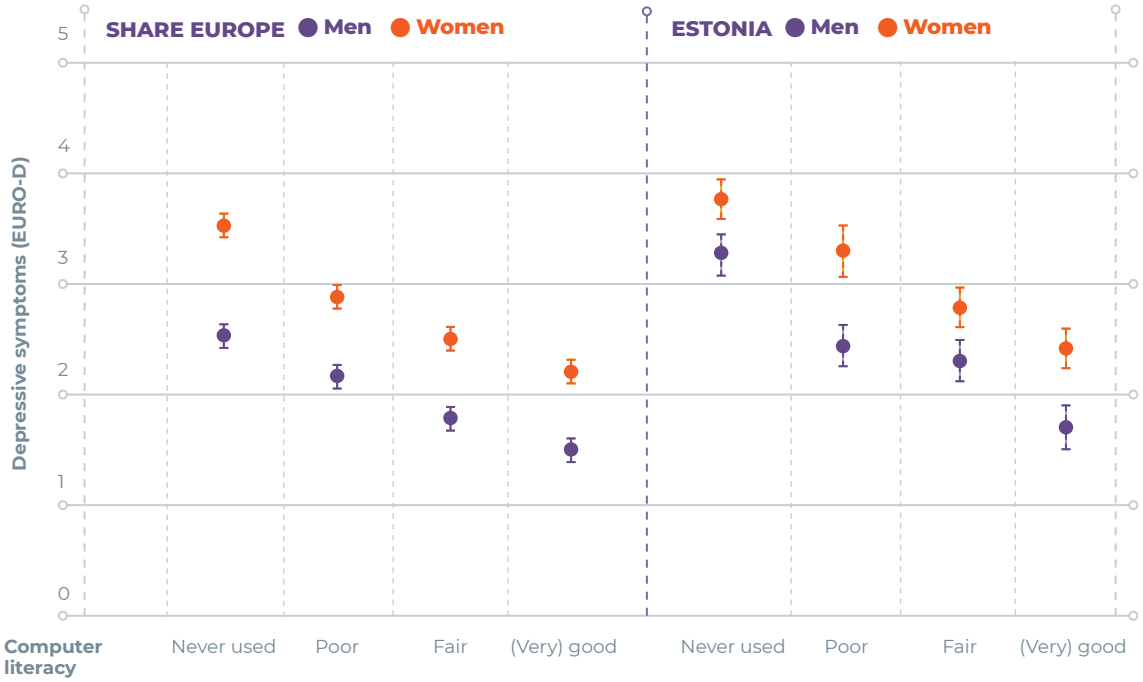
**Loneliness among middle-aged and older internet users is below average, and non-users have a higher than average feeling of loneliness.**

**Figure 4.1.9.** Share of very lonely people (%) and change by birth cohort 2013–2015 in Estonian men and women




**SOURCE:** figure by the authors, based on SHARE data from 2013 and 2015

**Figure 4.1.10.** Depressiveness in all SHARE European countries (left) and in Estonia (right) in men and women, by self-reported level of computer literacy (average number of depressive symptoms with 95% confidence intervals)




**SOURCE:** figure by the authors, based on SHARE data from 2015

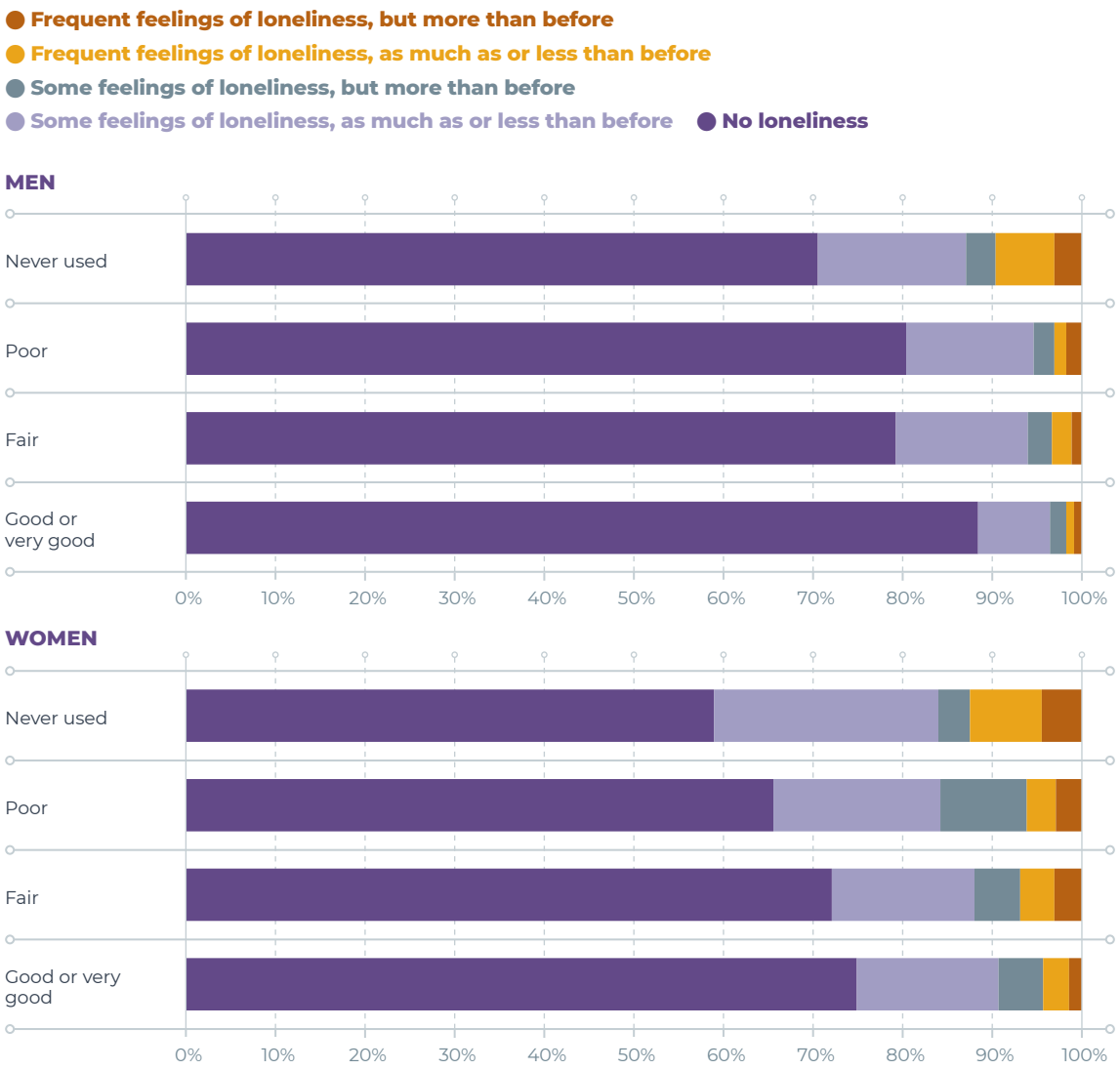
## Mental well-being of middle-aged and older Estonian population during the COVID-19 pandemic

To study depressive symptoms (EURO-D scale) and loneliness during the first wave of the COVID-19 pandemic[2] and their association with digital skills, people aged 50 and over taking part in the SHARE panel survey were interviewed by phone in June and July 2020. In general, the first wave of the coronavirus pandemic did not have a significant impact on the loneliness and depressiveness of middle-aged and older people in Estonia. During the first wave of the pandemic, there were very few cases of COVID-19 in Estonia, and so the new situation may not have affected people's health much yet. Internet use and the confidence that comes from having good digital skills, however, helped ward off feelings of loneliness both before and during the coronavirus crisis.

Among internet users, 16% of men and 26% of women felt lonely before the pandemic and during the COVID-19 restrictions as well. The corresponding indicators were higher among non-users: 27% of men and 39% of women felt lonely. There were no differences in depressiveness between internet users and non-users. People with higher computer literacy were also less lonely (Figure 4.1.11), both before and during the first wave of the pandemic.

2 Loneliness was measured in the SHARE COVID questionnaire with two questions: (1) How much of the time do you feel lonely? 1. Often 2. Some of the time 3. Hardly ever or never; and (2) Has that been more so, less so or about the same as before the outbreak of COVID-19? 1. More so 2. Less so 3. About the same.

**Figure 4.1.11.** Loneliness and its change (%) during the first wave of COVID-19 in 2020 among men (above) and women (below) over 50 in Estonia, by self-reported level of computer literacy




**SOURCE:** figure by the authors, based on SHARE COVID-19 study data from 2020

People aged 50 and over who rarely or never communicated with their children were more likely to feel lonely. Changes in communicating with other people were not clearly related to loneliness. It is possible that when the COVID-19 restrictions were introduced, the use of technological tools increased mainly because of the need to communicate with people close to one. People who had less contact with their children overall used computers less during the coronavirus pandemic.

**Internet use and the confidence that comes from having good digital skills helped ward off feelings of loneliness both before and during the coronavirus crisis.**

## SUMMARY


Using digital tools and developing the necessary skills is not just another interesting activity for young people or middle-aged and older people – it is closely connected to their mental well-being. The situation of Estonian 12-to-16-year-olds is satisfactory in comparison with the other European countries studied, but there is room for improvement in the development of young people's digital competence and mental well-being. Although Estonian adolescents perceive the digital environment as quite safe and their self-reported digital skills are relatively good, a significant number of young people have emotional problems. The mental well-being of Estonian youth is largely influenced by individual traits, especially self-efficacy, and the immediate social environment – a supportive family and school, and relationships with peers. Self-reported excessive internet use turned out to be the most important trait related to the digital environment. This could lead to a vicious circle: excessive use of the internet causes problems at home and school, and without finding support and help, young people escape even further into the depths of the online world.

The situation of middle-aged and older people in Estonia is more problematic. Although their average indicators of loneliness are lower than in most of the European countries examined, the level of depressiveness among people aged 50 and over in Estonia is one of the highest in Europe. The prevalence of depressiveness and the risk of loneliness increase with age, but age should not be considered the main or the direct cause of mental health problems. Since, among middle-aged and older people, not using the internet and having little or no computer literacy are significantly related to both depressiveness and loneliness, the causes of problems with mental well-being are related, among other things, to their ability to function in the digital environment. The period of COVID-19 restrictions clearly showed that more frequent communication with children and using technological tools is associated with less depressiveness and feelings of loneliness.

Unfortunately, Estonian people aged 50 and over report their computer literacy as relatively poor in the context of other European countries, and their subjective perception of their lag in skills rather increases over time. Furthermore, a digital divide is evident in this age group: older people, people with a lower level of education and those not employed are significantly more likely to have lower computer literacy.

The gaps between different generations increase as digital tools are used more and more in everyday life. The generational digital divide, or the problem of middle-aged and older people not using digital tools or having few skills, is not the problem of one or two generations. It is a phenomenon that accompanies the developing digital society, and it requires systemic and structural solutions (Tambaum 2021). Although different issues affect the mental well-being of young and older internet users, the ways and the contexts of acquiring new skills and the ways of providing instruction are increasingly important for both groups.



**Using digital tools and developing the necessary skills is not just another interesting activity for young people or middle-aged and older people – it is closely connected to their mental well-being.**

When teaching older people outside the home, the instructors should be people who know not only how to use digital tools but also how to share those skills (Tambaum 2021). In addition to digital skills, young people need to develop their self-efficacy and social sensitivity and learn self-management and social coping skills.

**The more digital tools are used in everyday life, the more the gaps between different generations increase if the older generations do not get support in developing their skills.**

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# 4.2
# Participatory culture and digitally mediated mental well-being practices

KATRIN TIIDENBERG, BERIT RENSER, MARKO UIBU AND RIIN SEEMA

## KEY MESSAGE

**In Estonia, alternative social media groups fill the gaps created by a lack of resources in the healthcare system; yet, they are outside of the remit of the healthcare system. For many, alternative groups are one of the few spaces where they can talk about topics important to them and find understanding and support. The views shared in these groups can empower individuals, but in doing so, they can both support and undermine their mental health and well-being.**

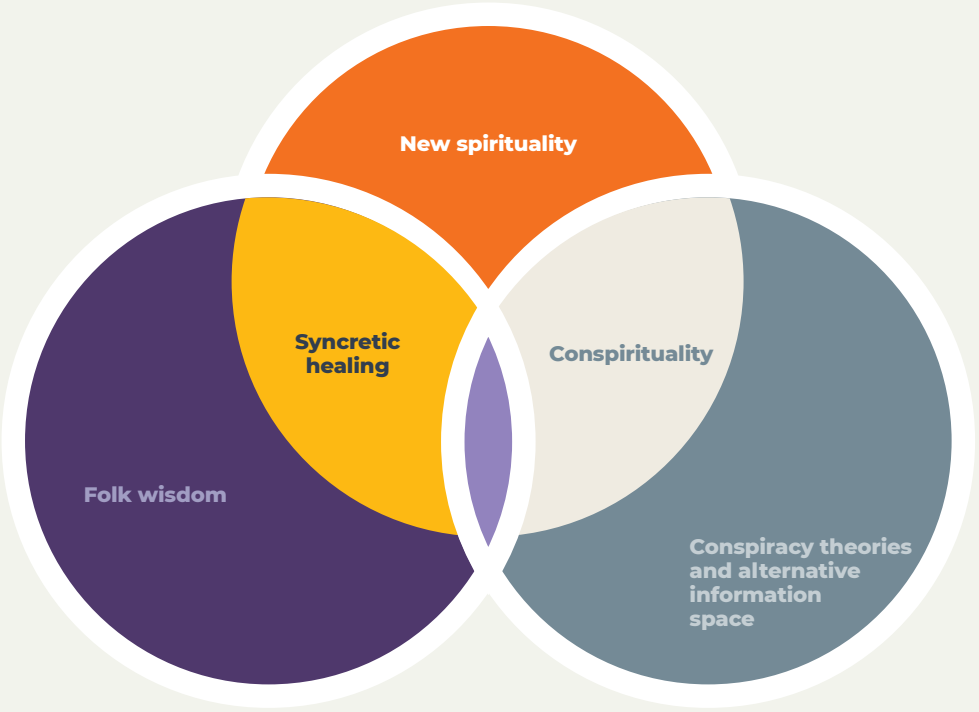
## INTRODUCTION

New practices, beliefs, and even technological innovations emerge where the internet meets mental health. This article focuses on informal social media groups that offer alternative interpretations of mental health issues and solutions to them. We use the term 'participatory mental health practices' to describe the interactive, remix-based health and well-being practices enabled and mediated by digital and internet technologies and driven by the logics of participatory culture. These practices are about creating and consuming online content and communicating about mental well-being, including offering support and asking for help. As a result, new relationships, roles and hierarchies emerge between people, as well as new ways of interpreting the world.

Mental-health-related participatory cultures and practices can align with scientific research (e.g. support groups that bring together people with a specific diagnosis or experience) and thereby support the efforts of health organisations, but there are also plenty of groups that contradict institutional views. This article analyses new-spiritual, conspiritual and folk-wisdom social media groups that are more inclined to create interpretations diverging from institutional views. We use 'alt-interpretive groups' as an umbrella term to describe all these collectively (see Figure 4.2.1 for the links between different alternative interpretations).

'Folk wisdom', which refers to the transgenerational collection of the life experiences of ancestors, is a term familiar to many. However, new spirituality and conspirituality are probably less well known. 'New spirituality' is an umbrella term that includes the more esoteric neo-pagan practices such as witchcraft and shamanism; meditation and mindfulness, which are gaining popularity as science-based in the Western world; and

**Figure 4.2.1.** The field of alt-interpretive mental health and well-being discussed in this article




**SOURCE:** figure by the authors

reiki and yoga, which blur the boundaries of sports, health behaviour and spirituality. New spirituality is characterised by syncretism, or mixing modern and traditional, spiritual and physical, religious and secular, local and foreign ideas and practices and combining them based on preferences and needs (Uibu 2016). When new spirituality is accompanied by a belief in conspiracy theories and pseudoscience, it is described as 'conspirituality' (from the words 'conspiracy' and 'spirituality'). In the broadest sense, conspiritual groups are united in their opposition to the mainstream.

This article analyses what is happening in alt-interpretive groups from a wider cultural and historical perspective. In doing so, we do not judge the members, activities and beliefs of the groups, as their activity can both support and undermine their mental health. We discuss the implications of participatory mental health practices in alt-interpretive groups and conclude with some suggestions for policymakers, mental health experts and general readers who may be interested in such groups.

## Participatory mental health practices in a historical and cultural context

People's choices and the options available to them should always be seen in a cultural, social and historical context Estonia's current vision for mental health considers self-help and community support critically important as a base level of activities and services supporting mental health (see Figure 1.5.1; Randver et al. in Chapter 1).

The Green Paper on Mental Health (Ministry of Social Affairs 2020) defines self-help as activities initiated by the

person themselves, their family or the community (including colleagues) to maintain positive mental health (including learning skills), prevent problems, or promote, improve or restore health (p. 26). In that document, a community is defined as a network of people who are geographically or socially close. Community support could be provided as services by local governments or as informal support by neighbourhood initiatives, village movements and church congregations. Regarding the latter, it is important to note that only 13–16% of the Estonian population report believing in God (Eurobarometer 2005).

Although self-help and community help are mentioned in strategic documents, they are poorly integrated into the institutional system. The Estonian health system is medicine-centred but lacks resources. We lack psychiatrists, clinical psychologists, school psychologists, mental health nurses and general practitioners. The continued stigmatisation of mental health issues is also a barrier to well-being. According to a 2016 survey, 35% of the population agrees with the statement that mental disorders are caused by lacking willpower, and 62% do not want to discuss their mental health problems with anyone (Ministry of Social Affairs 2016).

At the same time, folk medicine continues to be held in high regard in Estonia, and as many as 59% of the population believe in 'a higher power or people with superpowers' (Kantar Emor 2017). The media plays an important role in discussing spiritual, magical and traditional ideas. Healers and witches have been portrayed as heroes since the Soviet era (Kõiva 2015). Even today, media content related to magic and superpowers is extremely popular (Vahter 2018). Considering that Estonians are active internet users, it is not surprising that many such alt-interpretive conversations have largely moved to social media in recent years. The most popular platform in Estonia – Facebook – has hundreds of new-spiritual, conspiritual and folk-wisdom groups, the largest of which have over 30,000 members. We have been investigating groups like these since 2015.

**Although self-help and community help are mentioned in strategic documents, they are poorly integrated into the institutional system.**

The following statements are based on the analysis of participant observation data, fieldwork notes, about 1,000 posts and 20 in-depth interviews collected over six years. For ethical reasons, we have not mentioned the names of any groups or users and illustrate the research with 'ethnographic mock-ups', which imitate the patterns emerging from the analysis but do not directly reproduce any posts or profiles.

## Members of alt-interpretive groups

The membership of alt-interpretive groups is sociodemographically diverse. Although smaller groups may attract people of similar backgrounds (e.g. level of education or gender), differences even out in larger groups, and the broader field of participatory mental health practices on Facebook features a variety of individuals.

Users with greater perceived expertise can become alt-interpretive influencers if they are capable of presenting their ideas in ways suited to the group and the platform and frame them convincingly for the group members (McCosker 2018). Users can achieve expert status by posting actively and continuously, whether they post their opinions or provide assistance. In new-spiritual and folk-wisdom

**Figure 4.2.2.** A mock-up profile of an influencer of a new-spiritual public-health group

**Emmeliine Kunks**

Witch, Tarot Queen and Rune Fairy

Emmeline is a beloved adviser in the group Fairy Flights.

She has posted 765 times in five years.

She uses local and global folk beliefs as her source of inspiration, changing, adapting, combining and innovating it as she sees fit.

For her, this is both a job and a mission – while it provides (extra) income, she mainly values it for self-realisation and the chance to help people.

Advisers like Emmeline can self-identify as a sage, psychologist and therapist all in one.

groups, experts often refer to themselves as witches, healers, sages, shamans, spiritual guides and the like. When advising and helping people, they rely on naturopathy, personal experiences, and magical techniques such as using a pendulum or card reading (see Figure 4.2.2). Simultaneously, they offer their products, services and advice in public groups and in private channels (Facebook Messenger, Skype, Zoom, WhatsApp, by phone or in home visits).

The 'experts' in new-spiritual groups mainly stand out by sharing folk wisdom and giving advice. In conspiritual groups, however, members who offer novel explanations for societal developments achieve a higher status. By posting online, they hope to achieve recognition as (paid) counsellors or coaches, organise courses, publish self-help books, and sometimes break into the mainstream media. The latter aids in further expanding the scope of conspiritual ideas (see Figure 4.2.3).

Social media has been associated with both a more democratic participatory culture and the spread of misinformation because unlike in centralised media, participation is not regulated. However, alt-interpretive groups have a new type of influential gatekeeper: group administrators. They shape the discussion with Facebook's content management tools, which allow them to remove content, accept new members, set rules and enforce them at their discretion.

**Figure 4.2.3.** A mock-up profile of an influencer in a conspiritual group

**Kevin D. P. S. Tate**
Shepherd.
WAKE UP!
OPEN YOUR EYES!

Kevin is an opinion leader in the group Ghosts in the Cellar.

In two years, he has turned his social media popularity into a business, organising training courses and concerts and publishing books.

Kevin is convinced that behind every social problem is a small group of puppeteers, whom he calls the 'deep state', who manipulate people.

Kevin exposes the evil deep state in the context of various social events and crises, from same-sex marriage to coronavirus vaccinations and rising electricity prices.

Charismatic opinion leaders like Kevin have the capacity to unite lonely people, who are often seen as 'weird' by others, by giving them a sense of belonging and offering simple culprits and solutions to complex problems.

## What are people looking for in alt-interpretive groups and why?

People come to new-spiritual, conspiritual and folk-wisdom social-media groups for different reasons. Reasons for joining include interest in alternative or existential topics, shifts toward particular lifestyles or values, significant life events, and the desire for self-development and growth. Dissatisfaction with the prevailing social order, a feeling of loneliness and missing out, and a lack of trust in the mainstream, be it institutional medicine, science, media or government, can also be motivators for joining. People's interest and willingness to participate, and their acceptance of the meanings and values in these groups, can develop gradually.

In more practical cases, people are driven to these groups by specific concerns or questions. Therefore, people seek solutions to a wide range of questions directly or indirectly related to mental well-being: relationship problems, grief, professional failures, workplace bullying or illness. Users of

**Dissatisfaction with the prevailing social order, feelings of loneliness and deprivation, and a lack of trust in mainstream institutions can lead to joining alt-interpretive groups.**

new-spiritual and folk-wisdom groups also seek to predict the future and interpret signs of the spiritual world. Sometimes their problems are directly related to mental health. They might complain about depression, anxiety, loneliness and feelings of inferiority. In other cases, it is a matter of a long-term lack of well-being and multifaceted problems. For example, a person may approach the group with concerns that they are experiencing hair loss, but only through a dialogue with the helpers is it revealed that the health problem is due to long-term stress caused by family quarrels and a cut in income.

The size of the group and the number of people offering help are important for those seeking help. As a result of the network effect, answers are faster, more varied and more flexible in large groups than when asking friends and relatives one by one. The diversity of suggestions means that a person complaining about anxiety or domestic violence may be advised to go to a support centre or talk to a psychologist,

**For many members, alt-interpretive groups are one of the few places in their lives where they can openly talk about topics important to them, experience support and feel valued.**

**The members of alt-interpretive groups and the solutions they offer are varied.**

solve their problems by smiling, forgiving or being grateful, or have a curse or evil eye removed by a group expert.

For many members, the alt-interpretive groups studied here are one of the few places where they can openly talk about topics important to them, experience support and feel valued. However, social media does not offer belonging and support only to those struggling with (mental) health and relationships. People who distrust authorities, including state institutions, science and medicine, also gather in these groups. A sense of belonging fosters a faster and deeper acceptance of alternative ideas. This explains the development of felt truths that are not scientifically supported but are perceived as true.

## Alt-interpretive mental health

Alt-interpretive groups have developed their own systems of meaning, communication styles and symbols, which are based on the idea of awakening. Holism, harmony and ascribing meaning to everything are the dominant tropes in new-spiritual groups. As a result of such a value system, mental health problems are seen more as a developmental challenge and a natural aspect of awakening. Folk-wisdom groups, on the other hand, are more likely to describe both problems and solutions via referring to external factors. Thus, a mental health problem could be caused by the moon, aquifers or a curse, and wearing a red ribbon, plants or crystals

### SOCIAL MEDIA AND MENTAL HEALTH

Social media allows charismatic individuals familiar with the platform's possibilities to find a much wider audience than before. Moreover, the status achieved in social media creates a false consensus among members, whereby people with marginal ideas that have received some attention begin to feel that a much larger number of people agree with them than actually do. Social media also favours the deepening of extreme views because of people's desire for continued attention.

Although people with lower levels of education, health literacy and trust in medicine are more vulnerable to health disinformation, the sharing and believing in disinformation is largely driven by a sense of belonging. People circulate content because of the status of the original poster and their own desire to be seen as a certain kind of person by association. Therefore, according to the latest studies, emotional intelligence safeguards against disinformation and helps people recognise manipulative content and analyse their own reactions and the reasons for them.

**SOURCES:** Schulz et al. 2020; Preston et al 2021

can help. Attributing agency to objects and natural phenomena makes it possible, on the one hand, to justify difficulties and, on the other hand, to see those difficulties as valuable lessons on the path of spiritual development and awakening.

Also, helpful angels or spirits can be positioned as the real actors. These angel groups mostly use the 'language of kindness': members are not criticised or attacked but are given support and encouragement to overcome difficulties (see Figure 4.2.4). Although people who do not believe in angels might roll their eyes at this point, the language of kindness is an important part of emotional support and thus mental well-being.

Conspiritual groups also see connections everywhere but tend to explain these with secret agreements and manipulations rather than holistic unity. They build solidarity using the language of exposing and criticising conspiracies, not kindness and love. Conspiritual solidarity on social media often turns into a crusade: calls for resistance and exposing the corrupt elite are frequent. However, these groups also talk about 'awakening' and 'becoming aware', which are hoped to bring positive changes.

## Social media – a help and a hindrance for mental health

Participation in social media can simultaneously support and undermine mental health. Some initially supportive and empowering beliefs and

**Alt-interpretive groups have developed their own systems of meaning, communication styles and symbols, which are based on the idea of awakening.**

**Figure 4.2.4.** Mock-up post from a thread of kindness titled 'Kallistamine' (Hugging), which had close to a thousand similar posts. The colourful animated emojis used in the forum's posts usually depict hugs, angels and hearts


practices may become a health risk. In other cases, group participation is empowering for the individual but harmful to social well-being. We will highlight both the supporting aspects and the problematic aspects as dialectical pairs that best describe the complex reality.

## More support can create ideological bubbles and tension

Finding people who think about and have gone through the same things offers social and spiritual support. In all alt-interpretive groups, problems are discussed mainly through personal experiences. This destigmatises problems and talking about them. Finding people with similar experiences helps relieve tension, gives hope and boosts mental well-being in the short term. Conspiritual groups, where members share a sense of disenfranchisement, perceived inequality, distrust of the elite and general alienation from society, also boost members' self-esteem by ridiculing 'the sheeple' and 'the elite'. In these groups, a deep sense of community often leads to activism and even political participation. Most sociological and political accounts of democracy would call this a positive development.

However, the activism of conspiritual groups is often destructive and based on disinformation. The more important group membership is to an individual's mental health and sense of self, the more likely members are to isolate into ideological bubbles. Depending on the group's beliefs, this may result in the development of parallel structures in various areas of life, hindering the functioning of society as a whole. Examples from the recent state of emergency during the pandemic include 'vaccine-free' kindergartens and lawyers handling complaints based on conspiracy theories.

**Social media participation can simultaneously support and undermine mental health.**

## Increased agency is accompanied by reduced privacy and safety risks

Alt-interpretive groups offer many people an opportunity for self-expression that they do not have elsewhere. This has an empowering effect on people, as it teaches introspection, self-analysis and taking responsibility for one's (health) behaviour by observing the experiences and stories of others.

Facebook is built to encourage people to post more and more and to share their private lives; it does this through the user interface, algorithms, and its content management rules and their implementation (see Tiidenberg 2017). In support groups, people are even more inclined to talk about themselves publicly, as sharing more information about themselves leads to better advice. However, many do not realise the reach of their posts or the amount of shared information when all pieces are put together. Public posts that suggest the poster is struggling with poor mental health can also attract those who seek to take advantage of people in need, for example, by offering loans or miracle cures or lifting a curse (see Renser and Tiidenberg 2020). The information shared in groups is controlled to some extent by group administrators and fellow group members, who can warn others. However, due to more active content management by the platform in the context of COVID-19, more and more disinformation and dubious promises move to private conversations, where those in need are even more vulnerable to manipulators.

**Public posts that suggest the poster is struggling with poor mental health can also attract those who seek to take advantage of people in need.**

## Diverse and widely available information leads to the spread of unscientific 'felt truths'

Informal online communities increase the availability and diversity of (mental) health information, mainly in the form of personal stories, which is why such groups serve as a source of information and learning. At the same time, the overabundance of online information and the possibility for multiple interpretations can place people in a maze of information or direct them to 'felt truths' – that is, emotionally resonant disinformation that helps avoid cognitive overload. On social media, people in need receive advice from amateurs without professional training, who draw on tradition, alternative medicine, or, purportedly, messages from the angels or the universe. Sometimes these amateurs are helpful, but it can also happen that those in need of professional help go without it for too long, or the person in need no longer believes the experts because their advice clashes with the alternative interpretation.

## SUMMARY

The popularity of alt-interpretive groups reflects the unmet needs of a large segment of the population for belonging, support, being understood and cared for, self-realisation and spirituality. However, alt-interpretive groups have contradictory implications on the individual and the collective level, and these can change over time.

In the short term, this kind of involvement often supports the individual's mental health. The groups fill the gaps created by the shortage of mental health professionals, evidence-based self-help and community-based services in Estonia. From the individual's perspective, increased agency, a sense of belonging and finding support, and easier access to diverse information reflecting life experiences can be considered positive.

In the long run, however, alt-interpretive groups can harm both individual well-being and social solidarity. The spread of pseudoscience and disinformation in alt-interpretive groups is dangerous, and sometimes amounts to antisocial activism. People with mental health problems can therefore miss out on professional help, and in the worst case, their condition can deteriorate to the point where the person becomes a threat to themselves or others. Participation in groups also carries privacy and safety risks, and people in need may be exploited. Isolating into ideological bubbles and the accompanying polarisation can also be dangerous at the societal level.

**In the short term, involvement in alt-interpretive groups often supports the individual's mental health. In the long run, however, alt-interpretive groups can harm both individual well-being and social solidarity. People with mental health problems can therefore miss out on science-based help, and in the worst case, their condition can deteriorate to the point where the person becomes a threat to themselves or others.**

However, it is important to keep in mind that what we have discussed here is only a part of participatory mental health practices. Due to insufficient data for Estonia, we could not discuss the more professional and pro-social examples of participatory practices, such as web-based mindfulness apps.

Finally, here are some recommendations for policymakers, mental health professionals and also general readers who may join or be interested in groups such as those discussed above.

- It is important to increase access to science-based support services linked to self-help or community help, both online and in the physical environment (e.g. experience counselling or group discussions in local centres, mobile applications, initiatives such as Peaasi.ee and Vaikuseminutid in Estonia). We know from international experience that professionally initiated and moderated social media groups and online portals can also become centres of self-help and community help. Professional mental health help or crisis counselling should be quickly available for people in difficult situations.
- To avoid the spread of misinformation, mental health influencers and gatekeepers active in social media (e.g. administrators and moderators of folk-wisdom groups) could receive training and be involved in health campaigns.

- One option worth considering would be to incorporate the gatekeepers of the existing alt-interpretive groups into national communication strategies concerning mental health and other such issues. Recognising them as important stakeholders instead of excluding them from mainstream influence might reduce confrontation and encourage dialogue.

- Mental health professionals should be aware that such groups exist and can have a significant and often multifaceted influence on people's healthcare decisions.

- Communication guidelines should be developed for mental health professionals to help them engage in dialogue and counsel patients who believe in alternative interpretations and make healthcare decisions based on them, including those who refuse treatment.

- The curricula of general education schools should place greater emphasis on the development of self-awareness, self-regulation and empathy for the sake of both stronger mental health and more competent online behaviour.

- Avoiding stigmatisation and building bridges should be one of the goals of mental health communication in the public sector.

- As members of participatory and alt-interpretive groups make up a significant part of the Estonian population, it is necessary to invest in specific research to understand the dynamics of these groups and facilitate dialogue between scientific and alternative interpretations.

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# 4.3
# Social media use and mental health

**DMITRI ROZGONJUK, KARIN TÄHT, RASMUS SINIVEE AND MARIA MURUMAA-MENGEL**

## KEY MESSAGE

**While the excessive use of social media is associated with many difficulties in daily life (including mental health problems), the topic can be overemphasised in the media, and there is no reason to consider social media use in itself as the root cause of problems in daily life.**

## INTRODUCTION

Social media is a technology that offers its users a variety of functional opportunities to connect with others, communicate, create, share and consume textual and audiovisual content (created by others). Moreover, social media can be accessed almost anytime and anywhere, requiring only an internet connection and a suitable device (e.g. a computer or smart device). Today the internet is home to a large number of platforms and applications that can perform various general or nuanced functions but are essentially based on the ability to communicate with other people.

The main functions of social media are the free spread of information and connecting people across geographical barriers. By now, problematic aspects are also evident, such as the spread of misinformation, disinformation or malinformation and the polarisation of social groups. Although there are many threats associated with the use of social media, including cybercrime (e.g. identity theft and phishing) and cyberbullying, this article focuses on the risks associated with excessive social media use that are central to the mental health debate. These risks are often, and sometimes baselessly, described as social media addiction.

This article outlines the problematic use of social media and its associations with mental health, how it is handled in the media and among Estonian youth, and practical recommendations that could help balance (social) media use. The article is based on recent research carried out in Estonia and internationally.

## Is social media addiction a real addiction?

The study of social media addiction is a relatively recent discipline but borrows from older research. While studying social media – a very recent technological innovation – it shares strong similarities with research on digital addiction, including smartphone and internet addiction. In fact, it can be said that the study of social media addiction stems from these other fields of research. The development of this line of research can be summarised as follows: the criteria for alcohol and drug abuse were adapted to the use of technology. This means that concepts such as withdrawal symptoms (e.g. irritability), tolerance (the idea that the same 'dose' of social media, smartphone or internet use is no longer sufficient) and disruptions of everyday life (problems at work or home because of excessive use of digital technologies) are now applied to technology use.

In recent years, researchers have spent considerable energy discussing whether the excessive use of digital technology can and should be considered an addiction. Many researchers studying addiction and the interactions between digital technology and the psyche have now concluded that, more often than not, excessive social media should not be described as an 'addiction'. However, the phrase 'social media addiction' is still fairly widely used in the academic world. This seems to be the result of mainly two circumstances. First, many researchers want to be consistent with previous works (including the terminology). Second, the term 'addiction' seems to be used in cases where the researcher has yet to explore the discussions in the field. The latter happens when the researcher's professional background is not related to (clinical) psychology or psychiatry.

It is worth noting that perceived and self-labelled 'social media addiction' may stem at least partially from a long-standing narrative that associates technological innovation with changes in a person's sense of self. For example, the information collected from the diaries of students on a five-day break from social media reveals that media technologies are very important in constructing one's personal identity and that of one's generation (Murumaa-Mengel and Siibak 2019). The participants in this qualitative study had adopted the label 'digital youth' and described their generation as technologically capable and adaptable to social media. On the other hand, they also stated that 'we are those addicts; it's scary to even contemplate' and tended to use generalisations about the poor mental well-being of the younger generation. However, the results of the survey conducted among Estonian youth reveals that the degree to which the survey participants thought they were addicted to social media did not correlate well with where they placed themselves on the problematic use scale. In other words, young people may tend to think they are more dependent on social media than they actually are.

One of the biggest problems with the concept of social media addiction is that there is no way to reliably and appropriately measure it. Research in recent years has found that people's perception of their social media use interfering in daily life is not strongly correlated with their actual behaviour (i.e. the objectively measured time and frequency of their social media use). This is one of the biggest problems in research in this field. For example, a 2018 survey among

**Young people may tend to think they are more dependent on social media than they actually are.**

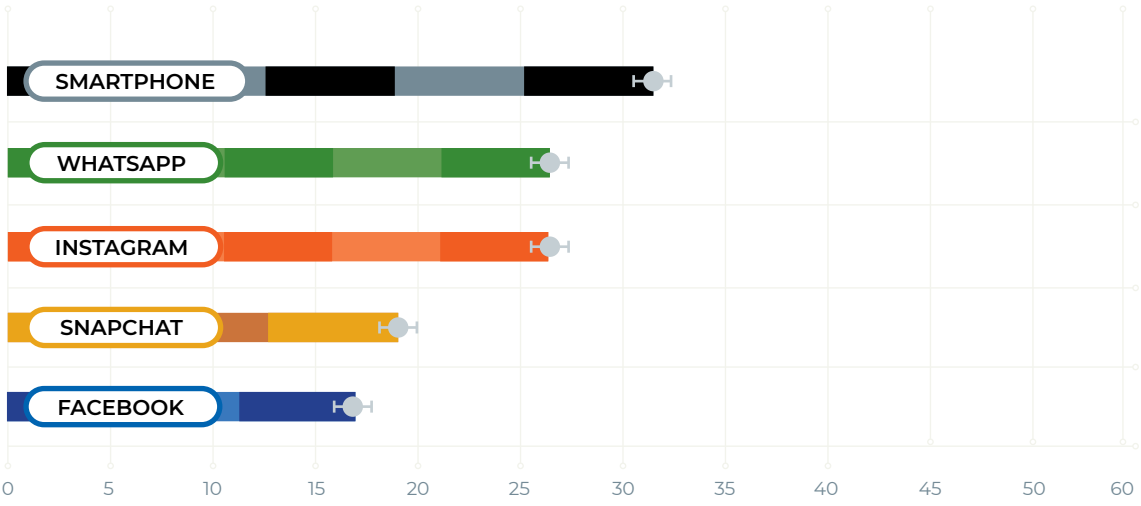
350 social media users in Estonia found that although people's perceived Instagram use frequency was related to poor mental health, the correlation between actual measured time spent on Instagram and depressiveness or anxiety was very weak (Rozgonjuk et al. 2020). In other words, while people reported they used Instagram often (an indicator that predicted depressiveness), the actual measured time they spent on Instagram did not predict depressiveness. Therefore, perceived excessive social media use may be a better predictor of mental health problems than actual measured use.

Here a general question arises: to what extent is it even possible to define the boundaries of addiction in terms of objectively measurable behavioural data (e.g. frequency of social media use and screen time)? As the digitisation of people's everyday life is likely to continue, distinguishing between normal and excessive daily social media use makes answering that question difficult.

In addition to the fact that people's perception of their social media use does not correspond to actual behaviour, the specifics of social media also raise questions. Should the use of different platforms be distinguished? In cooperation with American and German researchers, we found that social media cannot be treated in a generalised way: different social media platforms can have different potential for addiction (Rozgonjuk et al. 2021) (see Figure 4.3.1).

**As the digitisation of people's everyday life is likely to continue, distinguishing between normal and excessive daily social media use can be difficult or impossible.**

**Figure 4.3.1.** Differences in the addictive potential of social media platforms and smartphones




**SOURCE:** Rozgonjuk et al. 2021

**NOTE:** Sample of 439 German-speaking social media users, who were interviewed in 2019 and 2020 in a cross-sectional study, evaluation on a scale of 0–60.

**Socially active social media use (for communication) is associated with higher well-being, while passive social media use is associated with lower well-being.**

We also need to consider the way social media is used. In recent years, a distinction has been drawn between socially active and passive use of social media. The former is divided into active public use (e.g. posting content and responding to others' posts) and active private use (e.g. sending messages). Passive use means spending time on social media, such as browsing the news feed and viewing other people's profiles. This distinction is important because socially active social media use (i.e. for communication) has generally been found to be associated with higher levels of well-being, while passive social media use is associated with lower well-being (Verduyn et al. 2020).

To sum up, although studies focusing on social media addiction continue to be published, it is a fairly complex field with many nuances beneath the surface.

## Excessive social media use and mental health

While there are problems with the research of social media use (such as the use of terminology referring to addiction), the links to mental health cannot be ignored. One might think that social media use is associated with better mental health, as it effectively satisfies people's fundamental need to communicate. Social media also makes it possible to raise social capital (build relationship networks between people) quickly and effectively, thus strengthening the feeling of social cohesion. According to a cross-sectional study conducted in 2018 among 436 Estonian social media users, this, in turn, can have a positive effect on well-being (Gugushvili et al. 2020). However, several experimental and meta-analysis studies have shown that social media use is weakly but negatively related to users' well-being and mental health (Appel et al. 2020).

Why is excessive social media use associated with poor mental health? Researchers have suggested social comparison as one possible explanation. Social comparison is comparing one's own abilities, characteristics and opinions with those of others to get the most accurate self-image possible. People may compare their appearance, social status and many other characteristics with those of others, but importantly, the comparison requires a comparator – someone to compare oneself against. Choosing a comparator can depend on the direction of comparison: there is a difference between an upward comparison (with people who are better than oneself in terms of the comparable characteristic) and a downward comparison (with people who are worse in that respect). Comparing oneself with those who are more successful can inspire and motivate, but it can also make one feel inferior and envy the comparator. For social comparison related to social media, the feelings of envy can be explained by the fact that people share a more positive image of themselves and their activities on social media than is actually the case in everyday life.

Research confirms that people tend to compare themselves with those who are more successful, and this can cause negative emotions (e.g. envy and resulting frustration), which in turn leads to a deterioration of well-being or mental health (Gugushvili et al. 2020). People who tend to experience sadness and

**Scientists have not reached a consensus on the direction of the causal relationship: whether social comparison, sadness, FOMO, etc. increase social media consumption or vice versa.**

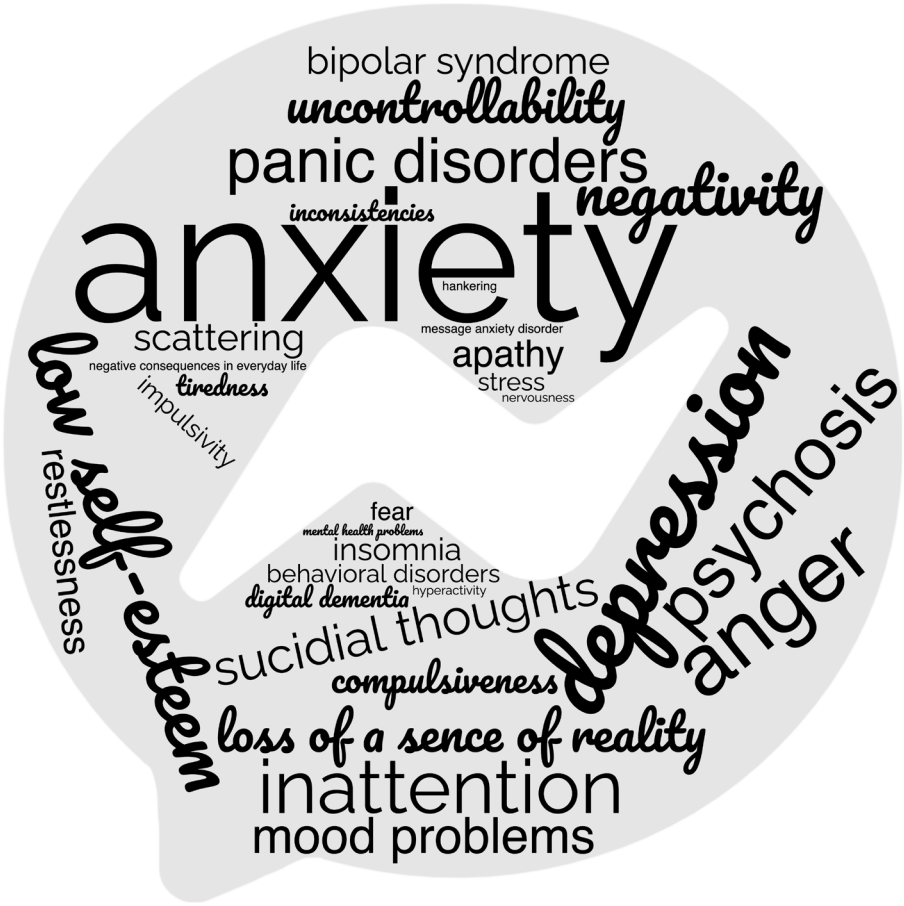
anxiety and who have low self-esteem can be particularly affected when comparing themselves to others. Research also shows that the use of social media platforms can cause information overload, the postponing of important activities and a decrease in face-to-face interactions, all of which can harm people's well-being (Gugushvili et al. 2020). FOMO, or the fear of missing out, has also been identified as an important factor in the negative relationship between the use of social media and well-being. People with high FOMO have a greater fear of missing out on other people's (such as friends') activities and experiences. Thus, researchers have hypothesised that FOMO is also associated with greater social media use. In the Estonian sample, it was confirmed that higher FOMO is related to poor mental health (Gugushvili et al. 2020). Although several studies have shown that FOMO is associated with perceived excessive use of smart devices and social media, recent findings of analyses that measure actual smartphone use and combine survey data suggest that FOMO may not predict actual measured smartphone use well (Rozgonjuk et al. 2021). However, it is important to note that researchers have not reached a consensus on the direction of the causal relationship: whether social comparison, sadness, FOMO, etc. increase social media consumption or vice versa.

## Coverage of social media use in the Estonian media

The problems associated with the excessive use of social media in everyday life should not be underestimated, especially since there is reason to believe that some people are more severely affected by the excessive use of social media than others. However, it is also worth noting that the negative effects of excessive use and the prevalence of social media addiction are consistently framed as a much bigger problem than it actually is. In other words, public discussion and the media tend to label the (excessive) use of social media as dangerous for (mental) health and for social interests and values. This is an example of 'moral panic'. The increasing use of social media is one of the reasons why overtones of moral panic accompany the media narrative. Another reason may be the fact that addiction as a potential social problem attracts the media: discourse on addictions of various kinds has always been amplified in the media, and the Estonian news media portrays social media use as a problem that urgently requires a cure. For example, various problems related to mental health are discussed alongside social media addiction in almost two-thirds of the articles published in the Estonian media (Sinivee 2022). Figure 4.3.2 shows the frequency of

**Public discussion and the media tend to label the (excessive) use of social media as dangerous for (mental) health and for social interests and values. This is an example of 'moral panic'.**

**Figure 4.3.2.** A word cloud of mental health-related words used in Estonian media to discuss the excessive use of social media




**SOURCE:** Sinivee 2022

**NOTE:** Based on 190 articles on social media addiction published in Estonian media between 1 January 2013 and 1 January 2021.

words related to mental health in articles discussing excessive social media use published in the Estonian media between 1 January 2013 and 1 January 2021.

Although a negative tone prevails in media coverage of social media, research has shown that young people use social media primarily to communicate with each other, and as previously stated, socially active social media use is more likely to be associated with better mental health. Naturally, it is vital to notice and help young people who are trying to cope with their (excessive) use of social media and create and maintain in-person social relationships. But we need to keep in mind that, according to the results of a cross-sectional study conducted in 2018 (987 young people aged 11–19 years participated), most young people are not addicted to the use of social media (Sinivee et al. 2022), even if they describe themselves as such.

**Young people use social media primarily to communicate with each other, and socially active social media use is more likely to be associated with better mental health.**

## Social media breaks reveal fears and expectations

Every spring since 2016, students participating in one of the internet research courses at the University of Tartu have been asked to take a five-day break from social media. The participants record their experiences and feelings free-form in a diary, and at the end of the course, they may give the diary up for research. By the time this article was written, 120 students had shared their diaries, which provide a comprehensive insight into today's youths' relationships with smart devices and social media. With a few exceptions, these are 19-to-23-year-old undergraduates in social sciences and humanities. Most are Estonians, but it is estimated that a quarter of the submitted diaries belong to foreign students. There are certain cultural and contextual differences, but in general, the topics covered by Estonian and foreign students are similar. Globally, young adults have many things in common.

The diaries of the social media break (Lepik and Murumaa-Mengel 2019) revealed two broad frameworks in the associations between young people's mental health and the use of social media.

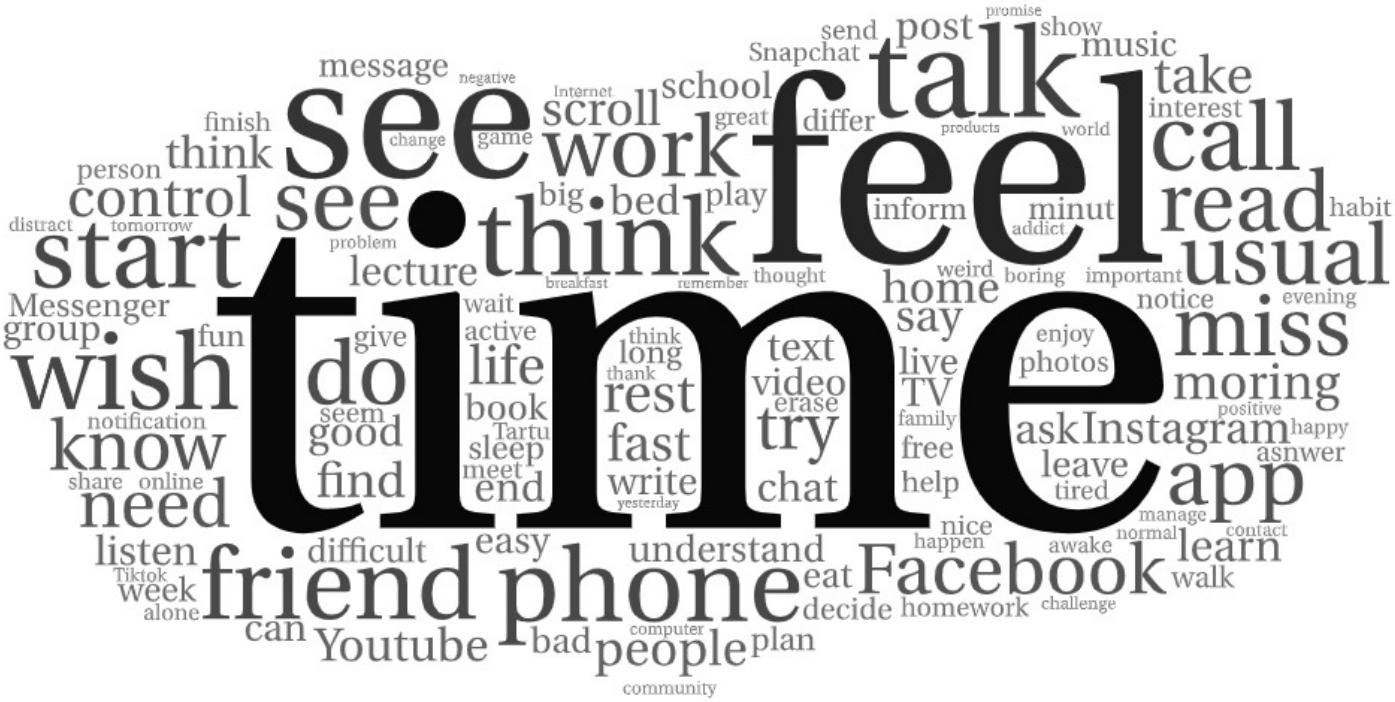
First, the break acts as a wall, isolating the subject: too little communication results in lower well-being. Young people are used to the fact that everything – friends and family, love and work, entertainment and information – is always at their fingertips. Therefore, they often describe a social media break as a lonely time when there is no way to check whether their existing social relationships still stand and whether anyone notices that 'I am actually not dead'. This finding is consistent with the results of studies described above – active social media use is beneficial for psychological well-being.

**Young people often describe a social media break as a lonely time when there is no way to check whether their existing social relationships still stand and whether anyone notices that 'I am actually not dead'.**

Second, the break acts as a vacation: it is an excuse for reduced communication and thus increases subjective well-being. The social media break is seen as an opportunity, as a way to regain control of communication and time and to return to good old 'technostalgia'. It is usually preceded by a perceived decrease in the ability to focus and the expectation and hope that even a short break from the constant stream of information will provide mental clarity and the ability to focus again. Moreover, many students describe experiencing an avalanche of notifications, beeps, parallel conversations, videos and images, and reactions and rituals, resulting in feeling buried alive under expectations from numerous sources to communicate.

Taking an overview of the diaries (Figure 4.3.3), we see that the most frequently used word is 'time': the fast or slow passage of time was mentioned in almost all diaries (a total of 1,743 times). Variations of the word 'feel' (1,381), which is typical vocabulary for diaries, take second place, and references to the main device – the phone – are in third place (mentioned a total of 1,295 times). One notable finding is that the phone becomes almost useless if it is not a gateway to social media. The fourth most frequently mentioned word in the diaries was 'friend(s)' (a total of 915 times). References to specific social media platforms, such as Facebook, Instagram and YouTube, are also found in the diaries.

**Figure 4.3.3.** A word cloud of the words used in students' diaries written during the social media break




**SOURCE:** figure by the authors

**NOTE:** The figure shows words that appeared in the diaries more than 100 times. Words related to the task, pronouns, numbers and the like are excluded.

In addition, productivity was a dominant value in the diaries. During the social media break, many felt incomplete as the normal information-filled and fast-paced, parallel activities of everyday life were taken away. On the positive side, the young people wrote that the days passed 'surprisingly quickly' and were 'relatively productive', as slowness and idleness are something to avoid, according to many diaries.

If psychologist Abraham Maslow, who proposed the concept of the hierarchy of needs, were to read these diaries, he would definitely point out the symptoms of deprivation in the students' descriptions. For example, they need social media to fall asleep (falling asleep to videos with soothing content), to feel safe in the urban environment (sharing their location with friends on the way home from a party), to maintain friendships (such as streaks on Snapchat maintaining a chain of daily interactions) or to share the latest piece of digital art with their followers.

**During a social media break, many young people felt incomplete as the normal information-filled and fast-paced, parallel activities of everyday life were taken away.**

**RECOMMENDATIONS FOR LIMITING EXCESSIVE USE OF SOCIAL MEDIA**

If a person is concerned about their (excessive) use of social media, they should consider cutting back. Research has shown that limiting the use of social media can also reduce the use of smart devices (and vice versa). One possible approach is to dial down the functionality of the device. For example, experiments with setting the screen to grayscale have reduced smartphone usage.

**You may find the following tips helpful if you want to limit your use of smart devices and social media.**

1. Turn off unnecessary reminders and notifications (sounds, banners and vibration).
2. When your phone is in silent mode, keep it face down and out of reach.
3. Set a screen lock and make unlocking the screen as inconvenient as possible.
4. When you go to bed, leave your phone in another room or keep it on silent mode and face down.
5. Reduce screen brightness, set the screen to grayscale and activate the blue light filter (known as night mode).
6. Create a separate folder for social media apps, add all relevant apps there, and move the folder away from the home screen.
7. Let your loved ones and colleagues know that you will not check your messages often.
8. If you do not need your phone, leave it at home.

**SOURCE:** Olson et al. 2022

## SUMMARY

Without a doubt, social media platforms like Facebook, Instagram, TikTok and Twitter have shaped the norms and practices of daily life. On the one hand, this effect can be negative (echo chambers and information bubbles, polarisation, comparing oneself with others, etc.). On the other hand, social media fulfils many valuable functions, and well-being could suffer without it. Although social media use is often associated with mental health problems, the mass media can overemphasise this topic and it is often unwise to consider social media as the root cause of mental health problems. Generally, active communication supports well-being. Research on social media has also shown

that active communication with others is linked to increased well-being. A study of social media break diaries revealed that not using social media limits communication, which, in turn, can lead to loneliness. Social relationships were one of the main themes in the diaries. Young people often wrote about how they missed their friends, loved ones and family members while on break. At the same time, however, social media encourages comparing oneself with others. And as people tend to share the better aspects of their lives on social media, self-perception can be distorted by comparing one's life against the positive image that other people choose to project. However, a social media break can also support well-being: activities are not interrupted in order to react to social media notifications, and social comparisons that distort self-perception are reduced. Based on these assumptions, recent research has proposed (relatively uncomplicated) measures to control social media use, such as turning off pop-up notifications, reducing app appeal and functionality, and cutting down the role of social media in everyday life.

**Although social media use is often associated with mental health problems, the mass media can overemphasise this topic and it is often unwise to consider social media as the root cause of mental health problems.**

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# 4.4

# The use of digital technologies shaping mental well-being in the everyday life of families

**ANDRA SIIBAK, MARIT NAPP, ELYNA HEINMÄE, ANNIKA SILDE, INGRID SINDI AND MERIKE SISASK**

## KEY MESSAGE

**Digital technologies play a central role in the everyday life of Estonian families. Digital tools are seen as supporting children's development and allowing parents to take breaks, but both children and parents worry about the potential harmful effects. Applications that enable real-time geolocation offer a sense of security and peace of mind for both children and parents, with little thought given to privacy issues. Agreeing on rules for the use of digital tools can cause conflicts within the family, but the relationship between the child and the parent and the active mediation of digital technologies is more important than setting strict boundaries. Digital technologies played an important part in maintaining relationships among family and friends, and ensuring mental well-being, in the face of self-isolation measures during the COVID-19 pandemic.**

## INTRODUCTION

In today's society, people live in a world shaped by the media, or a mediatised lifeworld,[1] because both digital technologies and digital media have a significant role in the everyday life and functioning of families. Recently, several quantitative and qualitative studies have been conducted in Estonia examining the role of digital technologies in the daily life of families. In this article, we take a closer look at the findings of several studies.

The results of a survey conducted among parents of children aged 0 to 3 (N = 400) and a six-month ethnographic research of one family, both conducted as part of Elyna Nevski's doctoral thesis (2019), provide information about the use of digital technologies in families with toddlers and preschoolers and the role of parents in guiding toddlers' use of technology. The results of a survey conducted by the EU Kids Online research network among 9-to-17-year-old Estonian children (N = 1,020) and their parents (N = 1,011) in 2010 and 2018 demonstrate parental mediation strategies for guiding children's use of digital technologies (Kalmus et al. 2022). Marit Napp and Andra Siibak's (2021) interviews with 8-to-13-year-old children and their

1 'Lifeworld' is people's complete and meaningful relationship with the surrounding reality, i.e. the perceived world in which they live (Vihalemm et al. 2017).

mothers (total N = 40) who use applications to track their child's location provide additional insight into the practices of families using what is known as technological mediation. The experiences of the participants in two qualitative studies reveal the changes in digital media consumption practices during the coronavirus crisis. Ten Estonian families participated in the DigiGen study (on the impact of technological transformations on the Digital Generation) conducted in 2020/2021, where individual interviews were conducted with ten children aged 5–6 or 8–10 and two other family members, one of them a parent (total N = 30) (Kapella and Sisask 2021). In order to investigate changes in toddlers' use of digital devices during the COVID-19 pandemic, mothers of 2-to-4-year-old children (N = 15) were interviewed for Pihel Sahk's master's thesis (2020).

Based on the results of the empirical studies, this article provides an overview of the practices, understandings and agreements on the use of digital technologies in Estonian families, as well as the changes brought about by the COVID-19 pandemic. We also discuss the perceived associations between the use of digital technologies and the mental well-being of children, parents and families.

## The use of digital technologies in the daily life of families

The studies revealed that family members recognise both beneficial and harmful effects of the use of digital technologies in the families' everyday life and communication with loved ones. From the perspective of mental health, the importance of digital technologies was particularly clearly felt when maintaining relationships among family and friends in social isolation during the COVID-19 pandemic. For example, interviews with mothers of 2-to-4-year-old children revealed that video calls were almost the only way for toddlers to stay in touch with their grandparents or their father working abroad during the state of emergency in the spring of 2020.

**The importance of digital technologies was particularly clearly felt when maintaining family relationships and friendships in social isolation during the COVID-19 pandemic.**

Today, various portable devices (e.g. smart watches) and phone applications (e.g. Find My Kids, Google Family Link and Family Tracker) enable parents to keep track of their children's whereabouts even when they cannot accompany the child. A 2021 survey that used Q methodology[2] and interviewed families who use applications for tracking revealed that parents adopt such technological aids mainly for the safety of their children. Parents stated that such apps are a quick and convenient way to assert parental control (e.g. by providing a quick look at where the children are and what they are doing) but also have a disciplinary effect on the child, since the child knows that their location can be tracked. However, from a mental health perspective, it is important to note that tracking apps are perceived as providing peace of mind and reassurance. Therefore, many

2 Q methodology (also known as 'Q sort') is the systematic study of participant viewpoints in the context of public perceptions. Participants are asked to sort a series of statements related to specific topics that reflect perceptions in public discourse (e.g. media and scientific literature) and rank the statements according to the extent to which they agree with them.

### WHY DO FAMILIES USE GEOLOCATION APPS?

**A MOTHER:** *Certainly [one of the reasons is] peace of mind and the fact that I don't have to annoy the child all the time, like 'Hey, are you coming already? Where are you already?' right, 'Did you get on the bus yet?' or well, whatever. [...] Rather, mostly yeah, for a sense of security for myself and maybe also a sense of security for the children.*

**A SON (10 YEARS OLD):** *Well, definitely [one of the reasons is] my safety. If something were to happen, if I don't answer calls for, I don't know, a long time, it would be good to know where I am and know that I'm in a safe place. So this is mainly for my safety. [...] And that itself makes me feel safer if my mum gets the opportunity to find out where I am. Or if by chance something happens, someone kidnaps me and I am not available, then they know where I am. I think it will be easier to find me then or something.*

**From a mental health perspective, it is important to note that tracking apps are perceived as providing peace of mind and reassurance.**

parents who participated in the study felt that the use of digital tools with real-time geolocation made it possible to ensure the child's safety. They added that with the support of digital tools, parents can fulfil their parental duties more efficiently and, simultaneously, be a more devoted parent.

Interviews and Q sorting with preadolescents revealed that they also get confidence and peace of mind from tracking apps. Several children who participated in the study revealed that in the event of problems or unexpected situations (e.g. if the child got lost), their parents could still help them, thanks to geolocation apps. Therefore, many parents and children trusted such technological applications and did not have much to criticise, as the apps helped create a sense of control and security.

Even though, as a rule, the 8-to-13-year-olds who participated in the study favoured and accepted the use of tracking applications, the analysis showed that the use of such digital technological aids can also cause conflicts and misunderstandings between children and parents and undermine trust between them. Furthermore, the use of tracking apps can lead to various breaches of privacy, in terms of both interpersonal privacy (i.e. the communication between children and parents and shared information) and commercial privacy (i.e. the commercial interests of the companies providing the services) (Stoilova et al. 2019). Therefore, it is important to understand the use of tracking apps, as well as many other digital applications and platforms that enable parental monitoring (e.g. online school environments or parental control applications), in the context of children's rights, including the right to

privacy and autonomy (Conventions on the Rights of the Child, General Comment No. 25, 2021).

The research shows that the possible effects of using digital technologies depend on the specific context. The effects may sometimes be positive, sometimes neutral and occasionally negative for the same areas of life. For example, the results of a survey conducted among parents of children aged 0–3 years revealed that adults have a number of positive expectations for digital technologies. Almost half of the parents who participated in the study allowed their 0-to-3-year-old children to use digital devices. Their stated rationale was that, with the help of a smart device, their children would learn new skills (68%) and acquire new knowledge (54%) (e.g. learn new words and numbers in both their mother tongue and a foreign language). They also said they did so because it would entertain the child (55%). Here, it is important to note that 67% of the parents who participated in the survey admitted that they leave their toddler alone with digital technology while they do household chores (cook, clean, handle the other child, etc.) or – in the context of mental health – take time for themselves to rest a bit or use digital tools for other purposes at the same time. This confirms that digital technologies have become a kind of 'babysitter' for families.

## Distinctive use of digital technologies during the COVID-19 state of emergency

The need for a digital 'babysitter' increased during the COVID-19 pandemic and social isolation as families' usual life arrangements were turned upside down. Interviews with mothers of 2-to-4-year-old children showed that toddlers' habits of using digital devices changed significantly during this period. It is also important to note that toddlers' use of screen media during the pandemic was directly influenced by the child's family background. This included the parents' employment status and character of work (e.g. the possibility of working from home and distributing work tasks or going on parental leave) and the presence of siblings (older siblings' distance learning and screen media usage habits, the sleep schedule of younger siblings). It also included the family's economic circumstances, such as their living arrangements (in a house, part of a house, or apartment), and the presence of various digital technology devices, as well as general restrictions in society (e.g. kindergartens partially closed, playgrounds and playrooms closed).

**Digital technologies have become a kind of 'babysitter' for families.**

Interviews with mothers revealed that screen time increased for many toddlers during the pandemic as parents allowed them to use previously prohibited devices (e.g. smartphones and tablets). By acquiring new digital skills, children expanded their range of digital activities (e.g. they started making video calls, watching videos of gymnastics lessons made by kindergarten teachers or listening to bedtime stories read on Zoom). In addition, digital technologies provided shared entertainment for families during the state of emergency. For example, families organised movie nights, watched live concerts, and played video or computer games together. Therefore, digital technologies played a central role in ensuring the mental well-being of family members big and small during the state of emergency.

However, since children were allowed screen time mainly on weekdays, when parents were busy with work, helping older siblings with distance learning or putting younger siblings to sleep, digital technologies also became the primary means of maintaining discipline. It is important to note that the time spent in front of screens increased the most among 2-to-4-year-olds who live in apartments. Since public playgrounds were also closed during the state of emergency in spring 2020, it was not so easy for parents to send their children to play outside.

## Potential adverse effects of digital technologies on mental and physical health

nterviews with Estonian families in the DigiGen study revealed that both adults and children are concerned about the harmful effects of digital technologies on mental and physical health. From the perspective of mental health, for example, the addiction narrative rose above the rest. The respondents believed that both children and adults are at risk of becoming addicted to digital technologies very quickly, but they also believed that such an addiction can be quickly shed if a time limit rule is applied or if the use of digital devices is stopped altogether. At this point, it is important to remind ourselves to be sceptical about the addiction narrative prevalent in our social discourse, as it fits the description of moral panic ((see also Rozgonjuk et al. in this chapter). Although participants in the DigiGen study also mentioned the potential of digital technologies for reducing stress and promoting well-being, these possibilities were clearly underutilised in the families studied.

As a rule, research participants associated the excessive use of digital tools with increased feelings of anxiety and nervousness. For example, several mothers of toddlers aged 2 to 4 noticed that during the pandemic-related state of emergency, the children were often more nervous, aggressive, sleepy or lethargic, shouted more or became upset more easily than before. The respondents also felt that children were more disobedient, while their ability to play alone and use their imagination decreased. The parents related all this directly to the excessive use of digital tools.

While the family members who participated in the DigiGen study often spoke of digital devices disrupting sleep and causing fatigue, the parents of toddlers who participated in the survey and the ethnographic study revealed that digital technologies and screen media are often used to support the child's sleeping and eating routines. When discussing the dangers of digital technology, parents primarily perceived the risks related to physical health, mainly a decrease in children's general physical ability or a deterioration of eye health. Less recognised was the threat to the child's cognitive, social and emotional skills. At the same time, it is important to note that parents of toddlers were more concerned about the relationship between the child's academic abilities and allowing or not allowing smart devices than about potential health risks. In other words, parents often expressed their lack of knowledge and concern

**As a rule, research participants associate the excessive use of digital tools with increased feelings of anxiety and nervousness.**

**MOTHERS' DESCRIPTIONS OF THE EFFECT OF DIGITAL TECHNOLOGIES ON THE BEHAVIOUR OF TODDLERS DURING THE PANDEMIC-RELATED STATE OF EMERGENCY**

**MOTHER 2:** *[...] actually, it was noticeable that when using the phone for a long time, [the child] became more nervous; it changed them. Changed their emotions and maybe made them more aggressive. That's when I realised: okay, now it's too much.*

**MOTHER 3:** *For some reason, the younger one recently often complains about being bored. [...] I can imagine how the digital world and these cartoons stimulate the brain, so to speak, and the ordinary world seems boring and slow and monotonous.*

about whether allowing a smart device too early might impair the child's abilities or, conversely, whether introducing children to digital technologies later than their peers (e.g. from the age of seven, when the child starts school) could interfere with their development compared with peers.

## Strategies for parental mediation of digital technology use

Many parents use various parental mediation strategies to mitigate the mental and physical health risks associated with the use of digital technologies and to increase the benefits.

Parental mediation strategies can be divided into active and restrictive (Livingstone et al. 2017). Active mediation means that parents (or other people around children, such as teachers) provide social support to help children navigate the online world. Restrictive mediation, on the other hand, is related to various social and technical rules and restrictions that parents, teachers or other important people place on children's technology use. Which mediation strategy is implemented in any given family depends largely on family values, the parents' attitudes towards internet use and how parents assess the role of digital technologies in the development of their children's values (Kirwil et al. 2009). For example, studies conducted in Estonia and elsewhere confirm that the more active users of digital technologies the parents, the more their children also want to spend time in the digital world. On the other hand, parents who could not enjoy the benefits of the modern world in their childhood are especially keen to introduce new technological opportunities to their children. The parent's age, gender, socioeconomic status, experiences in childhood, education, media literacy and awareness of online risks, as well as the frequency and purpose of the parent's use of digital technologies and their beliefs and convictions about the usefulness/harm of technology, play an important role in the choice of mediation strategies for children's internet use (Kirwil et al. 2009). Parental mediation should therefore be seen as a set of

Studies show that five main strategies of parental mediation stand out:

**active mediation of use** (e.g. discussing content and sharing online experiences)

**active mediation of safety** (activities and recommendations related to safer and more responsible internet use)

**restrictive mediation** (establishing rules that limit time spent online and location of use, as well as content and activities)

**technical restrictions** (use of certain software or technical applications to filter, limit and monitor children's online activity)

**monitoring** (checking the children's online activities afterwards)

**Table 4.4.1.** Distribution of countries based on parental mediation

| 2010 | 2018 |
|---|---|
| **PASSIVE MEDIATION CLUSTER**<br>Below average level of active and restrictive mediation: **ESTONIA** and Lithuania | **ACTIVE MEDIATION CLUSTER**<br>Approximately average level of active mediation and below average level of restrictive mediation: **ESTONIA**, Finland, Poland, Czech Republic, Lithuania, Norway |
| **MODERATE VERSATILE MEDIATION CLUSTER**<br>Average level of active and restrictive mediation: Romania, Poland, Czech Republic, Norway, Finland, Spain, Portugal and Italy | **MODERATE VERSATILE MEDIATION CLUSTER**<br>Average level of active and restrictive mediation: Portugal, Spain, Romania, Italy and Germany |
| **RESTRICTIVE MEDIATION CLUSTER**<br>Significantly above average level of restrictive mediation and approximately average level of active mediation: France and Germany | **INTENSIVE VERSATILE MEDIATION CLUSTER**<br>Significantly above average level of active and restrictive mediation: France |

**SOURCE:** table by the authors, based on data from EU Kids Online 2010 and 2018

practices intertwined with each other, which, in addition to other factors, are influenced by the parent's cognitive abilities, communication skills, sociodemographic indicators and general ways of raising children (Kalmus 2013).

As a result of the analysis of the EU Kids Online survey, countries were divided into different categories by parental mediation strategies and by year as seen in Table 4.4.1. The analysis showed that the active mediation of both children's internet use and safety has grown significantly in several European countries in recent years. For example, the results of the 2018 survey revealed that Estonian parents consider themselves to be active mediators of children's internet use and safety. Most of the Estonian parents who participated in the survey stated that they talk with their children about what they do on the internet (92%) or give them advice on internet safety (59%) (Sukk and Soo 2018). However, the children themselves are much less aware

**The more active users of digital technologies the parents, the more their children also want to spend time in the digital world.**

of their parents' activity in mediating their internet use. For example, only 54% of the Estonian children who participated in the study reported that their parents 'sometimes' or 'often' talk to them about what they do on the internet (Sukk and Soo 2018). Thus, the results reveal that children's and parents' perceived experiences of the frequency and activity of parental mediation do not match. According to children's perceptions, parents have room to develop their parental skills.

According to the parents, the use of active mediation strategies took a back seat during the COVID-19 state of emergency, when many parents were busy

### FAMILY MEMBERS' STATEMENTS ABOUT RESTRICTIONS ON THE USE OF DIGITAL TOOLS

*It is no longer possible to get him off this phone, only the time limit rule helps.* (ET_F1_mother)

*Yes, we have a rule that Mummy put a timer on my phone so that I could not play much. It's about five minutes; well, about ten minutes or an hour.* (ET_F1_child)

*There is no such thing as sitting there for an hour straight. More like 15–30 minutes and then let's move on to the next activity.* (ET_F2_father)

*I have limits on everything, even on what I don't use …* (ET_F10_child)

*They say you shouldn't use [digital tools] after 20:00, because then it's evening and the brain and eyes are tired. So after 20:00 we do not use computers or anything like that. If necessary, cartoons, television on a large screen, but otherwise no phones, tablets, nothing.* (ET_F9_grandmother)

**SOURCE:** DigiGen

In 2010, 71% of Estonian parents who participated in the EU Kids Online survey applied an active mediation strategy. In 2018, 87% of the parents who participated in the survey did so. Across both indicators, Estonian parents were still below the European average, which was 78% (2010) and 89% (2018), respectively.

with working from home as well as supporting distance learning and therefore could not actively monitor what their younger children were doing on digital devices or discuss what they saw with them. Interviews with mothers of 2-to-4-year-old children revealed, for example, that some parents began to implement technical mediation for the first time, using various technical aids (e.g. applications) to regulate children's screen time and content.

Interviews with parents who participated in the DigiGen study also revealed that parents used restrictive mediation primarily to regulate the amount of time their children spent on digital media. Furthermore, automatically applied restrictions helped prevent conflicts between children and parents. At the same time, parents who often applied restrictive and technical mediation tended to over-regulate children's use of digital devices and set limits where it was not necessary. The reported reason for the restrictions was to prevent potential health risks, such as damaging the eyes or the brain.

However, the analysis of EU Kids Online survey data shows that the use of restrictive mediation strategies has clearly decreased among parents in Estonia and other EU countries that participated in the survey. On the one hand, we can assume that the change is related to parents becoming more aware: restrictive mediation is often used by parents with lower digital literacy (Paus-Hasebrink et al. 2013). On the other hand, the decrease in restrictive mediation can be attributed to the impact of various Europe-wide interventions such as awareness-raising programmes, including the project Targalt internetis (Be Smart Online), which often emphasise the importance of active mediation and have developed training and guidance materials to help parents improve their skills. Although cultural differences between countries are still significant, the analysis shows that parents are using restrictive mediation less and instead actively guide and support children's internet use.

## The main agreements concerning digital technologies in Estonian families

Several studies analysed for our article showed that if there are any rules related to digital technologies in the family, they are mainly established by parents. Children's opinions and suggestions are usually not

**Parents are using restrictive mediation less and instead actively guide and support their children's internet use.**

asked for or considered. At the same time, children are highly interested in adding their own ideas and opinions to family agreements and want to be included in this process as equal participants. It is often the children who teach and correct their parents when they misuse digital technologies or break agreements.

*'Mummy, you can't use the phone in the car' or whatever, right. This really keeps me on my toes.* (ET_F7_ mother)

The children claimed that even if the rules within the family were not overly popular, they were still good and necessary.

Data from several studies reveals that parents combine different mediation strategies and adopt different parental roles depending on the specific context. Among the families that participated in the DigiGen study, making rules is an ongoing process spurred by specific situations – parents develop rules through trial and error. By contrast, the parents in the family that participated in the ethnographic study had agreed that the father mainly guided the children's use of digital technologies, while the mother did household chores (like cleaning and cooking). However, as with the participants in the DigiGen study, the father chose mediation strategies according to the specific situation. For example, whenever the father had the energy and interest to support the children's use of digital tools, he either explained things to the children and discussed media content with them or introduced the children to new environments and activities on the screen, seeking to broaden the children's media knowledge. As an active mediator, the father would willingly take on the role of a guide, but when he wanted to watch a TV show or surf on his smartphone, digital tools played the role of a babysitter for the children. In addition to establishing family agreements, both parents must adhere to these agreements. Problems arise when one parent has set rules (e.g. limiting the child's time spent using digital devices or the content they are allowed to view) and the other parent does not adhere to them. The interviews with the mothers of toddlers revealed that parents' principles and understandings on these issues tend to diverge, especially when the parents live apart. Differences in such agreements can cause confusion for toddlers, especially if, for example, one parent places limits on their use of digital technology and the other does not.

**Children need the support and help of parents and other family members in the digital as well as the physical world. Such support is equally important for the mental well-being of children and parents alike.**

However, the parents who participated in the research agreed almost unanimously that children need the support and help of parents and other family members in the digital as well as the physical world. They also sensed that such support was equally important for the mental well-being of children and parents alike. At the same time, parents blame digital technologies to some extent for creating new challenges in parenting. Though parents can rely on intergenerational experience when guiding their children in the 'real world', in the digital world, such a collective experience across generations is not yet available. This is why parents often feel helpless and in

need of more advice on how to better support their child's use of digital technologies and reduce the associated potential risks. Such uncertainty stems in part from the fact that many parents still feel inferior to their children in digital skills. Thus, children are often trusted to use digital tools on their own, or older siblings are tasked with mediating younger children's use of digital technologies.

**TEN RECOMMENDATIONS FOR PARENTS ON ENSURING THE APPROPRIATE USE OF THE INTERNET AND SMART DEVICES BY THEIR CHILDREN**

1. Remember that what you've taught your child about being a good person also applies in the digital world.
2. Lead by example rather than words.
3. The ability to cope in the digital world is vital and is something that has to be learned.
4. Decide which websites you want your child to be visiting.
5. Set some ground rules with your child about using the internet and smart devices and make sure all of you follow them.
6. Do things together in the digital world.
7. Make sure you know how social media works.
8. Use the same social media as your child but respect their privacy.
9. Always try to understand before judging.
10. And remember – computers and smart devices are no substitute for parents!

**SOURCE:** Targalt internetis (https://www.targaltinternetis.ee/en/for-parents/)

## SUMMARY

Digital technologies play a central role in the everyday life of Estonian families, and people believe their use shapes mental health and well-being. Digital technologies became irreplaceable during the social isolation caused by the COVID-19 pandemic, when work, education and social life – and thus the general well-being of families – directly depended on the availability of digital tools and the family members' knowledge of various technological possibilities. During the COVID-19 pandemic, the time spent in front of screens increased significantly in many families. While parents working from home and children on distance learning had to spend countless hours in front of the computer because of work- and school-related obligations, digital technologies became a necessary babysitter for many toddlers. Even though, as a rule, Estonian parents consider themselves to be quite competent mediators of their children's internet use and safety, the state of emergency caused declared during the pandemic seriously tested parents' ability to actively mediate children's use of digital technologies in stressful situations and undermined previous family agreements regarding the use of digital technologies – for example, rules on limiting the time spent using digital technologies. However, such rules, ideally agreed on between parents and children, are like a benchmark of common family values and views, and their absence can cause unnecessary tensions and conflicts between family members.

The studies confirm that Estonian families implement family agreements and various parental mediation strategies to minimise the risks related to the use of digital technologies, for example, to prevent the excessive use of digital tools. Research shows that parents are mainly aware of the risks to their child's physical health but their awareness of the emotional, social and cognitive risks associated with the use of digital technology is still rather limited. Thus, awareness-raising programmes (e.g. Targalt internetis), which over the years have significantly contributed to changing parental mediation behaviour and attitudes, should now pay more attention to the known mental health risks posed by technology use.

**Digital technologies play a central role in the everyday life of Estonian families, and people believe their use shapes mental health and well-being.**

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# 5 The physical environment and mental well-being

**PHOTO:** Jaanus Tepomees

# 5.0 Introduction

## The physical environment and mental well-being

**HELEN SOOVÄLI-SEPPING**

### KEY MESSAGES

1. **A well-designed urban space enables a sense of community, social inclusion and mobility, increasing mental well-being, reducing stress and allowing for significant savings in healthcare.**
2. **Climate change, biodiversity loss and environmental disturbances are increasingly affecting people's mental well-being. Climate concerns can be alleviated by taking action and responsibility on a personal level and thus contributing to climate and environment initiatives.**
3. **Direct contact with nature, in urban spaces as well as in the countryside, supports mental health and increases well-being.**

### INTRODUCTION

Homes, schools, kindergartens, offices, parks, bicycle paths, footpaths and town squares are spaces that people move through and where they spend time daily. As part of the living environment, they have a significant impact on human health, including mental health. Maintaining, protecting and planning a health-promoting living environment is fundamental to public health. This cross-sectoral approach to health should be recognised as one of the basic principles for preparing the national budget. Estonian society pays a high price for ignoring this principle, as human health is the country's most valuable asset, both financially and morally.

The introduction to the chapter discussing the physical environment examines people's mental well-being as it is influenced by the natural, urban and other artificial environments. People's mental health and well-being depend on the health of the physical environment. Architecture and spatial planning play a big role, as they shape our behaviour patterns and the spaces where we travel or spend time.

## Climate change is the biggest factor affecting population health in the 21st century

Research on the impact of climate change on people's physical and mental health has received considerable attention in recent years, as evidenced by the emergence of climate psychology as a new branch of psychology. Environmental psychologists have studied the links between mental health and climate change in a comparison of dozens of countries (Ogunbode et al. 2022). The conclusion is unequivocal: climate change has a significant impact on mental health. The impact can manifest itself in psychological exhaustion or anxiety caused by the short-term or long-term effects of climate change, experienced directly or through the media, and the social and economic changes resulting from climate change. Climate anxiety is a negative emotional response to a vaguely perceived threat posed by climate change. Climate anxiety must be distinguished from concepts such as climate concern or caring about climate change, because the latter are based on a real threat, are empowering, and need not involve mental health problems. The United Nations Human Development Report (HDR 2022) and recent reports by the World Health Organization (WHO) have also pointed out that rapid climate change is accompanied by increasing risks to mental health and psychosocial well-being, triggering emotional distress, anxiety, depression, grief and suicidal behaviour in people.

The survey findings presented in this chapter (see Annist et al.) explain how climate change is perceived on a subjective level in Estonia. While the surveys do not seek to determine the associations between mental well-being and climate change, they point to climate change as an important phenomenon shaping human relationships and behavioural practices. In Estonia, the number of people who experience climate concern is increasing. Unlike climate anxiety, climate concern is not a passive state of panic that ends up causing apathy; instead, it leads people to address their concerns by acquiring knowledge about climate change and looking for ways to act. Sharing concerns with others and taking action together is a common way to address climate concern. People may feel powerless and burnt out and have a higher risk of developing mental health problems when they fail to find a way to share and channel their concerns. A similar phenomenon is described in scientists studying climate change. They are constantly working with environmental data and are faced with negative information, which they interpret and mediate to the public. As a result, they experience burnout and grief (Conroy 2019).

Most people care about the environmental condition of the planet, and Estonian people, especially the younger generations, see themselves as environmentally conscious. However, awareness does not necessarily imply action. Awareness, fear and anxiety can instead lead to denial or downplaying of the problem. For example, symbols of social status – our cars, homes and clothes – rely on polluting industries that are often located overseas. Dealing with climate change inevitably leads to a conflict of values: caring for the environment requires giving up some personal material well-being, which can cause mental distress. To avoid this, people may opt for apathy, because a proactive attitude would require

**Sharing concerns with others and taking action together is a common way to address climate concern.**

changing behavioural habits and experiencing inconvenience in everyday life.

Social norms and role models play an important part in coming to terms with climate change. People tend to perceive threats arising from climate change as more immediate if they are convinced by climate-change-related statements from people with significant social status or if they feel social pressure to adapt to and mitigate climate change on a personal level. Likewise, people tend to be more concerned about climate change if their family and friends care about it.

In the first article of the chapter, Annist et al. say that climate concern can be alleviated by taking climate change and environmental damage seriously and offering solutions. Denying the problem and responding with apathy has several social consequences: the number of climate-concerned and climate-anxious people will increase, and the climate crisis will take on ever-larger, tangible dimensions that affect health and financial well-being.

## Environmental pollution causes annoyance and affects mental health

The consequences of human activities that have negative effects on the climate and environment affect people's mental well-being. In the second article of the chapter, Orru et al. use examples from air and noise pollution studies to discuss how environmental disturbances cause mental health to deteriorate. Air pollution is the most important environmental risk to our health. The ambient air quality in Estonia is generally good. Problems occur in cities where there are many sources of pollution and many people exposed to them. A recent report on the health impact of ambient air in Estonia (Orru et al. 2022) focuses on air pollution from coarse particles and fine particles, which have the greatest impact on mental health. Although particle counts in the air have decreased in Estonia over the past decade, there is no reason for complacency. Due to changing traffic intensity, the air quality in the centres of Estonia's major cities varies according to the time of the day. The fact that many schools, kindergartens and hobby schools are located in the city centre is a cause for concern. In the city centres of Tallinn and Tartu, they are immediately surrounded by parking spaces for the public or for the employees of these facilities. The vehicles pollute the spaces where the children play and move around, and have a negative health effect. In many European countries (e.g. the Netherlands and the United Kingdom), parking is prohibited near childcare facilities. The vehicles that parents drive to childcare facilities, waiting for their children while the engine idles, are a major source of pollution for outdoor air, soil and the indoor air of nearby childcare facilities. The effect of indoor air quality on mental health has not yet been studied in relation to specific sources of pollution, and thus it is unknown. Numerous case studies from other countries suggest a connection, but there are not enough international studies to draw fundamental conclusions. As early as 2011, the WHO described noise as a serious source of pollution with negative health effects (WHO 2011), but noise pollution as a possible cause of mental health problems has not been sufficiently studied (Guha 2022). One of the reasons for this is the insidious nature of noise – we tend not to notice traffic noise because we are accustomed to it as a constant background. Noise is also

**Human activities that have negative effects on the climate and environment affect people's mental well-being.**

**SILENCE AS A NATURAL RESOURCE**

*In silence you are with yourself. When you are in silence, you are alone with yourself, in your own company. […] Coming back to silence as a natural resource, the protection of this resource should be taken very seriously. […] It is a value that people very often recognise only when it is no longer there. It is similar to health, which, they say, is the most precious possession of someone who is ill.*

**SOURCE:** Fred Jüssi, *Olemise mõnu*, Ööülikooli Raamatukogu, 2022, pp. 99–101

perceived as less of a threat than, for example, traffic accidents. Children are more sensitive to all sources of pollution than adults, and they are also more vulnerable to noise, which can impair their cognitive abilities, among other things (Gill 2021). It is difficult for adults to adequately assess noise pollution from the point of view of children.

The impact of environmental pollution on mental health is also discussed in agriculture. For example, the mental health effects of glyphosate are being actively researched (Ong-Artborirak et al. 2022; Soares et al. 2021). Glyphosate-containing herbicides are widely used in agriculture as a weedkiller or applied immediately before harvesting to speed up the drying of grain crops and ensure consistent yields. In Estonia, glyphosate is also used to limit the growth of vegetation around infrastructure (e.g. roads, railways and outdoor areas). Surveys of agricultural soils and surface and groundwater in Estonia show that more and more glyphosate and its decomposition products are found in nature (Helm et al. 2020). When glyphosate enters the intestine, it can lead to changes in the microbiome, which in turn can induce anxiety and depression (Barnett et al. 2022). A recent audit by the National Audit Office (2018) indicated that the levels of plant protection products in groundwater are increasing. Nitrate content in groundwater has also increased. Using nitrate-contaminated water can cause symptoms of depression (Theron 2022).

**The mental health effects of environmental pollution are also discussed in agriculture.**

## How the built living environment affects mental well-being

The third article in this chapter (Sooväli-Sepping et al.) takes a closer look at the impact of the built living environment on people's mental well-being. The ways in which spatial planning, mobility and architecture affect mental well-being deserve to be explored in depth. In Estonia, they have so far only been discussed at a conversational level, and there is no good practice in the public sector for assessing the impact of new infrastructure, buildings or spatial plans on people's mental health and well-being. There is also little research in this field in Estonia, but good examples that exist in Europe could serve

**And there is no good practice in the public sector for assessing the impact of new infrastructure, buildings or spatial plans on people's mental health and well-being.**

as a model and could easily be applied in Estonia.

The places where people spend the most time affect their health the most. Most people spend the majority of their lives indoors. Either out of ignorance or carelessness, today's built environment and interior spaces are often not designed to support mental health. This is mainly because of a general lack of understanding of how the built environment affects mental well-being. There are no clear guidelines for the construction market on which built environments to promote in order to support people's mental well-being. Hoisington et al. (2019) point out that engineering requirements are set for indoor temperature, light and air. Temperature is a subjectively perceived parameter with an indirect influence on mental well-being. Insufficient indoor daylight can increase the likelihood of depression by up to 60%. Well-thought-out lighting solutions, on the other hand, improve both physical and mental health indicators.

There are many solutions to improve people's mental well-being and performance when designing the built environment. The architecture and interior design of semi-public buildings (kindergartens, schools and workplaces) can support mental health with stimulating and relaxing solutions such as green walls or quiet spaces to spend some time alone. Bringing vegetation into the work environment or public space, using wood in the interior, placing images of nature on the walls, setting up resting areas on roof terraces, creating spaces where people can rustle through autumn leaves or listen to the sound of trees and birdsong, or building digital simulations of nature – all of these have a calming effect. Solutions and good practices like these found in Estonia and elsewhere could be brought together in an interactive electronic catalogue updated by interior designers and freely accessible to heads of schools, libraries and other institutions.

According to the European Social Survey, people in Estonia experience social isolation much more than people in Western Europe. As in other European countries, many people in Estonia live in single-person households, especially in the cities. This change in living patterns sets different expectations for the quality of public space, which should facilitate social interaction. Social interaction can mean simply walking past another person, chance encounters, tending to a patch in a community garden and so on. Perceived social cohesion has a distinctly positive effect on mental health. To put it simply, people need other people around them.

The built environment, which includes both public spaces and interior spaces, affects people's lifestyle and behaviour patterns much more than legislation and public debates acknowledge. A fundamental problem with Estonia's urban living environment is car-centric planning. Gill (2021) points out that mental health disorders in children are often caused by a bad urban environment. Increased traffic affects children in particular, limiting their opportunities to spend time outside on their own. Planning car-centric areas, which means creating more and more parking spaces around houses and building new roads, reduces children's freedom to play and move independently and restricts them to indoor activities. Stadiums, ball courts and tree groves have gradually disappeared from old residential areas. Much more attention needs to be paid to playgrounds

**Mental health disorders in children are often caused by a bad urban environment. Increased traffic affects children in particular, limiting their opportunities to spend time outside on their own.**

for children and young people of various ages, as well as for older people, in Estonian cities and small settlements alike. Local governments should treat this kind of activity space as a strategic goal when shaping the living environment and guiding people's health behaviour. In their current form, public votes on 'inclusive budgets' and efforts by volunteers (e.g. Liikuma Kutsuv Kool, an NGO that promotes physical activity in schools) are insufficient to guide people's health behaviour. Many good examples of activity spaces suitable for the Estonian climate are found in Europe and the Nordic countries. Experts and researchers in Estonia and elsewhere can make an important contribution to both the design and placement of these activity spaces in the urban environment.

Physical activity is a lifestyle choice that supports mental well-being. Walking allows people to meet each other spontaneously, take in the street life and see what the weather is like. David Sim (2021), an advocate of people-centred urban planning, points out several charms of walking – it provides sensory experiences, contact with the surrounding environment and the opportunity for social interaction. A bicycle also enables freedom of movement. A good bicycle infrastructure is a prerequisite for children to be able to move independently. The latest European health studies confirm that cycling is the most beneficial form of movement for human health: it allows you to move quickly from one point to another, burns calories and creates a sense of well-being. In cities in Estonia and elsewhere in Europe, half of all car journeys are up to five kilometres long. Replacing these journeys with cycling would have great health benefits. For five months of the year, the weather in Estonia might not favour cycling, but the remaining seven months are suitable for it, as is shown in neighbouring Finland.

## Closeness to nature supports mental well-being

In the early days of modern medicine, psychiatric hospitals were built in natural settings, away from the noise of the city. Natural daylight in the wards and doctors' offices, the opportunity to enjoy sunshine, fresh air and views of nature and to go out into nature – all these factors were believed to have a therapeutic effect (Battisto and Wilhelm 2020). Contemporary expert discussion on the architecture of hospitals, homes for older people, rehabilitation centres and other healthcare facilities also treats the idea of closeness to nature and naturalness as central, from the location of the building to the landscaping around it, the building materials and the interior design (Kraus et al. 2020). The natural environment does not only have a healing effect on people suffering from illness; healthy people also need it. Being in a natural environment stimulates, preserves and strengthens mental health and helps people cope with stress (Bosch et al. 2018). People should not have to specifically travel or drive to nature to benefit

**The cleaner and more natural our living environment, the stronger the mental resilience of society.**

and derive well-being from its soothing qualities. The more nature there is in the city – in the streets, squares, bus stops and around apartment buildings – the healthier people are.

Urbanisation has eliminated some of the green spaces in Estonian cities and has thus reduced people's opportunities to spend time in nature. This has led to an interruption in cultural continuity in terms of our habits and values. An interruption like this can lead to, for example, a preoccupation with keeping one's body and surroundings clean: fear of getting one's hands dirty or breaking into a sweat, apprehension about getting stains on one's clothes, squeamishness about picking fallen leaves off the car or disgust about flying insects. Contact with nature has been replaced by technology in recent decades. Instead of spending time outdoors, children under the age of eight spend more than 2 hours a day on digital devices; adolescents are on them 7.5 hours a day, while adults are on them more than 10 hours a day (Bosch and Bird 2018). This technology-intensive urbanised lifestyle has a negative impact on physical and mental health and, more broadly, on our grasp of why we need the natural environment and how it benefits our health.

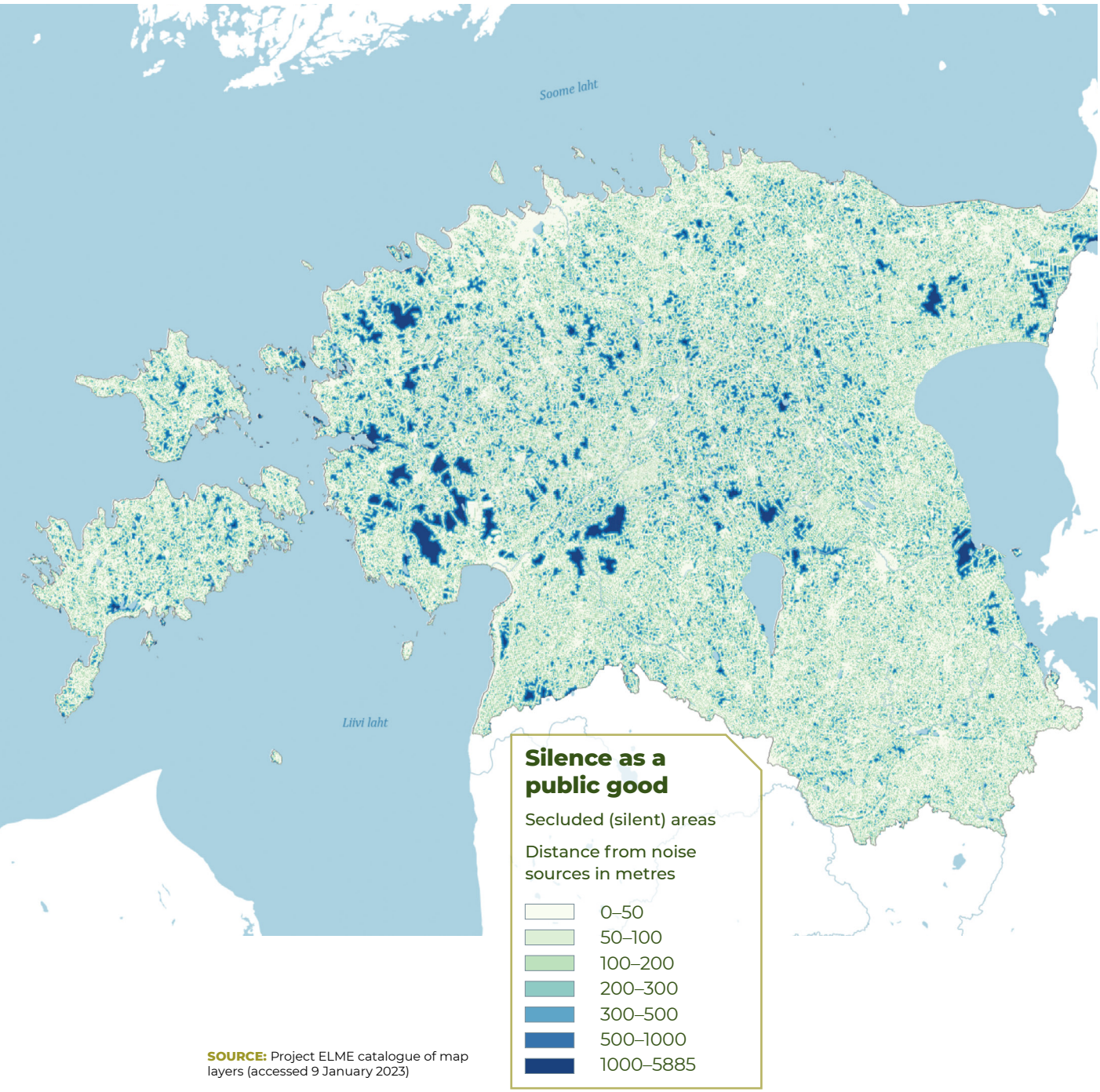
The car-centric and nature-deficient urban space in Estonian cities speaks to our technocratic approach to the environment, which prioritises the engineering solutions of urban infrastructure underground and above ground. People's physical, social and emotional needs are ignored, because managing natural environments in the urban space is seen as an economic cost. Nature can be used to improve the urban space. Nature-based solutions, to use technical language, are ways of adapting to climate change and make up a sub-field of engineering based on landscape architecture. Such solutions have also been implemented in Estonian urban environments. So far, there is little awareness of their impact on human well-being. But nature-based solutions, such as natural water bodies and urban wetlands, have clear added value for a people's mental well-being, as well as performing other useful functions, such as collecting rainwater and floodwater. More nature-based solutions could be used in urban spaces and they could be bolder, because these solutions have a positive health impact, help climate-proof urban spaces and improve spatial aesthetics.

Urban green spaces give people more opportunities to be in a cleaner environment and breathe cleaner air. Green spaces are places for physical activity and sports, spending time alone and meeting friends. They have a mental-health-restoring effect, lowering cortisol levels and raising oxygen levels in the blood and making us feel relaxed and satisfied. We might assume that people go to spend their leisure time in green spaces. Big data also confirms that the population's contact with natural areas throughout Estonia is good (Orru et al. 2022). However, studies have shown that this assumption would be misleading (Plüschke-Altof and Sooväli-Sepping 2022). There are many obstacles that prevent people from using green spaces. For example, people may be unable to make walking in green areas part of their daily routine at various stages in their life. In Estonia, urban green spaces are not as accessible as they should be; access can be limited for older people, children and young people, as well as for mothers with prams. The green spaces in Estonia's major cities have decreased, primarily due to construction. There are also many

**People in Estonia have enough opportunities to enjoy silence and seclusion in natural areas, away from human-made environments.**

blue spaces in Estonia, which, like green areas, help restore mental health. People's relationship and contact with blue spaces has not been systematically studied or planned in Estonia. In conclusion, people in Estonia have ample opportunities to enjoy silence and seclusion in natural areas, away from human-made environments. Figure 5.0.1 shows the locations of these landscapes of silence and their distance from sources of noise pollution.

**Figure 5.0.1.** Estonia's landscapes of silence, or places where people can go to recharge and listen to silence, are unique in Europe




**SOURCE:** Project ELME catalogue of map layers (accessed 9 January 2023)

**NATURAL AREAS OFFERING PEACE AND QUIET**

A 2020 project to map and evaluate ecosystem services in Estonia based on big data analysis defines seclusion as an opportunity to enjoy silence and peace without encountering other people. The most secluded places in Estonia – those farthest from human-made infrastructure – are the islets in the Väinameri (e.g. Kõverlaid, about 6 km from the nearest infrastructure); on the mainland, the only places offering more than 2 km of seclusion are located in wetlands (e.g. the Nätsi-Võlla Bog, about 3.5 km from the nearest infrastructure). The counties of Pärnumaa, Läänemaa and Ida-Virumaa have the largest number of secluded places. However, places that provide peace and quiet are changing rapidly. As extensive clear-felling affects noise absorption, the 2020 map may no longer correspond to today's reality.

## SUMMARY


The physical environment affects mental well-being more than is recognised in Estonia. People's well-being depends on access to natural environments in their everyday lives. International projects and research findings from recent years unequivocally show that we need more nature in our cities and that natural environments must be easily accessible to everyone. Moreover, the latest scientific results show that daily mobility, either by foot, public transport or bicycle, is key to a healthy population, including mental well-being.

Shaping a living environment that supports mental health requires spatial planning based on health effects and consciously designing a living environment that improves the quality of life. How do we get there? At the municipal level, we need to improve local governments' awareness and strategic cooperation. There are plenty of good examples and models in other European countries. Additional air pollution monitoring is needed, and urban space planning should address problems with air quality and traffic noise in Estonian urban environments.

Environmental pollution affects mental well-being and health. Assessing the health effects of nitrates and glyphosates is currently a complex issue. There are few studies on the mental health effects of plant protection products, and these issues are not being addressed in Estonia. As pesticides are known to affect the human microbiome, which in turn has mental health effects, the scientific debate should be followed closely.

Environmental pollution has a strong impact on the climate. Climate change has socio-psychological consequences; it is important that we recognise them and work to reduce concerns at the societal level. As humans, we depend on the environment in which we live. The cleaner and more natural our living environment, the stronger the mental resilience of society.

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# 5.1 Climate concern as a mediator in people's relationship with the environment

**AET ANNIST, BIANKA PLÜSCHKE-ALTOF, PIRET VACHT, MIRJAM RENNIT AND JOONAS PLAAN**

## KEY MESSAGE

**Climate concern is important in developing climate agency, which allows an increasingly climate-concerned population to support and motivate each other. In the face of a global threat, climate agency supports mental health and well-being and enables us to prepare for necessary changes in the social order. Climate concern taken seriously and shared does not have to lead to apathy.**

## INTRODUCTION

In 2018, the Intergovernmental Panel on Climate Change (IPCC) issued a dire warning to humanity about the state of the climate and the failed attempts to prevent anthropogenic climate change. These statements were published at a time when extreme weather events such as heat waves, wildfires and floods were becoming more frequent. Studies of attitudes in various parts of the world (including Estonia) show that people's willingness to understand climate-related future scenarios and relate these to their own future has increased significantly. It has also become apparent that societies are not decisively dealing with this urgent problem. The statements and actions of climate-concerned members of society, including their formation into interest groups, put them increasingly at odds with more passive democratic processes, expressed mainly through voting in elections.

This article aims to offer a multifaceted view of a situation in which some people are acutely aware of the dangers of climate-related changes yet have to look for solutions amid diminishing but

**People's willingness to understand climate-related future scenarios and relate these to their own future has increased significantly, even though societies are not decisively dealing with this urgent problem.**

still widespread indifference. The article first describes people's attitudes to climate and some worrying implications for human behaviour. This is followed by an analysis of the experiences of climate-concerned people in Estonia, to find out how greater awareness can have a life-changing effect. We describe a new sociality emerging from climate concerns, which has a stimulating and supporting impact on mental health and well-being.

Our analysis is based on statistical data and on sociological and anthropological research related to climate concerns. We have conducted this type of research since 2019. This data comes from ethnographic fieldwork on social media and real-life participant observations among representatives of climate and environmental movements, as well as from interviews with more than 30 activists. Some of the quotes are from Anna Silvia Seemel's bachelor's thesis (Seemel 2021).[1] Most of the interviewees are involved in the Fridays for Future and Extinction Rebellion movements and mainly come from the largest Estonian cities.[2]

## Climate concern rather than climate anxiety

Natural disasters caused by climate change can trigger psychological problems that manifest as sadness, anxiety, distress, grief, anger, depression, stress or other emotional states (Stanley et al. 2021; Cunsolo Willox and Ellis 2018). These feelings have been described using new terms such as 'solastalgia'[3] (Galway et al. 2019) or 'pretraumatic stress disorder' (Kaplan 2015). The impact of climate change on our mental health is the subject of climate psychology, a new sub-field of ecopsychology (Climate Psychology Alliance 2020).

Forward-looking emotions related to the global climate crisis, the threat of environmental catastrophe, and the resulting uncertainty have so far been described in Estonia as 'climate anxiety' or 'eco-anxiety'. But anxiety does not necessarily entail a link between a perceived threat and a subjective feeling; it can be interpreted as a subjective negative emotion that is not necessarily related to a real threat. However, climate issues are not a matter of subjective feeling or a mental health disorder but a 'real-life stressor' (O'Brien and Elders 2021). The term 'climate anxiety' obscures the fact that there is a real and serious problem behind the emotional response. Those concerned about climate change perceive the term 'anxiety' as implying powerlessness and weakness and undermining agency and ability. The terms 'climate grief', 'climate fear' and 'climate concern' are considered far more appropriate and empowering.

A review of the vocabulary used is also necessary because of its social implications. One reason climate-conscious people are concerned is the experience that much of society does not take the climate problem seriously enough. Downplaying the concern by labelling climate-conscious citizens as 'anxious' does not support them in their search for solutions. Instead, it reduces their ability to overcome concern- and fear-induced apathy or panic and seek like-minded people to find solutions. If society refers to the problem as imaginary rather than real, and there is no understanding of

1 Seemel, A.-S. 2021. The background and nature of activism in climate active individuals on the example of Estonian environmental organizations' members. Bachelor's thesis. Tartu: Estonian University of Life Sciences.

2 This research was financed by the Estonian Research Council (PRG908).

3 Stress caused by environmental changes.

**'Climate concern' is a justified stressful concern about real threats from climate change. The label 'climate anxiety' obscures the fact that there is a real and serious problem behind the emotional response.**

the need for wider action, then climate concern may indeed become an actual mental health problem in an indifferent and judgmental environment (O'Brien and Elders 2022; Pihkala 2020). On the other hand, wider societal understanding and recognition of the problem of climate change and the need to act on its solutions can mitigate risks to mental health, mobilise people to address the problem and build resilience. For these reasons, we use the term 'climate concern' throughout the article to refer to a justified stressful concern about real threats from climate change. It aptly points to a reality that causes such feelings.

## The particularities of climate change shape the spread and nature of climate concern

Climate change, the cause of climate concern, differs in several ways from other environmental problems affecting mental health (Pihkala 2020). First, climate change is a global and systemic problem. Unlike air pollution or noise, the changes that come with it are not necessarily perceptible locally. Local weather conditions do not provide a clear understanding of broader climate processes, and even less of the future changes in a particular place. But we still need to mitigate climate change, although actions by any individual society towards changes in the economy, politics or everyday life are insufficient to slow down climate change.

Another aspect of the problem is that it is still developing and lies mainly in the future. This can increase fear, as even the best models cannot fully predict the future. The fate of human societies in such a situation is also unpredictable. In Estonia, where there is relatively little direct experience of climate change, climate concerns are primarily mediated by the media and political decision-makers. People experience it as a concern, abstracted from fragments of information, about the loss of hope for the future and the imminent arrival of dire consequences.

In this way, climate concern depends on whether and how public discussions address scientific and abstract problems and translate them into everyday language. More broadly, it also depends on the extent to which science is understood and trusted as a coherent reflection of reality, and the ability of science to create adequate models of the future. The similarity of the messages from different branches of science also plays a role (e.g. both climatologists and biologists can see the consequences of climate change), as do the quality and scope of the translation of abstract scientific messages into everyday language, and the level of scientific education of the population. Unlike specific, locally measurable parameters of environmental pollution, climate change – which is global, future-related and abstract – requires an explanation that enables the whole society to begin to understand the problem. This includes those on whom the solution to the problem depends (especially in terms of their production and consumption practices) but who are shielded from societal expectations and demands for change.

Most climate-conscious citizens are critical of the existing economic system and social structures because these are seen as the main sources of the climate problem. They do not regard economic growth as a positive trend; they are aware that it leads to increased climate risks and depleted natural resources. Their climate concern is triggered by the experience that social institutions are most likely unable to manage and prevent the climate problem, as they cannot function outside the capitalist economic system and growth ideology. Because of this, they see climate change as a 'super-wicked' problem (Gilligan and Vanderbergh 2020): it must be solved in a limited time frame, it cannot be centrally controlled, its potential solvers are also the cause of the problem, and the solution is held back by irrationally continuing policy choices (Levin et al. 2012). The super-wickedness of the problem also lies in its entanglement with many other problems, and understanding this leads one to seriously doubt that the existing economic system can cope with the problems it has caused, offering merely greenwashing and 'technofixes'[4] as solutions.

**Most climate-conscious citizens are critical of the existing economic system and social structures because these are seen as the main sources of the climate problem.**

As a result, climate-concerned people change their economic behaviour, focusing on consumption and lifestyle, which from this point of view is the only conceivable course of action both on the economic and personal level. Striving to prevent the consequences of climate change means new choices and new plans for the future. This behaviour can be seen both as adaptive and as offering mental balance, because it resolves the dissonance between conventional participation in the climate-destroying economy on the one hand and climate concern on the other.

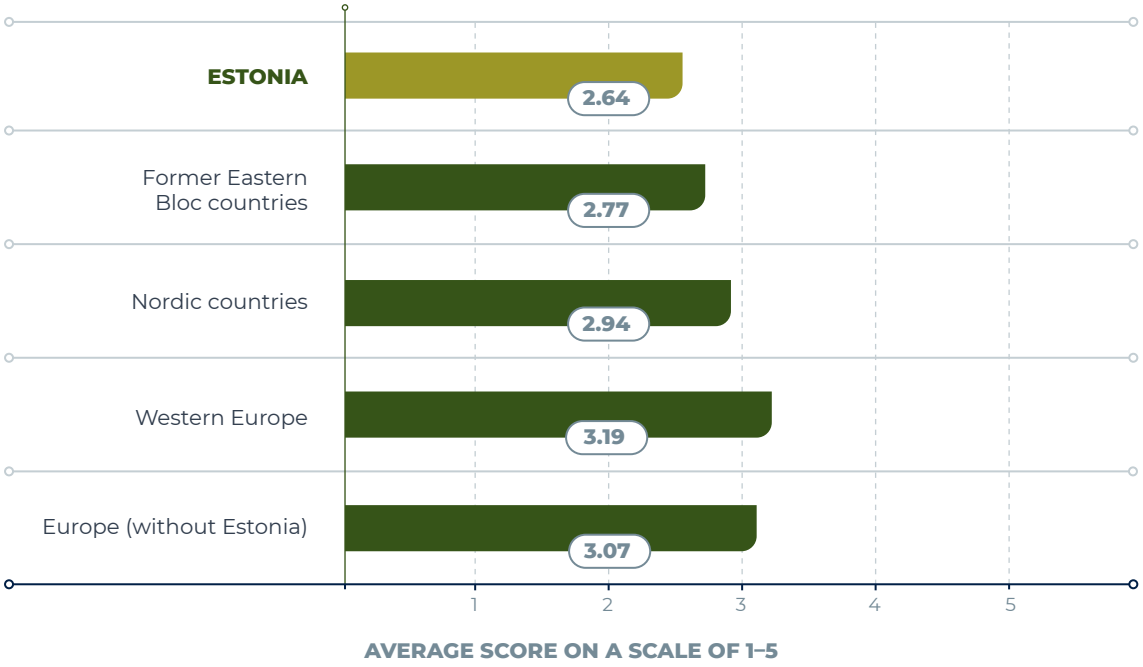
## The level of climate concern in Estonian society is low but rising

The level of climate concern varies by country and depends on the local circumstances: the climate sensitivity of the region, the threats that are publicly discussed, the socioeconomic situation, environmental attitudes and perceptions of human impact on the environment, and the views of opinion leaders (Plüschke-Altof et al. 2020). Like everywhere in the world, climate concerns are on the rise in Estonia. An environmental awareness survey of the Estonian population (Turu-uuringute AS 2020) indicates that while only 10% of the population considered climate change a serious problem in 2016, by 2020 this figure had increased to 18%. A similar situation is confirmed by a recent European Investment Bank survey (EIB 2022), according to which 19% of people in Estonia considered climate change a serious problem.

The results of the European Social Survey (2016) indicate that concern among Estonian people is lower than the European average (see Figure 5.1.1). At first glance, the situation could be associated with Estonia's climatic region, which is less affected by extreme weather conditions. Figure 5.1.1 shows, however, that Estonia's level of concern is not in the same group with the

4 *Technological fixes*, or attempts to use non-existent or as yet inadequately implemented or upscaled technologies to resolve problems (e.g. climate problems).

**Figure 5.1.1.** Average level of climate concern in Estonia and selected regions, on a scale of 1–5




**SOURCE:** figure by the authors, based on European Social Survey data from 2016

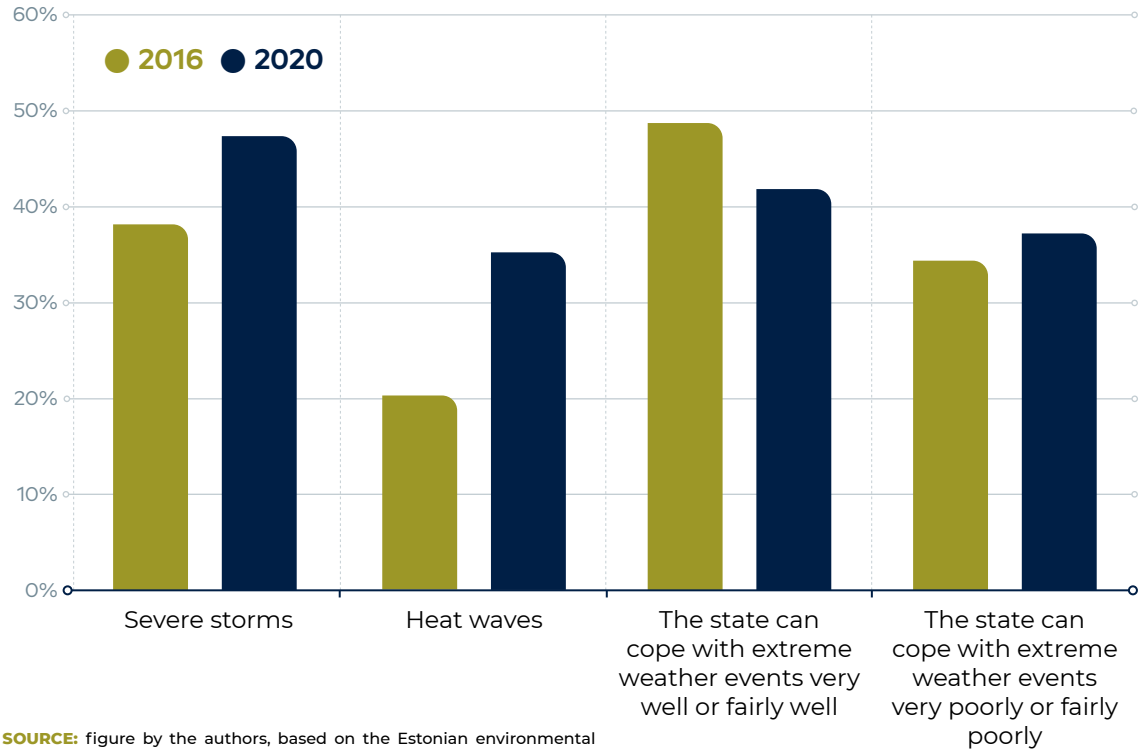
climatically similar Nordic countries but is rather closer to that of the other former Eastern Bloc countries.

According to a European Investment Bank survey (EIB 2020), there are many more men (20% in Estonia; 10% in Europe) than women (12% in Estonia; 7% in Europe) who do not admit that climate change is real. Estonian men and women also differ in terms of their levels of doubt about the anthropogenic nature of climate change (29% of men and 16% of women doubt it) and the extent to which their behaviour can influence climate change (55% of Estonian men and 31% of women do not believe that they can make an impact). On average, a higher percentage of people in Estonia (42%) than in Europe on average (31%) do not believe that their behaviour can affect climate change to any significant extent or at all.

Only 10% of the Estonian population think that climate change affects their daily life, while 17% do not think that even their children's lives could be affected by climate change. However, the percentage of all those who think that climate change affects their everyday life at least somewhat is considerably higher: 72%. In this respect, Estonians are clearly in the same group with the other climatically similar Northern European countries and share the belief that their location protects them against extreme climate events.

An Estonian environmental awareness survey (Turu-uuringute AS 2020) describes the main perceived threats caused by climate change and the respondents' assessment of the state's capacity to handle these threats (Figure 5.1.2). Over time, the threats have begun to be recognised as more important, while the percentage of people who doubt the state's ability to cope with extreme climate events has also risen. Those worried about the state's ability to respond are more often older people, Estonian-speakers, residents of small towns and settlements, and residents of central and southern Estonia.

**Figure 5.1.2.** The main perceived climate threats and assessment of the state's ability to cope with extreme climate events (%)

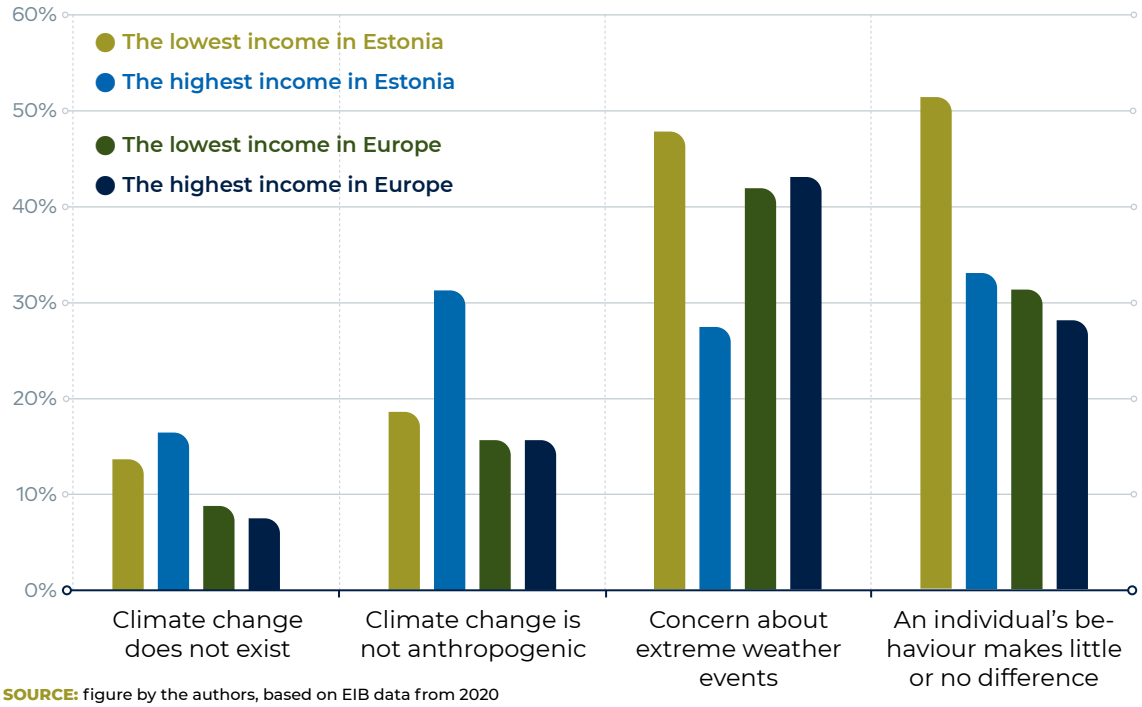



**SOURCE:** figure by the authors, based on the Estonian environmental awareness survey data from 2016 and 2020 (Turu-uuringute AS 2020)

One might assume that indifference to climate change reflects socioeconomic difficulties and deprivation, such as the inability to find the mental energy to deal with the issue. However, the European survey does not show that indifference significantly increases with low income. Rather, the share of climate change deniers and those who doubt the anthropogenic origin of climate change is somewhat larger among people with higher incomes. The income gap is particularly clear when it comes to being concerned about extreme climate events – low income increases concern and the feeling that individual behaviour has little effect. These differences are even more striking against the absence of such an income gap in the European average attitudes (Figure 5.1.3). The results of the European survey (EIB 2022) also reveal that Estonian residents rank fourth in terms of their fear that green policies may reduce their purchasing power.

A European survey (EIB 2022) indicates that 67% of Estonian residents are convinced that they are doing everything they can in their daily lives to fight climate change. At the same time, only 35% believe that their fellow citizens are doing the same. This difference in opinion is especially significant when compared to other countries: overall, these differences are larger in Southern European countries and smaller in Northern Europe. The dissonance between experiencing climate change and perceiving fellow citizens' willingness to change probably creates frustration in people, which is greater in Southern Europe, where the changes are more clearly felt. Estonia is quite exceptional among northern countries: given Estonia's location and background, our indicators should be lower than those of Lithuania and Latvia, but they are not. Unfortunately, the quantitative data do not explain Estonians' greater mistrust towards their fellow residents' willingness to act.

**Figure 5.1.3.** Climate change attitudes in lower and higher income brackets in Estonia and Europe (%)




**SOURCE:** figure by the authors, based on EIB data from 2020

## CLIMATE CONCERN AFFECTS PEOPLE'S BEHAVIOUR

Climate concern has tangible consequences, and a willingness to change one's behaviour for the sake of the climate is also relatively common in Estonia:

- 14% have already decisively reduced or stopped eating beef
- 38% buy local food products
- 27% cycle or walk (19% do so based on climate considerations)
- 13% no longer have a car
- 20% spend holidays in Estonia or nearby
- 24% do not fly

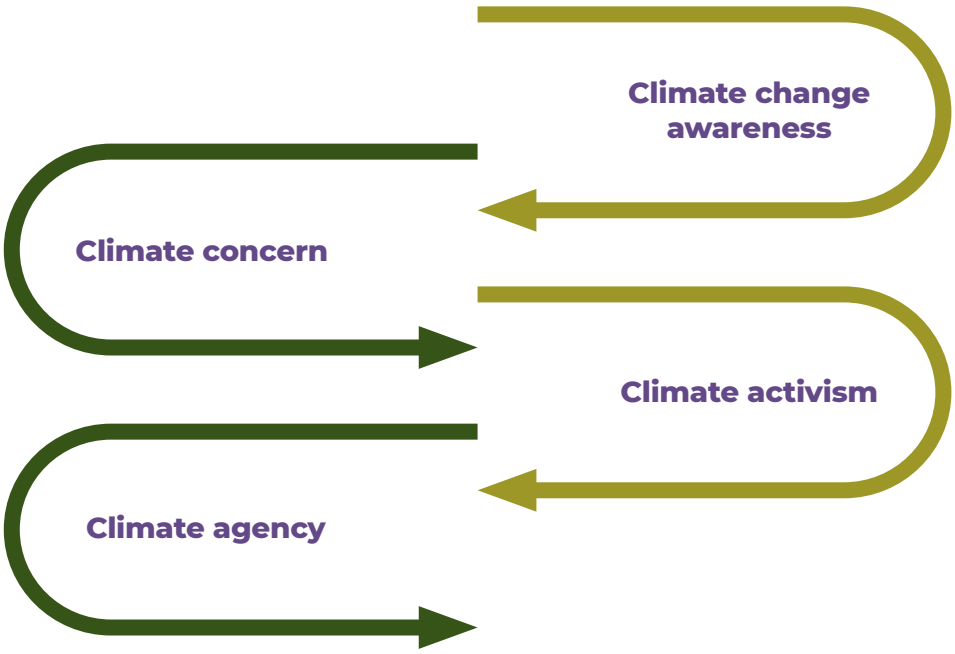
**SOURCE:** EIB 2020 and EIB 2022

At the same time, there is a striking proportion of those who do nothing, and intend to continue doing nothing, for the sake of the climate:

- 37% do not intend to reduce their consumption of beef based on climate considerations
- 27% do not want to start buying local products
- 19% do not plan to reduce car use
- 32% do not intend to start using public transport
- 40% do not intend to fly less
- 50% do not intend to give up their dream holidays in faraway destinations

Given these patterns, seriously concerned residents are likely to feel that fellow citizens do not share their concerns.

**Figure 5.1.4.** An ideal model for moving from climate change awareness to action




**SOURCE:** figure by the authors

**NOTE:** Depending on the context and the public attitude, the journey can also lead elsewhere, such as to apathy or a search for personal solutions.

## Experiences of people concerned about climate change in Estonian society

We looked at ethnographic data to get an insight into climate concern: how the caring or indifference, inaction or action around us affects the climate-concerned and what that concern or fear means to them. Distinguishing those who are seriously concerned about the climate from the rest of the population is not easy, as other people's indifference to the climate problem makes it difficult to express one's concern. A person's immediate social circle can be downright hostile to their worries. In the past three or four years, the topic has become more recognised, but with the emergence of new global climate movements, their representatives and participants have also come under criticism from the press as well as social media. Some of those concerned conceal their anxiety, while others talk about it only in a narrow circle. Here we look at people who express their climate concerns quite clearly – for example, by participating in groups focusing on the future of the climate and environment. Studying these people allows insight not only into the concern itself but also into the action that stems from it.

**Climate agency is the ability to act to alleviate climate concerns by making choices to slow down climate change and implementing these choices in a society or group.**

Mental health issues make up the framework of this article, but we do not approach them from a psychological perspective. Instead, we view climate concern as a mental health-related experience that mediates human relationships and is linked to people's actions and perceptions of the environment and the future. Experiencing climate concern is an important step towards climate agency (Pearse et al. 2018, pp. 340–342), that is, towards the ability to act against climate change. Climate agency involves overcoming the abstractness of climate problems so that people start looking for specific ways to find solutions and for support networks (see Figure 5.1.4).

## There is no turning back from climate concern

For many of the climate-concerned people in our study, their first exposure to climate issues was information about scientific data in the media and social media. The new knowledge triggered their desire to search for more information, which in turn opened their eyes to the complexity of the problem and the imminence of the threats. This experience can be world-changing. One of our youngest respondents states: *'When I became aware [of the climate issue] six months ago, [I realised] that you will deal with it for the rest of your life'* (Gerli,[5] 17). Another young interviewee describes her and her family's concerns about the burden she has taken on: *'At the same time, I can't live any other way anymore; now I think more globally, and it's hard for me not to do that. There is no way back from this'* (Mai, 19).

Several interviewees point out that their first encounters with climate problems brought along negative emotions: sadness, despair, depression and anger. Over time, these have turned into acceptance. Emotions can change across a wide range and in waves, and many describe their fear as a developing process. For example, in the beginning, there was *'depressing, overwhelming knowledge, which turned into anger at some point. […] Then there was acceptance, and then I studied even more deeply, and a new wave of depression arose from it'* (Seemel 2021). A part of the fear is purely existential. As Häli (16) says, *'maybe I'll just die at the age of 30 because of … some kind of climate change effect.'* On the other hand, fear motivates action: *'Fear is a very big motivator for me and why I am involved in climate activism in the first place. I don't want to live in the kind of future world that is currently being predicted'* (Alvar, 20).

## People feel alone in their climate concern

Among the interviewees, the feeling of being alone with their concerns increases their fear. While social media groups partly relieve the fear, personal interaction with like-minded people is mostly the privilege of big-city dwellers and people already living in environmentally-minded communities. While statistics show a fair share of concerned people, there is still only a small percentage of people at the 'extremely concerned' end of the scale, and they may not necessarily reach each other if they live in small towns or in the countryside, or if they don't use social media.

Extreme concern for a global problem that requires the effort of all humanity makes the burden especially heavy for a small group to bear. The level of concern is therefore related to a lack of opportunity to share it and the sense that fellow citizens value their comfort more than

5 All names are pseudonyms.

**The feeling of being alone with your concerns increases fear. A lack of opportunity to share your concerns and the sense that fellow citizens value comfort over a safe future can aggravate concern.**

a safe future: *'[They] just don't want to change themselves … it's more convenient as it is, it's so convenient to continue their lives and [...] not just [...] want to let it go and not drive a car anymore' (Anna, 16). The indifference of other people increases the concern: '[They] don't seem to understand the real consequences, how their own lives are affected, right? No one can see that connection'* (Gerli, 17). Seventeen-year-old Kadri describes her conflicting feelings between the carefree public and her own awareness as something she has come to call *'a schizophrenic feeling. On the one hand, I read in the IPCC report that the time for climate change [mitigation] is running out and we are on the way to a major crisis, and then I look around me, and people are so calm, they still barbeque several hundred grams of meat per person and buy new cars and bigger houses and no one cares at all. And then you get this feeling of living in parallel worlds, and it's actually quite terrible from time to time.'*

Being concerned can isolate a person from others if the others consider the topic trivial. In such a context, a climate-concerned person tends to feel that talking about climate change only annoys and irritates other people. Several respondents mention such an experience, for example: *'I don't want to push the environmental issue so much on people, because [...] they probably wouldn't like me very much, because it would be annoying'* (Häli, 16).

The gap between understanding climate change as a problem and taking action to prevent or mitigate it is something the climate-concerned are keenly aware of. They state that even those who accept and take the problems seriously *'cannot grasp the idea that they should make changes in their lives or give something up to deal with the problem now. They are ready to take action if it is beneficial and convenient for them, fits into their schedule and does not take time away from other activities'* (Viire, 30).

## Fear of a lost future

The fieldwork shows that one pervasive fear is that of a lost or uncertain future. *'I don't know at all what the future will bring [...] that's why it's so scary, it's very unstable, we don't know what can happen,'* says Alvar (20). For younger respondents, whose life path choices are in the formative stage, the distortion of future opportunities due to climate change is depressing: *'All the previous thoughts I had are of little use if the climate goes to hell, because whatever I will be doing, I will be doing it in an environment that has climate in it'* (Kadri, 17). According to several climate-concerned respondents, their pre-climate awareness visions of the future have disappeared, become meaningless or 'frozen', put on hold: *'The whole picture of the world that I had of my future, [...] in fact it basically no longer exists [...] Right now [...] I feel like I can't make any plans for my life'* (Anna, 16).

The feeling that they are living with a worrying future is shared by all climate-concerned people. Uncertainty is another part of the fear. Uncertainty, and the inability to determine when and how climate processes can have a direct impact on the person themselves, are sources of distress for the participants in the study. Many are thinking about future scenarios of social collapse, caused directly or indirectly by the impact of climate change. However, preparing for the

**A lost future or uncertain future is a pervasive fear. Preparing for the end of the world, so to speak, is strangely alienating and frightening amid an indifferent, complacent society that sticks to its old way of life.**

end of the world, so to speak, is strangely alienating and frightening amid an indifferent, complacent society that sticks to its old way of life.

The concerned have to face an uncertain future so often that they somehow manage to overcome their fear and find some peace in themselves: *'On the one hand, I am afraid that the system will collapse, and on the other hand, I hope that it will collapse as quickly as possible [...] The faster it collapses, the faster it will be possible to build something more functional'* (Marek, 26).

## The positive effects of climate concern on mental health and well-being

Thinking of climate concern as climate anxiety has meant that climate awareness is associated with the psychological problems that anxiety can lead to. Yet for our subjects, climate awareness is the path to climate agency, through which a person can manage, confront and act upon their fear. Behind climate agency is a clear understanding that climate change is the most crucial issue of our time, and a determination to take it with the seriousness it deserves. The related life changes include climate activism – seeking knowledge and solutions, informing others and publicly demanding solutions.

Although dealing with climate and environmental issues can cause deep sadness or anguish, those who have reached this point feel grateful for the knowledge gained. Awareness is a value we can build on to prepare for the future: *'Whatever it was at the beginning, it was a real pain – but now I feel like I'm several steps ahead in my thinking. I have knowledge that I can share with others. And I can work in the name of better human relationships, before society falls apart* (Tiia, 46).

For decades, there have been warnings against presenting too-bleak future scenarios on the climate issue, as the resulting despair can lead to apathy or even denial of anthropogenic climate change. However, it is precisely in the era of talking about the climate crisis instead of climate change that citizens have rapidly mobilised (Reichel et al. forthcoming). It was the ominous message about the climate crisis that brought hundreds of young people to strike outside the Estonian Parliament building as part of the World Climate Strike in March 2019.

Although fellow citizens have regarded the climate-active youth as an anxious, panicked group whose mental state should raise society's concern and who also contribute to the anxiety of bystanders, their activism can also be viewed from a completely different angle. Concern and fear often lead to activism, which helps overcome the concern and leads people into calmer waters. Activism offers a kind of support group

**Although dealing with climate and environmental issues can cause deep sadness or anguish, those who have reached this point feel grateful for the knowledge gained. Awareness is a value we can build on to prepare for the future.**

with whom the aspects that cause concern and anxiety can be safely discussed. Moreover, the fact that the group aims to solve a problem allows its members to turn their concerns into energy for action. This in turn increases mental resilience (Pihkala 2020).

Shared concern is motivating and empowering, and international reach in climate activism gives it an additional dimension: *'We all have similar fears and hopes and concerns as regards climate and activism. It is even more empowering somehow, especially the international dimension, the feeling that we all come together, we all have the same goal. It was very life-changing for me'* (Mai, 19). Participating and acting in a group relieves the fear that no one else cares about the issue and is ready for change, as well as the feeling that all action is futile. Fear can be seen as a life-changing catalyst, and the mental state of the climate-concerned does not necessarily amount to being passive or giving up.

## The climate-concerned are actively engaged in maintaining mental health

In addition to having a support group and enthusiastic agency, participants in climate movements benefit from an awareness of the importance of mental health. Climate movements started from people's concerns, which also means that people are aware of the implications of the issue for their mental well-being. Several climate groups have focused on mental balance: *'Certainly, being climate activists, we have a stronger argument or a stronger motivation to avoid this kind of burnout thing, because the point of this whole thing is sustainability, both in the world with nature and so on, and in the movement itself* (Mai, 19). *Self-analysis is also important for understanding the role of activism in the balance: 'Remaining calm at the same time, not being crushed by everything that is happening. I guess sometimes I used to have a hard time being active seeing how bad everything is'* (Anna, 16).

**Climate movements started from people's concerns, indicating that people are aware of the implications of climate issues for their mental well-being.**

The same thinking is supported by an activist speaking specifically about mental health: *'I've come across people with crazy traumas, but I understand that it's just such an emotional topic. […] That's why I've gone a little bit in the direction where I'm really interested in maintaining mental health* (Cäthy, 30). The balance is also maintained by placing limits on how much to deal with topics that can aggravate the concern: *'We have a rule that we can talk about these topics for maybe two hours a day, and then we stop and start talking about sports or something. You can't live in it all the time'* (Artur, 31).

Thus, participating in climate-conscious groups – both in-person and virtual – helps on many levels. First, it helps that the object of concern is dealt with by searching for information and the best solutions. Second, it provides a supportive social environment where people work together to solve the problem. Third, mental health issues are consciously addressed in such environments.

## SUMMARY

Climate concern means awareness of a global, systemic, future-related problem that societies and fellow citizens are not addressing seriously enough. Although there are not many extremely climate-concerned people, an increase in awareness is a clear trend, influenced by both information on climate-related disasters in the world and personally experienced changes in the weather. The rising climate concern is not a passive panic that ends up causing apathy; instead, it leads people looking for relief to seek out new knowledge and groups that share relevant knowledge and offer outputs for action. As such, climate concern is a path to climate agency and the possibility of channelling one's concern into new social relations and activities, which in turn help shape the situation and general trends. Therefore, it is not a mental health problem but a solution-seeking adaptation process motivated by a real problem.

However, it should be kept in mind that the path to climate agency cannot be taken for granted. It is important from the mental health perspective that for some people, climate anxiety in its different stages reduces the ability to cope, and they risk developing mental health problems. This is especially so for those who cannot find a way to share and redirect their concerns. Mental health problems arising from climate concern are signs that something is wrong in the relationship between humans and the environment. The whole society should pay attention to this, not just those who experience it more acutely.

Concern or fear in the face of danger is an adequate response, as is seeking social support in such a situation. Climate-conscious people are usually also aware of the importance of maintaining mental health. Taking climate change and environmental damage seriously and implementing solutions to it should be a common goal for Estonian society. Then climate change adaptation can truly be tackled. And this in turn will help alleviate the tangible consequences of climate change, while also supporting science-based environmental and climate awareness, encouraging climate-concerned people to come together and act towards a common goal, and promoting these people's mental health in the process.

**Climate concern is not a mental health problem but a solution-seeking adaptation process motivated by a real problem.**

**Concern or fear in the face of danger is an adequate response, as is seeking social support in such a situation.**

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# 5.2 Annoyance due to air and noise pollution

**HANS ORRU, KATI ORRU AND TRIIN VEBER**

## KEY MESSAGE

**Air pollution and noise pollution cause annoyance, which can affect mental health. In addition to exposure to pollution and physiological irritation, the fear of the health effects of environmental factors affects people's mental well-being. We need to reduce the air and noise pollution from industry and traffic to mitigate their effects on mental health. But the related risks must be communicated carefully so as not to cause excessive fear or stress.**

## INTRODUCTION

The physical living environment shapes our well-being and life satisfaction. The importance of our living environment has been little recognised so far, and we tend to take it for granted. For example, the availability of clean air and drinking water is required for everyday well-being and health. We only pay attention to these foundations when something is very wrong – when the city air suffocates us or when the noise does not let us sleep. Both air and noise pollution cause annoyance, which can affect mental health. This article outlines the effects of air and noise pollution on mental health, the extent of this problem in Estonia, the dynamics of the problem, and the possibilities to reduce disturbing environmental factors.

## Annoyance due to environmental factors

Annoyance is a human physiological, emotional, cognitive, and behavioural response to stressors, including air pollution and noise. The symptoms of annoyance are similar to those of psychological stress: dissatisfaction, irritability, fatigue, pain from tension and problems with sleep. For example, residents in areas with more pollution are more likely to suffer from mental disorders, including anxiety and depression (Marques and Lima 2011). Studies on environmental stress show that exposure to chemical, noise or air pollution causes irritation in our smell or sound receptors, which in turn activates the autonomic

**Annoyance has symptoms similar to those of psychological stress: uneasiness, irritability, fatigue, pain from tension and problems with sleep.**

nervous system, affecting our physiology and emotions (Sucker et al. 2008). Evolutionarily, humans are programmed to recognise sounds and odours as potential sources of danger. For example, a bad odour or visible smoke signals polluted air, and certain sounds are unpleasant for us. Furthermore, when a predator roars, our blood pressure rises, heart rate increases and stress hormones are released. Historically, this has helped humans to prepare themselves in dangerous situations and make a quick escape if necessary. But being constantly on alert, for example, due to polluted air and disturbing noise, burdens the body and can, in the long term, exhaust the organism and lead to chronic illnesses.

## Awareness of environmental pollution and fear of related effects

Being exposed to a hazard is not the only way of experiencing environmental health impacts; our perception of environmental factors and attitudes towards hazards can also have an effect. Biopsychosocial studies show links between actual pollution, perceived[1] pollution, perceived health risks and health symptoms (Andersson et al. 2013; Crichton and Petrie 2015). These links are called subjective risk perception. In addition to exposure to pollution and physiological irritation, subjective risk perception and fear of the health effects of environmental factors affect people's psychological well-being and health. People's perception of pollution and risk can affect health more than actual pollution levels. For example, at lower concentrations of pollution, perceived pollution and health risks predict health symptoms significantly better than actual pollution levels and exposure do (Stenlund et al. 2009; Orru et al. 2018). For this reason, the perception of air pollution and the perceived serious health risks associated with it may have bigger effects on health than the direct physiological effects of air pollution. Figure 5.2.1 shows that some of the symptoms leading to illness are caused by direct actual exposure, while others are caused by perceived risk and exposure, which in turn are affected by actual exposure.

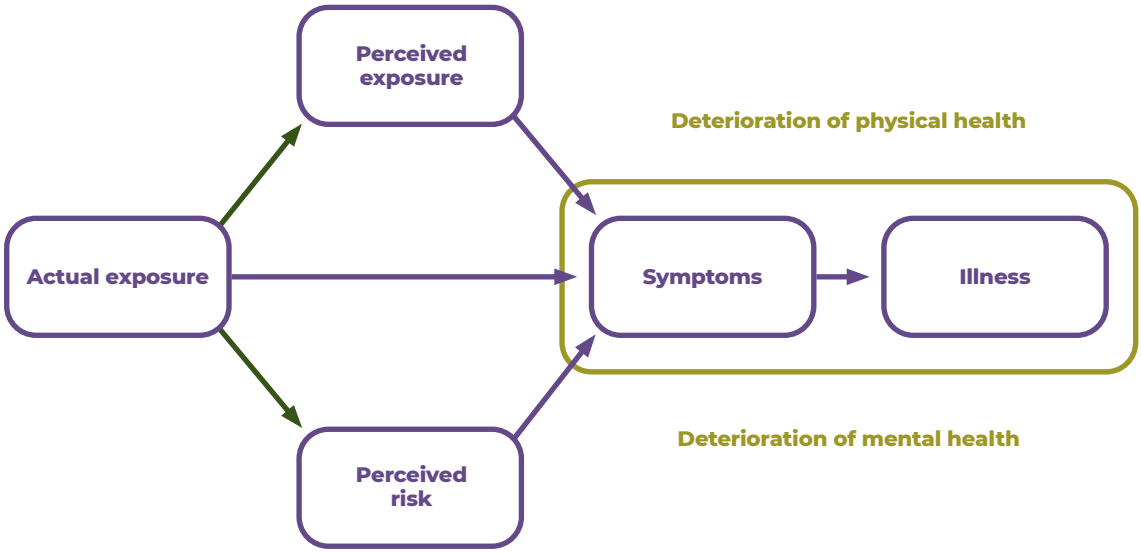
The following analysis combines: (1) data from the Estonian cross-sectional sociological study KesTeRisk[2] (K. Orru et al. 2015) on the risk perceptions of 1,000 residents and people's assessment of exposure to air pollution, and (2) modelled annual average levels of particulate matter in a person's place of residence (K. Orru et al. 2018). The analysis examined

**Subjectively perceived risk and fear of the health effects of environmental factors affect people's psychological well-being and health.**

1 Perceived pollution, exposure and risk are a person's subjective assessment of the amount of pollution they are exposed to and the extent of the related risk.

2 The pan-Estonian study KesTeRisk (Environmental Health: Understanding Risks and Motivation for Mitigating Health Risks) sought to find out the residents' subjective views of the wholesomeness of their living environment, awareness of environmental and health risks, and opportunities to reduce environmental risks.

**Figure 5.2.1.** Perceived air and noise pollution and the resulting psychophysiological effects




**SOURCE:** figure by the authors

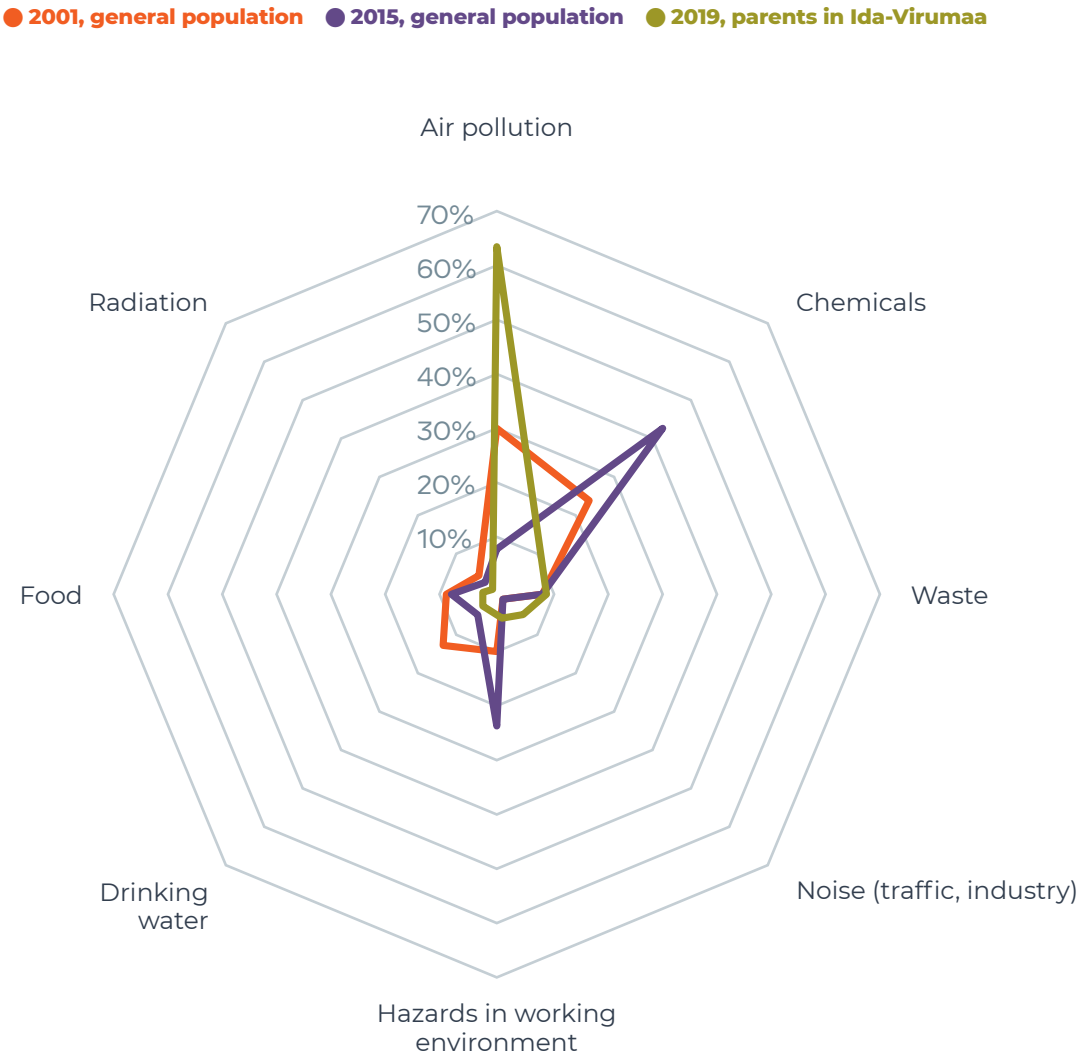
the role of objectively measured levels of air pollution and perceived exposure to air pollution in the development of negative health effects. It was revealed that air pollution levels did not correlate with the number of symptoms and chronic diseases. Instead, health indicators are influenced by perceived exposure and health risks. This means that in environments where pollution levels are below legal limits, air pollution is a significant health risk, especially if people pay attention to it and consider it a significant health risk.

The perceived risk of air pollution varies significantly in different parts of Estonia, being highest in Ida-Virumaa. In a 2015 study of health effects in the oil shale industry, a survey of adults revealed that more than 10% of the residents of Ida-Virumaa consider air pollution unbearable (respondents were asked to assess their annoyance with air pollution on a scale of 0–10). In addition, half of the respondents saw air pollution as a high or very high risk to their health, as well as

**The perceived risk of air pollution varies significantly in different parts of Estonia; it is the highest in Ida-Virumaa.**

to that of their family and others close to them. Figure 5.2.2 shows the importance of the health risks of air pollution; the parents in Ida-Virumaa consider air pollution to be by far the most prominent among the eight mentioned environmental risk factors. In the survey, the respondents had to pick the most prominent environmental factor that they thought caused illnesses.

**Figure 5.2.2.** Evaluations of the main causes of illness resulting from an unfavourable living environment in Estonia, proportion of those who named the factor (%)




**SOURCE:** figure by the authors, based on KesTeRisk survey data from 2015

## Environmental sensitivity

Environmental sensitivity describes the feelings of a person who is particularly sensitive to annoyance caused by environmental factors. People's physiological and psychological state (including attitudes) amplifies their response to an environmental factor: noise, air pollution, unpleasant odours and electromagnetic fields. For example, people sensitive to noise pay more attention to noise, perceive noise as more dan-

**Regardless of the noise levels, exposure to traffic noise can cause anxiety and sleep disorders in people sensitive to noise. High sensitivity to noise is associated with psychological problems such as depression and anxiety.**

gerous, and react more intensely to noise compared to those who are not sensitive to noise. Environmental sensitivity is usually evaluated using questionnaires. Studies of the associations between objective levels of noise (e.g. measured levels of traffic noise) and self-rated health show that the higher the level of noise, the stronger the association with anxiety and insomnia among people sensitive to noise (WHO 2018). Regardless of the levels of noise, exposure to traffic noise can cause anxiety and sleep disorders in people sensitive to noise. High sensitivity to noise is associated with psychological problems such as depression and anxiety.

## Physiological effects of air pollution and noise on mental health

In addition to causing annoyance, as shown in Figure 5.2.1, air pollution has direct effects on mental health through neurophysiological mechanisms (Figure 5.2.3). $PM_{2.5}$[3] nanoparticles in air pollution (e.g. particles approximately 10 to 20 nanometres in size in vehicle exhaust emissions) are small enough to reach the brain via the bloodstream or the olfactory nerve. The exact modes of action are still being studied (the most likely effect is the inflammation of the nervous system), but existing research suggests that exposure to $PM_{2.5}$ increases the incidence of neurodegenerative diseases (Parkinson's and Alzheimer's) and is associated with an increased risk of dementia and suicide. Studies have also suggested that air pollution increases the risk of depression and anxiety and reduces intelligence and learning ability.

Similarly, exposure to traffic noise can affect mental health, cause psychological problems and impair cognitive abilities. Biological reactions in the human body happen primarily through the nervous system or endocrine system and stress hormones (adrenaline, noradrenaline and cortisol). This can cause physiological stress, concentration difficulties, and sleep and metabolic disorders, which in turn can lead to more serious conditions (hypertension, ischaemic heart disease, stroke, obesity and diabetes).

## Air quality in Estonia and its health effects

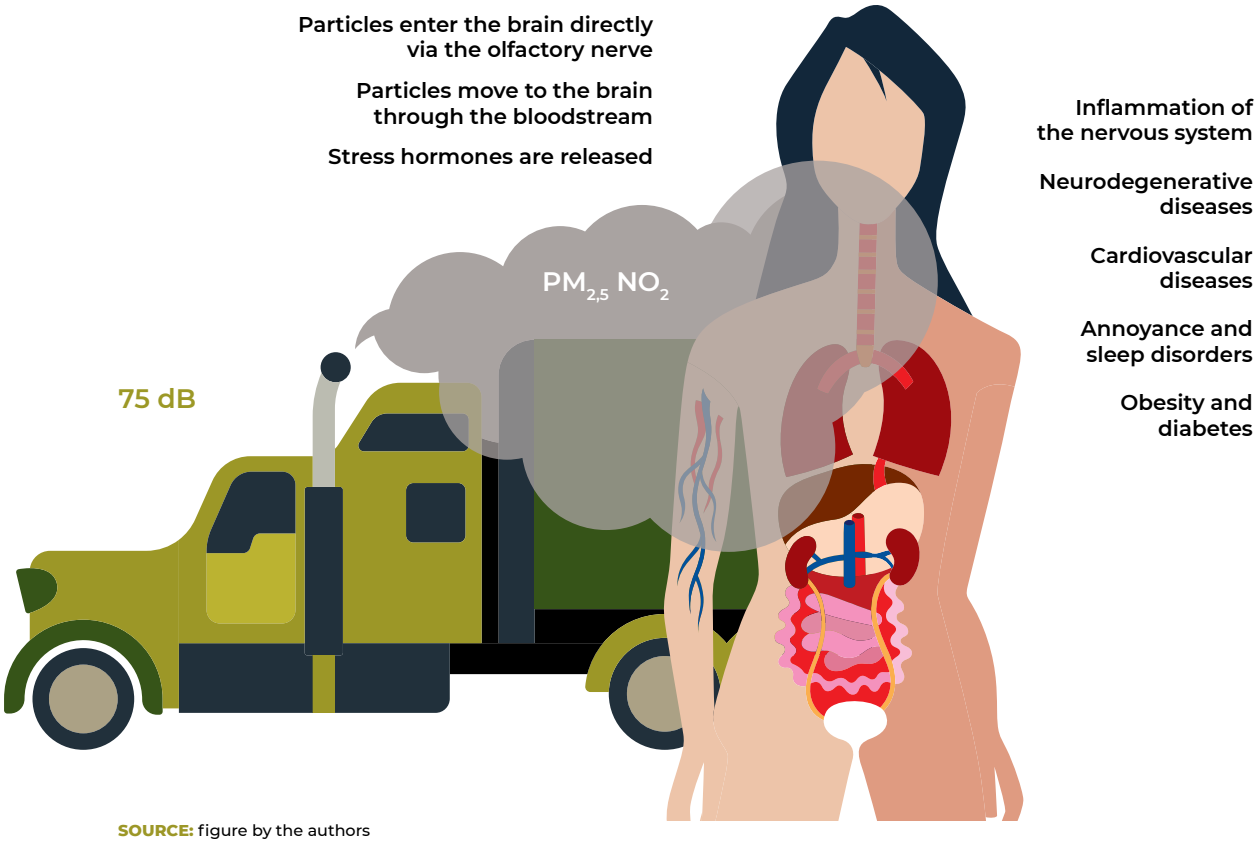
eIn Estonia, air pollution is measured in the major cities and industrial areas, and background pollution is measured in rural areas. Air quality data can be seen in real time at https://ohuseire.ee/en. Coarse matter ($PM_{10}$) and fine particles ($PM_{2.5}$) have the greatest health impact. The main sources are traffic (exhaust gas and particles from the wear and tear of road surface and tyres), domestic heating (mainly from stove heating) and industrial pollution (particularly in Ida-Virumaa). Nitrogen dioxide ($NO_2$) is also considered an important indicator of traffic pollution.

We will take a look at the dynamics of air quality in four major Estonian cities since 2008, when pollutant monitoring began in all of them.

Ambient air monitoring reveals that in recent years, Estonia has met the main criteria of pollution levels set by the relevant European Union: either the pollution levels have remained below the limits or the frequency of exceeding those limits has remained within the permitted

3 PM refers to the microscopic particles of pollutants that surround us in our everyday environment and reach the bloodstream through the respiratory tract, spreading throughout the body. Once the particles reach an organ, they can cause a variety of health effects (Figure 5.2.3). Particulate matter ($PM_{10}$, diameter < 10 µm), fine particles ($PM_{2.5}$, diameter < 2.5 µm) and ultrafine particles ($PM_{0.1}$, diameter < 100 nm) are distinguished.

**Figure 5.2.3.** Exposure to air pollution and noise, and the neurophysiological effects in the body after exposure




**SOURCE:** figure by the authors

parameters. (According to the EU regulation, the average daily limit of PM10 may be exceeded 35 times a year and the average hourly levels of $NO_2$ 18 times a year.) There is a downward trend in the levels of both $PM_{10}$ and $NO_2$, indicating improved air quality (Figure 5.2.4). But is the air quality good enough not to affect physical and mental health?

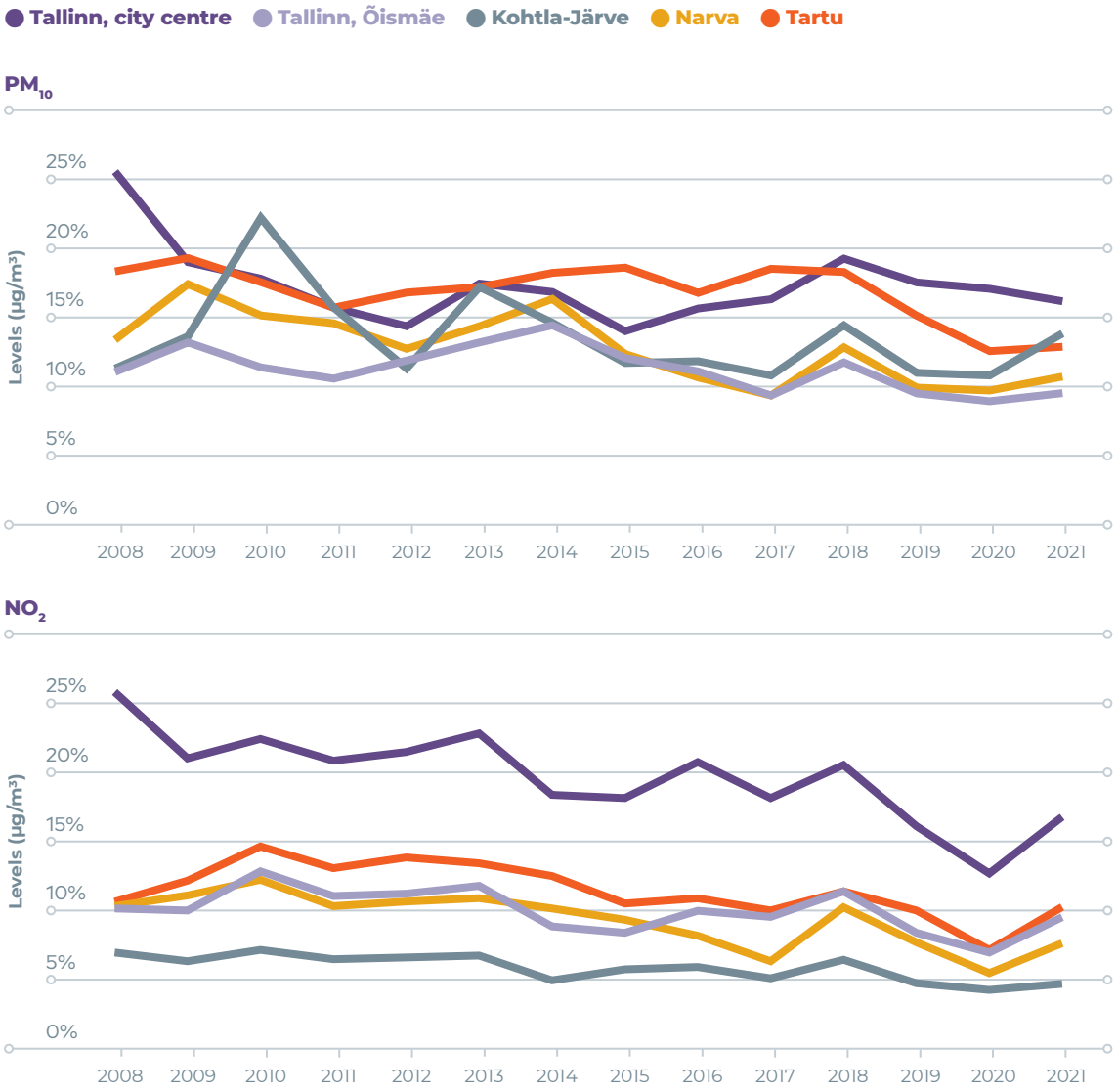
Recently, the World Health Organization (WHO) released new air quality guidelines: the annual average level of $PM_{2.5}$ must be less than 5 µg/m³, the annual average level of $PM_{10}$ less than 15 µg/m³ and the annual average levels of $NO_2$ less than 10 µg/m³. Such air quality is achieved in the rural areas and many suburban areas in Estonia, but not in the centre of Tallinn, the Karlova district in Tartu or the industrial areas of Ida-Virumaa, according to the data from the measuring stations in these places. European Environment Agency's analyses paint a somewhat distorted image of Estonian air quality. For many years, only the data from the Õismäe measuring station in Tallinn, which has the lowest particulate matter levels out of all the city's measuring stations, have been used in this study (Figure 5.2.4). In fact, Estonia's air is not the cleanest in Europe or the world, as stated in the media, but it is among the cleanest in Northern Europe.

Health risk evaluations and population-based epidemiological studies have shown the impact of air quality on health. According to a recent study, air pollution from atmospheric particulate matter and nitrogen dioxide caused an estimated 1,179 premature deaths in Estonia in 2020, which is 29% less than a decade earlier (H. Orru et al. 2022). The impact of ground-level ozone caused an-

other 134 premature deaths (H. Orru et al. 2016). Population-based epidemiological studies in Tartu (Pindus et al. 2016) and Ida-Virumaa (Idavain et al. 2019) have revealed that air pollution has a clear effect on both respiratory and cardiovascular diseases even at the previously described low levels of air pollution.

Epidemiological studies look at the occurrence of diseases and other health-related phenomena, including deaths, in a certain population group or the entire population and connect these phenomena to determinants and risk factors, which include environmental pollution. A study by Pindus et al. (2016) revealed that heart diseases occurred more frequently in residents who were exposed to higher levels of $PM_{2.5}$, while the average exposure was only slightly above the norm (5.6 µg/m³). The study by Idavain et al. (2019) showed that third- and fourth-grade students (N = 1,326) in Ida-Virumaa who were exposed to benzene air pollution had more cases of chronic rhinitis, asthma, coughs and respiratory tract inflammation.

**Figure 5.2.4.** Annual average levels of coarse matter ($PM_{10}$) and nitrogen dioxide ($NO_2$) in Estonian monitoring stations




**SOURCE:** figure by the authors, based on ambient air quality data (https://ohuseire.ee/en)

## Noise levels in Estonia and related health effects

As a member of the European Union, Estonia is required to submit strategic noise maps for its major cities every five years to evaluate the noise situation. Action plans to reduce ambient noise are drawn up based on these strategic maps. The most recent strategic noise maps are from 2017 and provide data on Tallinn and Tartu in 2015 (Figure 5.2.5). Based on these, 61% of the residents of Tallinn and 60% of Tartu are exposed to a high level of road traffic noise ($L_{den}$ [4] ≥ 55 dB). A total of 3,300 residents in Tallinn and Tartu are exposed to the high noise level of railway traffic ($L_{den}$ ≥ 55 dB), and 3,100 residents in Tallinn are exposed to aircraft noise ($L_{den}$ ≥ 55 dB). Compared to the maps of 2012, the number of people exposed to high levels of noise has decreased in Tallinn and increased in Tartu based on the 2015 data. It is important to note that this is a logarithmic scale. Thus a difference of 3 decibels means double the noise level, a difference of 10 decibels is about 10 times the noise level, and a difference of 20 decibels is more than 100 times the noise level.

The health effects of road, rail and aircraft noise in the cities of Tallinn and Tartu and near the main roads were evaluated in 2020 (Veber et al. 2021), applying the common methods for assessing harmful effects established by European Union Directive 2020/367, which uses modelled noise levels and exposure-response relations found in previous epidemiological studies. The survey revealed that 12% of the residents of Tallinn and 9% of Tartu experience high annoyance due to road traffic noise. Approximately 3% of residents in both cities experience high sleep disturbance due to road traffic noise. Since relatively few people are exposed to rail and aircraft noise, the resulting high annoyance and high sleep disorders are also less frequent – less than 1% of the population of Tallinn and Tartu is affected. In addition to annoyance and sleep disturbance, an estimated nearly 150 cases of ischaemic heart disease and a similar number of stroke cases caused by road traffic noise are diagnosed every year (Veber et al. 2021). This clearly indicates that traffic noise is a significant problem in our cities and around the main roads.

**Road traffic noise causes high annoyance levels among 12% of residents in Tallinn and 9% of those in Tartu. About 3% of residents in both cities experience high sleep disturbances due to road traffic noise.**

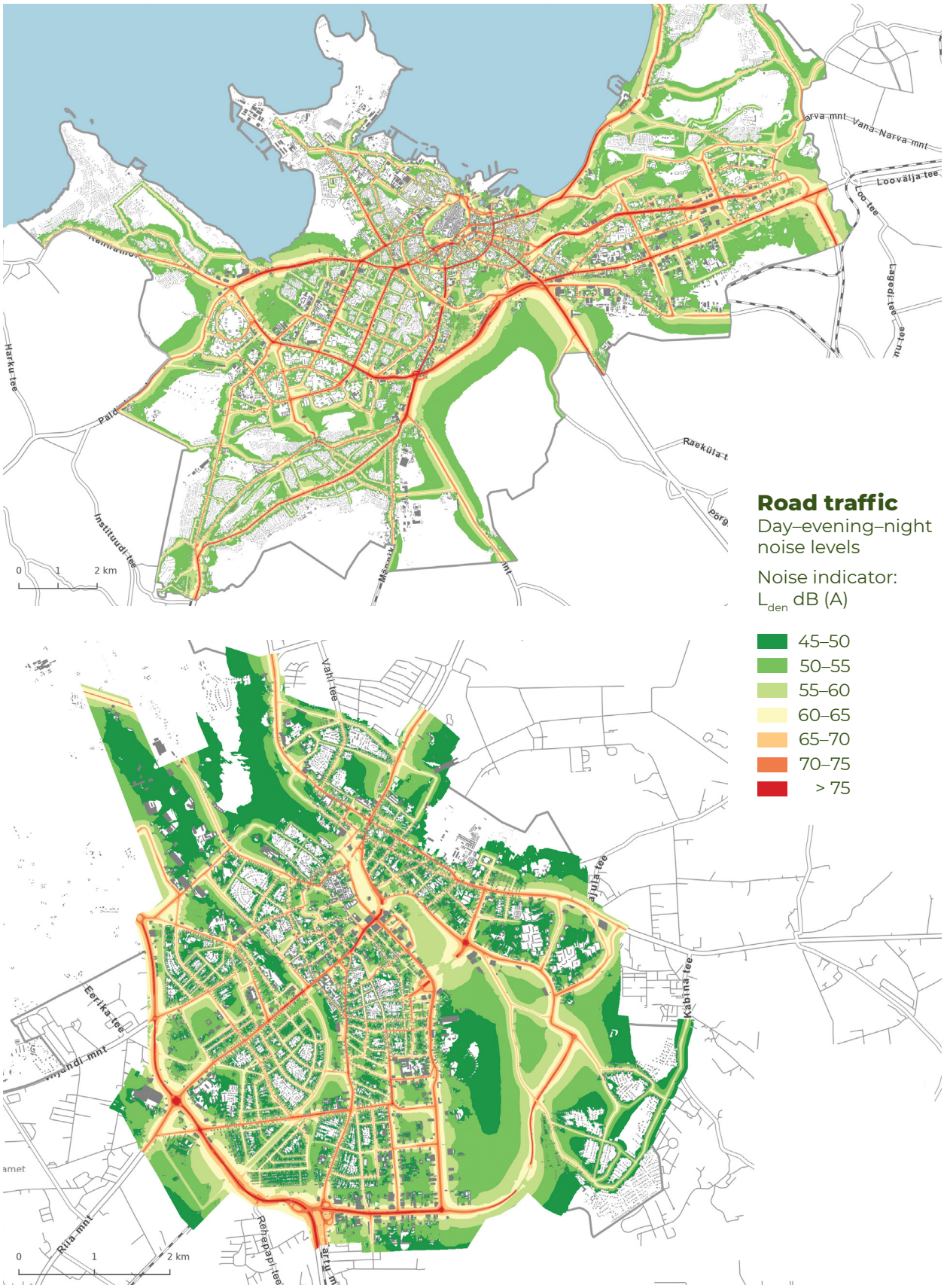
## How air and noise pollution relate to mental health and well-being

### Air pollution and life satisfaction

The association between exposure to air pollution and individual life satisfaction was tested in an Estonian analysis where the sociodemographic indicators (marital status, employment, and trust in people and institutions) of people who participated in the European Social Survey in 2010 and 2012 were combined with modelled annual average levels of particulate matter in their place of

4 $L_{den}$ is the day–evening–night noise level indicator – the A-weighted long-term average sound pressure level determined on the basis of the numerical values of all day, evening and nighttime sound pressure levels of the year. It is an indicator of general noise annoyance.

**Figure 5.2.5.** Road traffic noise in Tallinn (above) and Tartu (below) based on the day–evening–night noise level indicator $L_{den}$




**SOURCE:** H. Orru et al. 2020

**Air pollution directly affects our life satisfaction.**

residence (K. Orru et al. 2016). The annual levels of modelled particulate matter averaged 8,3 ± 3,9 µg/m$^3$ in the place of residence of Estonian respondents, which means they were generally below the new WHO air quality guidelines. After considering the usual sociodemographic characteristics that affect people's life satisfaction, the low levels of air pollution still had a statistically significant negative effect on life satisfaction: for a 1 µg/m$^3$ increase in levels of particulate matter, life satisfaction decreased by 0.017 points (on a 10-point scale) (Figure 5.2.6). When the separate self-rated health indicator was included in the analysis, the effect of air pollution on life satisfaction indicators remained significant. This suggests that the impact of air pollution not only is manifested in physical health but also directly affects our life satisfaction

## How traffic noise is associated with depression and psychological problems

Using the dataset of the KesTeRisk survey (K. Orru et al. 2015), Shepelev (2019) looked at the association between perceived noise exposure, perceived risk and health complaints, and the respondent's depression or psychological problems. Despite the fact that 35% of respondents considered their exposure to traffic noise high, 48% of respondents had not taken any action to avoid exposure to its negative impacts. Figure 5.2.2 shows that traffic and industrial noise played a relatively small role in the risk evaluations. Since the majority (more than 80%) of the respondents are not aware of the impact of traffic noise on health and are therefore not motivated to protect themselves, national institutions must play an important role in protecting people's health.

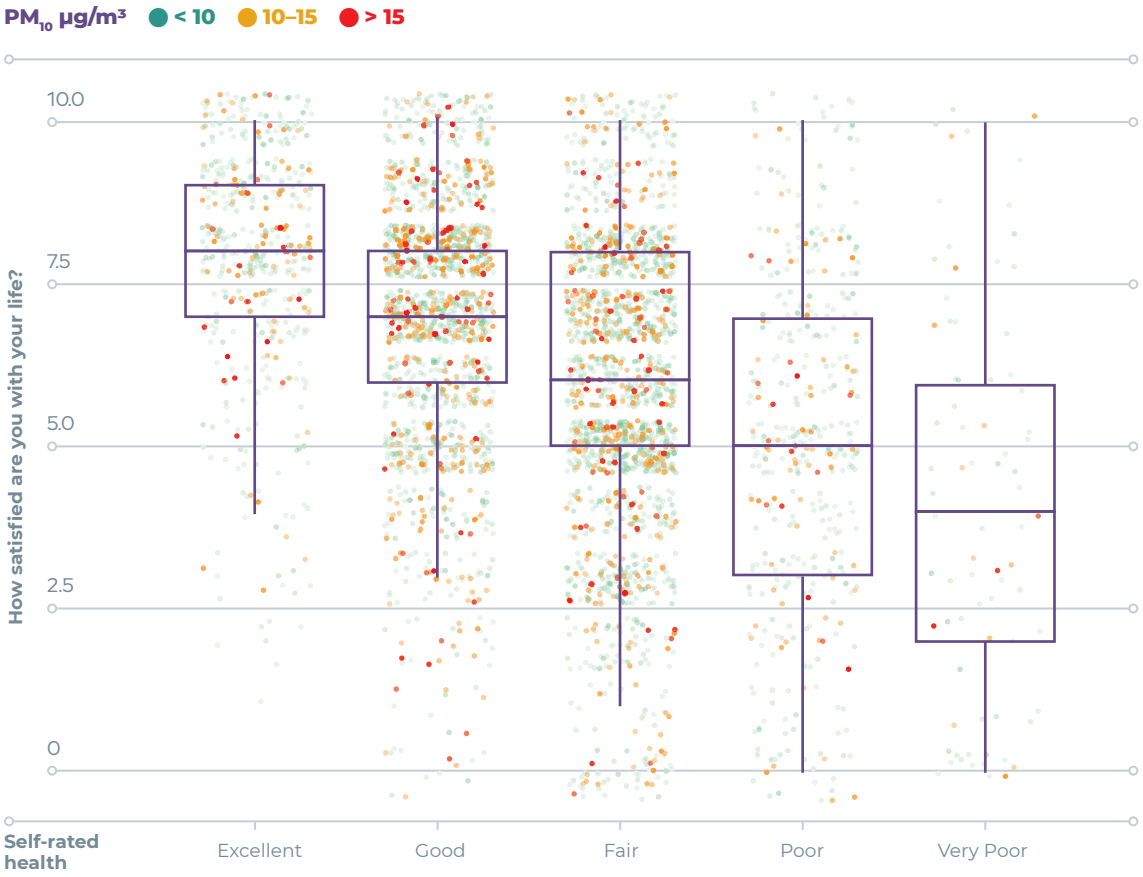
Depression or psychological problems were 1.4 to 2.3 times as common among respondents who perceived high exposure to traffic noise or considered noise to be a high health risk (Table 5.2.1). Logistic regression was used to identify associations between traffic noise (self-rated exposure and perceived risk) and depression or psychological problems. For this purpose, two models were created: Model 1 was adjusted for socioeconomic factors and Model 2 for noise sensitivity. A statistically significant relationship between self-rated exposure to traffic noise and psychological problems emerged in Model 1 but disappeared after statistical adjustment for noise sensitivity in Model 2. However, it is statistically significant that those who perceived traffic noise as a high risk to their health had 2.5 times the chance of developing depression or psychological problems, even after adjusting for noise sensitivity.

## Our awareness of environmental health effects and annoyance is increasing

Eurobarometer surveys have evaluated people's attitudes about health effects in different countries. The surveys show that Estonian residents are

**Depression or psychological problems were 1.4 to 2.3 times as common among people who perceived high exposure to traffic noise or considered noise to be a high health risk.**

**Figure 5.2.6.** Annual average modelled PM10 levels in the place of residence (μg/m³), respondents' subjective life satisfaction (0 – extremely dissatisfied, 10 – extremely satisfied) and general self-rated health




**SOURCE:** K. Orru et al. 2016

**NOTE:** The different coloured dots indicate the levels of air pollution. The box plot shows the average level of life satisfaction, the lower and upper quartiles, and minimum and maximum values.

**Table 5.2.1.** Distribution of depression or psychological problems by exposure and perceived risk, and odds ratio of health problems with 95% confidence intervals by factors related to traffic noise

| | Depression or psychological problems (%) | Model 1, adjusted OR* (95% CI) | Model 2, adjusted OR** (95% CI) |
|---|---|---|---|
| **Perceived traffic noise** | | | |
| Low exposure | 10.3 | 1 | 1 |
| High exposure | 14.0 | 1.5 (1.0–2.2) | 1.3 (0.8–2.0) |
| **Perceived health risk** | | | |
| Low | 9.6 | 1 | 1 |
| High | 22.2 | 2.5 (1.6–4.0) | 2.5 (1.6–4.0) |

**SOURCE:** table by the authors, based on KesTeRisk survey data from 2015

**NOTES:** * Model 1 is adjusted for socioeconomic factors. ** Model 2 is additionally adjusted for noise sensitivity.

slightly less concerned about environmental health effects than the average respondent in the European Union, but their awareness is increasing. According to Eurobarometer, in 2005, 47% of Estonian residents believed that health damage from environmental pollution was highly likely or quite likely, but by 2010, this figure had risen to 51% and by 2020 to 70%. Across the EU, an average of 61% of respondents in 2005 and 2010, and 78% in 2020, considered the damage likely. On the other hand, health risks can create fear in people. This is explained by the European Social Survey data, which show that heightened fear of environmental health effects may be related to a generally increased attention to the safety of the living environment and caring about the environment (the share of people valuing each has increased from 15% to 21% and from 26% to 31%, respectively, in the period between 2004 and 2012).

Fear, in turn, causes annoyance. One of the indicators of annoyance is the number of environmental nuisances[5] that residents report to the Health Board or the Environmental Board. Disturbances caused by odoriferous substances are an example of an environmental nuisance. Many pollutants emitted into ambient air, especially from industrial plants, have a specific odour that can be unpleasant. We can smell hydrogen sulfide ($H_2S$) even at very low concentrations, though this does not mean that it is harmful to humans at low levels. While odour nuisance does not have a direct health risk for people, it can cause annoyance. That is why the concept of exceeding the 'disturbance levels of odoriferous substances' is used. But noises below the limit values can also cause disturbances and complaints – for example, when a motorcycle passing at night does not exceed the current limits on night noise levels but wakes people up and causes annoyance. Such disturbances can lead to stress and affect mental health.

**Estonians are slightly less concerned about environmental health effects than the average respondent in the European Union, but awareness is increasing.**

Odour nuisances are registered by the Estonian Environmental Board. Their impact on the quality of life has not been studied systematically, but Kesanurm et al. (2016) found that between 2010 and 2015, residents of the Kohtla-Järve region registered complaints about unpleasant odours on 798 occasions. An evaluation of the presence of odoriferous substances revealed that the unpleasant odour in the area exceeded the odour detection threshold. Hydrogen sulfide was the main cause of the odour nuisance; the main sources were the semi-coke hills[6] and sudden emissions[7] from the industry. Since the odour of hydrogen sulfide can be detected at very low concentrations, such levels do not pose a direct threat to health but are still a source of discomfort. Therefore, the owners of the source of disturbance are required to

5 An environmental nuisance means a human-induced direct or indirect adverse impact on the environment, including an impact on human health, well-being, property or cultural heritage via the environment. Environmental nuisances also include adverse impacts on the environment that do not exceed a numerical limit or are not regulated by a numerical limit.

6 Artificial hills created by the accumulation of residue from oil shale production in Kohtla-Järve and Kiviõli. Unless covered, the semi-coke hills are of dark colour and cause air and water pollution.

7 Operational emissions during a normal start-up or shutdown of a device and emergency emissions.

draw up an action plan to reduce the emission of odoriferous substances.

The complaints submitted to the Health Board give an idea of the frequency of noise annoyance that have been analysed in the action plans for reducing ambient noise. For example, 181 noise complaints were filed in Tallinn and 52 in Tartu between 2013 and 2017. According to the Health Board, the problematic areas are those where noise-sensitive buildings are located next to streets with heavy traffic, production facilities or technical equipment. Construction noise and domestic and entertainment noise also cause annoyance. While the number of noise complaints has increased between 2013 and 2017, one of the reasons may be people's increased expectations for the quality of the environment.

## SUMMARY

Studies show that air and noise pollution cause both annoyance and mental health problems for residents. Although the air pollution levels in Estonia are mostly below the limits, they may still cause more sensitive individuals to experience annoyance and health problems. Many people, especially in Ida-Virumaa county, are concerned about the effects of air pollution on their health. However, as most residents in Tallinn and Tartu are exposed to road traffic noise above the limits, it is important to pay more attention to reducing annoyance caused by road traffic in the cities. With increasing awareness of environmental health effects, more and more people in Estonia consider environmental pollution to be a likely cause of health problems.

The perceived risk of air and noise pollution affects both mental and physical health. Well-planned communication is therefore necessary to avoid annoyance and mental health problems, recognising air and noise pollution as health risks without causing unreasonable stress or fear about possible health damage. People's trust in environmental experts and the understanding that environmental health risks are discussed honestly and openly in society help to reduce perceived risks and fears (Orru et al. 2015).

Reducing effects on mental health starts by improving air quality and reducing noise levels. The first option would be to increase the number of vehicles that pollute less. For example, cars that comply with the EURO 6 emission standard have lower emissions than older cars. It is also beneficial to restrict the use of studded tyres in cities, because they produce significantly more noise and dust than studless winter tyres. In Stockholm, for example, studded tyres are prohibited on certain streets, and in Oslo you need to buy a special permit. Reducing speed limits is also beneficial, because traffic

**Well-planned communication about the health risks caused by air pollution and noise is necessary to avoid annoyance and mental health problems.**

noise is significantly lower at reduced speeds. Air pollution from domestic heating can be reduced by limiting emissions with better heating methods, higher-quality fuel, less polluting furnaces and technologies, or connecting to district heating in cities. Industries need to have more effective control over sudden emissions that occur when starting up machinery or in the event of malfunctions, when significantly more pollutants are released into the air than usual.

Promoting physically active, pollution-free modes of transport, such as cycling, could also help reduce mental health problems. More frequent use of physically active forms of getting around not only decreases the levels of both air and noise pollution in cities but also increases the level of happiness hormones in the body. Due to physical activity, a person sitting on a bicycle is happier and less stressed than a person sitting in a car.

## ODOURS AND ELECTRONIC NOSES IN MUUGA HARBOUR

For a long time, the residents of Muuga have been complaining about the unpleasant odours caused by the loading of oil products onto the ships in Muuga Harbour. In addition to the unpleasant smell, several hydrocarbons (e.g. benzene) are potentially health-damaging substances, which in high levels can damage our nervous system and haematopoiesis and can cause cancer. The greatest threat to human health is when the wind carries the fumes from the port towards the surrounding residential areas. To identify such situations, an air quality monitoring system with electronic noses relying on sensors for odours and wind was installed in 2016. When the wind blows from certain directions and the electronic noses detect high levels of aromatic compounds and other chemical substances, the system alarms the harbour and loading has to be stopped. Although the situation has improved over the years, 121 complaints were still submitted to the Environmental Board in 2020 about unpleasant odours in the area. The Estonian Environmental Research Centre's analysis of the complaints and data from the electronic noses revealed that only seven of these complaints could be directly connected to activities in the harbour. Since there are also several other industrial companies in the area, the odour problem is broader and requires a more systematic approach to quickly resolve this unpleasant situation for the residents.

**SOURCE:** *Harju Elu*, 2 December 2016

## WHEN NOISE MAKES LIFE IMPOSSIBLE

In some cases, annoyance due to noise pollution may be unbearable. One such example is the racing track in Audru, where local residents turned to the chancellor of justice in 2018 to find a solution to the problem. Even though there are noise barriers and walls (which are not continuous) and the noise limits are not exceeded, the surrounding residents experience high levels of annoyance. The developer has applied for a building permit to construct higher barriers. An environmental permit is also required, as the developer wants to build the barriers from waste. The planned construction will take years, and the problem will not be resolved any time soon.

In the village of Purila, the residents have been troubled by the local pellet plant for many years. The noise from the plant has been within limits during official assessments, but according to locals, it is much higher during wood crushing. Once again, the locals have appealed to the chancellor of justice, who has pointed out shortcomings in the planning of the plant and insufficient involvement of residents. The residents are disturbed the most by irregular noise, or noise that comes and goes. For example, a hydraulic breaker in the quarry might go 'thunk-thunk-thunk', then there is a bit of silence, and then it goes 'thunk-thunk-thunk' again.

In cities, air source heat pumps, ventilation units and other devices often cause noise annoyance. In many cases, shopping centres have been required to service or replace their ventilation units or install additional soundproofing to avoid exceeding the limits for night noise levels.

**WARMESTON PELLET PLANT IN PURILA**

**SOURCE:** photograph by Siim Solman, *Raplamaa Sõnumid*, 11 October 2017

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# 5.3
# Spatial planning and mental well-being: How to reduce social isolation and loneliness in urban environments

**HELEN SOOVÄLI-SEPPING, ELEN-MAARJA TRELL AND SIRLE SALMISTU**

## KEY MESSAGE

**Well-planned urban space can have a significant effect on mental well-being. Social cohesion and isolation are essentially geographic concepts expressing proximity and distance, which are related to spatial interaction patterns in addition to social interaction patterns. People-centred spatial planning alleviates social isolation. Mobility, green spaces and accessible meeting places facilitate social cohesion.**

## INTRODUCTION

The authors of the previous Estonian Human Development Report consistently pointed out that the growth of Estonia's largest cities, especially Tallinn, in terms of building stock and infrastructure often comes at the expense of public space and greenery, which are important for people's mental and physical well-being. Creating people-centred street spaces, parks and squares should be the most important starting point for shaping the urban space. The links between spatial planning, mobility and architecture and people's mental well-being deserve an in-depth explanation. So far, little attention has been paid to the interdependence of space and health in Estonia. This article looks at examples of spatial planning measures introduced in the Netherlands to combat loneliness.

The article focuses on older adults as the most fragile social group. Forecasts show that by 2050, every sixth person in the world will be over 65 years old. According to Statistics Estonia's data, as of 2021, almost a fifth of the Estonian population is over 65 years old, and this figure will rise to 28% by 2050 (Statistics Estonia 2019; 2022). At the same time, older adults are not the only ones at risk of social isolation. In individualistic societies, including Estonia, social isolation occurs in all age groups.

The results of the European Social Survey show that a fifth of Europeans experienced social isolation even before the onset of the COVID-19 crisis (d'Hombres et al. 2021). The problem is particularly prevalent in Eastern Europe, including Estonia. In the Netherlands, Denmark and Sweden, about 8% of the

population experience social isolation, while in Eastern European countries, such as Estonia, Lithuania and Poland, 35% of people experience social isolation. This is significantly more than the European average. Given the gravity of this public health issue, in 2018 the UK appointed the world's first minister of loneliness, tasked with developing measures to help raise awareness of loneliness and enable society to tackle it. As a result of the COVID-19 crisis, Japan has appointed a minister dealing with social isolation and related mental health problems. Creating a similar ministerial position has also been discussed in Australia (Purcell 2021).

There is a clear link between social isolation and spatial isolation. Physical distance from regular interaction opportunities, as well as working remotely, are factors that can cause or aggravate social isolation. Furthermore, spatial deficiencies in urban areas and rural centres can limit people's mobility, access to meeting places and interaction with others. The concept of social isolation refers to a situation in which a person rarely comes into contact with others (Fakoya et al. 2020). It is measured in terms of the size of the social network or the number of interactions in a day, week or month. Limited interaction and contact with other people may be the result of a person's limited social network, limited mobility, physical distance or limited access to meeting places, among other factors. Research rarely discusses the link between spatial planning and design of the urban space and feelings of loneliness, because a direct link is difficult to establish. However, the COVID-19 pandemic unequivocally highlighted the importance of green areas in stimulating social cohesion. People all over the world crowded into city parks and green spaces outside the cities because the only way to meet friends, relatives or colleagues and spend time with loved ones outside the home was to meet outdoors. There is also ample research pointing to deficiencies in the built environment as an indirect cause of social isolation (Carmichael 2019).

**A lack of interaction and contact with other people may be due to a person's limited social network, limited mobility, physical distance or limited access to meeting places, among other factors.**

## The spatial dimension of social isolation and loneliness

Researchers have established a link between objective social isolation and feelings of loneliness. Loneliness is considered an epidemic of the 21st century (Heinrich and Gullone 2006; Sisask and Roosipuu 2019). It is an emotional experience: 'loneliness is a continual subjective feeling that something important is missing in life' (Sisask and Roosipuu 2019). Some researchers (Hawthorne 2006) classify loneliness as a form of social isolation (loneliness is subjective social isolation), while others (Heinrich and Gullone 2006) argue that loneliness is an emotional response to social isolation.

Loneliness is a health risk, as many links have been found between loneliness and general mortality rate and health status, as well as more specific medical conditions in older adults, such as frailty, cardiovascular diseases, depression and decreased cognitive ability (Sisask and Roosipuu 2019). In Europe, 6% of the population report that they do not have anyone close to them whom they could ask for help in case of need (European Commission 2019). According to the Office for National Statistics, in the

**Social cohesion and isolation are essentially geographical concepts that describe how people interact – either face to face or at a distance.**

United Kingdom, young people aged 16 to 24 feel more lonely than older adults aged between 65 and 74. A report by the UK Loneliness Commission found that around 14% of the population often or always feel lonely. Loneliness and related (health) problems are very costly to the state. In the United Kingdom, for example, the annual impact of loneliness on the national economy is estimated to be 36.5 billion euros (Kodama 2021).

Social cohesion and isolation are essentially geographical concepts that describe how people interact – either face to face or at a distance. Therefore, in addition to interpersonal patterns of interaction, these concepts also relate to spatial interaction patterns. Cohesion can be analysed by measuring distance or proximity – for example, the distance between a person and their family and friends whom they regularly meet face to face. It is also possible to analyse it by measuring the distance between, for example, the daily living environment and places of interaction (e.g. public spaces and green areas). Cohesion can also be described in terms of accessibility – for example, in terms of the opportunities that (urban) space offers a person to be in contact with members of the local community. Accessibility refers to a person's ability and resources to reach certain places (of interaction), combined with the characteristics of these meeting places, including the existing (physical) infrastructure (e.g. accessibility with a stroller or walking frame).

## Spatial planning has a 'toolbox' to reduce social isolation

Urban planning prioritises safeguarding the availability of services and places necessary for the well-being of all members of society. This includes facilitating opportunities for all social groups to meet other people (Bhugra et al. 2019; Litman 2021). A well-planned urban space can help prevent and alleviate feelings of loneliness by providing varied, health-promoting spaces, including places to be alone, where it is possible to be in contact with surrounding urban life without necessarily having to actively participate in it. The urban space can be an environment that brings balance to life by offering diverse opportunities for both solitude and social interaction. The strategic placing of benches in streets, parks and other public spaces can, for example, help alleviate and prevent social isolation and loneliness for older adults by creating a supportive environment (Gilroy 2021; Steels 2015; van Hoof et al. 2018). In Estonia, a common destination designed with older adults in mind is sports- and playgrounds: every year more and more fitness equipment specially designed for older users are provided. Such places are also expected to facilitate intergenerational interaction.

The importance of spatial planning in stimulating social cohesion is well illustrated by Jane Jacobs' (1961) study on New York City, which is widely known

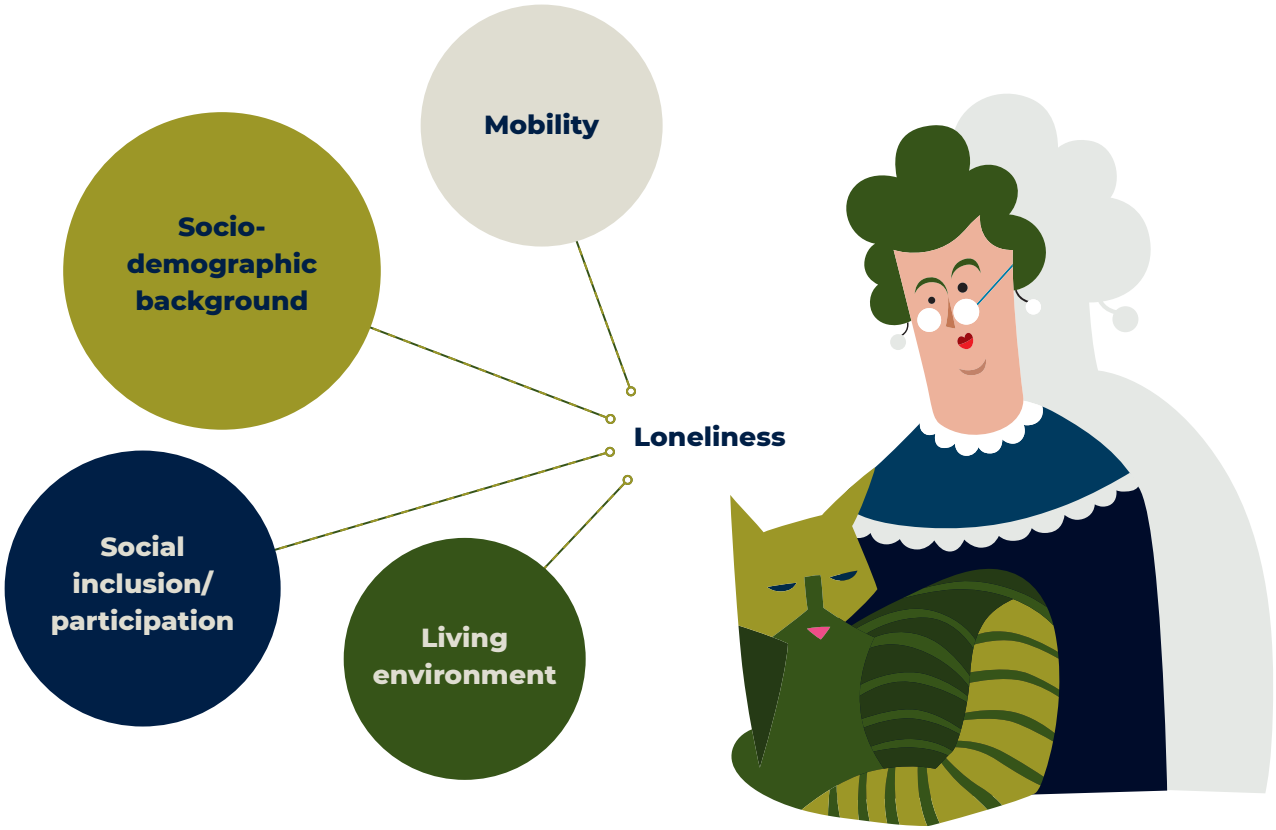
**Urban space can be a balancing environment that offers diverse opportunities for both solitude and social interaction.**

and used among urban planners. Jacobs found that well-planned footpaths and green spaces help facilitate neighbourhood interaction and reduce crime, thereby increasing the sense of security for both local residents and visitors. Direct face-to-face interaction and meaningful communal activities are indispensable for creating meaningful relationships and social cohesion (Smith 2015). Meaningful relationships, in turn, reduce loneliness. Direct interaction requires that people have opportunities to meet and places available that create such opportunities. Accessible urban space ensures equal opportunities for mobility and enables even the members of more fragile groups to move independently (see Estonian Human Development Report 2019/2020).

In Estonia, good examples of spaces enhancing social cohesion include community gardens (city gardens) and the reconstruction of city squares as part of the Good Public Space project, which has seen the central squares and main streets of several cities and small towns renewed through architectural competitions. These public space reconstruction projects have focused on improving the quality of the urban space and thereby increasing the towns' and cities' competitiveness – in other words, attracting tourists and creating a more valuable and functional public space for locals.

**For communities to embrace and actively make use of the urban space, it is crucial to involve local people in the spatial design process.**

**Figure 5.3.1.** Factors affecting feelings of loneliness among older adults




**SOURCE:** figure adapted by authors (based on Kemperman et al. 2019)

At the same time, several of these public space revitalisation projects have also aimed to improve the opportunities for social cohesion, reviving the city centres by providing citizens reasons to meet and spend time in the urban space. The central squares of Kuressaare and Kärdla are good examples. However, only modest awareness of the importance of social cohesion has been shown when designing these city squares; the primary focus has been on architectural integrity, attractive design solutions and boosting the economic environment. For communities to embrace and actively make use of urban space, it is crucial to involve local people in the spatial design process. Throughout this article, we will zoom in on good examples of conscious efforts to make the urban environment supportive of social interaction.

## Well-planned urban environment is a cornerstone of reducing loneliness

Spatial planning in the Netherlands has a long history and significant achievements in dealing with today's environmental and social problems, including social isolation. In this paragraph we explore some of the planning solutions used to combat social isolation and loneliness in the Netherlands. Floris Alkemade, who worked as the Chief Government Architect of the Netherlands between 2015 and 2021, has declared: 'I am convinced that with better design and planning of both our housing and the general living environment, it is possible to reduce loneliness. As the Chief Government Architect of the Netherlands, I call on architects and planners to actively address this challenge.'[1] The nationwide competition Who Cares, launched by Alkemade, focused on creating and designing modern and innovative solutions to problems related to social welfare and housing. The competition prioritised solutions that were in harmony with not

### HEALTHY NEIGHBOURHOODS *(GEZONDE BUURTEN)*

The Healthy Neighbourhoods project created places in various Dutch cities where social interaction, play and nature intertwine to increase the social cohesion of neighbourhoods. From concept design to realisation, each individual project is managed and implemented by the residents working with the local municipality. Experts and volunteers from Janje Beton (a national charity that creates playgrounds for everyone), the Institute for Nature Education (ivn.nl) and the JOGG initiative (jogg.nl) support local residents and municipalities in creating healthy neighbourhoods. The project is financed by the Dutch Ministry of Health, Welfare and Sports. Between 2018 and 2021, a total of 12 healthy neighbourhoods were created in eight municipalities.

1 NPO Radio 1 podcast, 31 July 2020.

only the local identity and community, but also with the spatial structure and possibilities of the neighbourhood.

The Dutch government has paid attention to the quality of the living environment for years, for example, setting up the national programme and funding scheme Together against Loneliness (Eén tegen eenzaamheid), which, among other things, aims to motivate municipalities to address social isolation. The main purpose of the programme is to solve loneliness-related problems among older adults. A national campaign was organised between 2018 and 2021 to raise awareness of loneliness as a serious public health problem. Every year, an interim report on the programme's effectiveness, achievements and challenges is submitted to the Dutch government. The 2021 impact assessment report stated that loneliness among the Dutch was on the rise due to the COVID-19 crisis (Nivel 2021). Compared to 2016, loneliness has increased by 1 percentage point among older adults (from 55% to 56%) and by 4 percentage points among adults (from 43% to 47%). As the programme focused on older adults, the increase in loneliness between 2016 and 2020 was more noticeable among young people aged 18 to 34 (Dutch Parliament 2021). The national programme has been extended until 2023. The text boxes and photographs in Figures 5.3.2–5.3.4 show examples of specific spatial planning measures and projects implemented to combat social isolation and loneliness in the Netherlands.

In recent years, the planners of the municipality of Groningen have implemented spatial interventions in public space in order to reduce social isolation. In 2021, outdoor chess tables were installed in squares and parks (Figure 5.3.3). Anyone can learn to play chess, regardless of income, age or origin. It is consid-

### TOGETHER AGAINST LONELINESS (*EÉN TEGEN EENZAAMHEID*)

At the end of 2022, a small pavilion called Michi-Noeki was built in the Oosterparkwijk neighbourhood of Groningen (Figure 5.3.2). It is a place where people can stop and rest, drink coffee, tea or water, talk to each other, meet new people, use the toilet, and get information about what is going on in the area. The pavilion is built at the hub of the area, a place where a grocery store, a church, a convenience store, a flower shop and a fast food stand are located. Michi-Noeki was designed as a place to create opportunities for locals for casual meetings, conversations and making connections between different individuals and social groups living in the neighbourhood. Local residents can also participate as volunteers in initiating and organising activities in Michi-Noeki. The name and idea for Michi-Noeki were inspired by the traditional Japanese concept of a roadside station for travellers and merchants. Historically, Japanese *michi no eki* were places along the main trade routes where weary travellers could rest, eat, feed their horses and spend the night. The concept of a roadside station has survived to this day in Japan. Many *michi no eki* in Japan provide activities for the older residents of the surrounding area, who volunteer to serve food there. Groningen's Michi-Noeki was one of the winning entries in the 2018 Who Cares competition, and a large part of the project's funding comes from winning this competition.

**Figure 5.3.2.** The area where Groningen's first Michi-Noeki will be built


**SOURCE:** photographs by Elen-Maarja Trell, 2022

ered an activity that can bring younger and older generations together.

In 2020, the municipality of Groningen started a project to install 20 'chat benches' in the urban space in order to raise awareness of loneliness-related problems (Figure 5.3.4). The benches are decorated with images and poems, and signs next to them invite people to sit and talk to each other. With the benches, the city government wants to draw attention to the issue of loneliness and reduce the stigma associated with it.

**Figure 5.3.3.** Outdoor chessboard in Groningen's Noorderplantsoen Park

**SOURCE:** photograph by Elen-Maarja Trell, 2022

**Figurezz 5.3.4.** One of the first chat benches in Groningen with a poem about loneliness, 'Sometimes our words wander in no man's land'


**SOURCE:** Beijumnieuws, 6 June 2022

## Supporting mental health in old age requires an accessible urban space

Age-friendly communities are characterised by accessibility in terms of both the physical and social environment. According to the definition of the World Health Organization (WHO), an age-friendly city is a living environment where the physical and social environment and services support and enable active (healthy) ageing (WHO 2007). The concept of age-friendly communities is a holistic approach to physical space, the social environment, public services and other areas of life. Although the WHO initiative focuses on older adults (generally defined as those over 65 years of age), the concept actually covers the entire human life course. The WHO's definition of age-friendly communities extends not only to cities but also to neighbourhoods, city blocks and village centres (WHO 2017a). Older adults are a vulnerable social group for whom social isolation and loneliness are critical issues that affect mental health and quality of life. The WHO points out that more than 20% of people over 60 suffer from mental or neurological disorders, the most common of which are dementia and depression (WHO 2017b). This topic requires special attention because Estonia has Europe's highest rates of depression among middle-aged and older adults (see Abuladze and Sakkeus in Chapter 2; Abuladze et al. 2019, p. 58). Depression can be caused by a decrease in well-being as a result of loneliness (see Kalmus et al. in Chapter 4; Tiwari 2013).

**The concept of age-friendly communities is a holistic approach to physical space, the social environment, public services and other areas of life.**

Loneliness among older adults in Estonia is associated with, for example, their relatively poor economic situation, poor health and self-reported health, depression and suicidal thoughts, and the absence of a social network (Sisask and Roosipuu 2019). Researchers also emphasise that moderate physical activity can significantly reduce feelings of loneliness. The SHARE survey (Survey of Health, Ageing and Retirement in Europe) shows that, based on the body mass index, more than half (67.1%) of the Estonian population aged 50 and over are overweight or obese. This indicates low physical activity, an unhealthy diet and/or poor health not allowing for enough physical activity. Promoting physical activity improves life expectancy. Even small amounts of moderate or intense exercise reduce mortality among people over 60 by nearly 22% (Kunder et al. 2016). Therefore, (urban) spaces that promote physical activity and support social relationships can be indispensable, especially for older adults, as they promote both mental well-being and physical health.

A qualitative study by Kajamäe (2019) identifies older adults' physical-activity-related concerns and the features they like in Tallinn's urban space. According to the respondents, the main factor affecting their mobility is the condition of footpaths. In winter, mobility is hindered by snow and ice that is not cleared from the footpaths regularly. Also, due to Estonia's changeable weather conditions, unremoved snow can melt in the sun during the day and freeze again at night, turning footpaths into icy obstacle courses for older adults. They fear slipping and falling, which could result in injuries that could take months to recover from. After staying home for a long period, older adults face the risk that they will not be able to restore their previous level of mobility when they recover and might end up confined in their homes with no physical activity.

**Urban (and other) spaces that promote physical activity and support social relationships can be indispensable, especially for older adults, as they promote both mental well-being and physical health.**

*'I don't know … they say you should walk and you need to move. And it's true. I was sick recently, didn't go out at all, and soon stopped feeling like I wanted to go anywhere or do anything at all. I just wanted to lie in bed. But when you finally get that rhythm back, you feel so much better. You have to go outside.'*

Older adults are also frustrated by drivers who splash pedestrians on pavements in rainy weather. This can be a reason why they do not choose walking in the city as a leisure-time physical activity. Another obstacle to physical activity may be a shortage of outdoor seats, their poor design or their complete absence in the urban space. For example, the benches installed at Tallinn bus stops are not user-friendly:

*'The benches at the bus stops are bizarre; they're very short and cold. Bus shelters should obviously have wooden benches running wall to wall.'*

The respondents tended to point to various green spaces as their favourite places in the city. They described these as places to meet and spend time. According to older adults, increasing the

number of green areas and regularly maintaining them would help make the urban environment more human-friendly.

When a vision document was drafted for Tartu as an age-friendly city, a survey was conducted to identify older adults' expectations regarding urban space, services and social inclusion and to map any bottlenecks requiring attention. The greatest developmental issues identified were older adults' lack of involvement in community life and the social isolation of older adults living alone. The survey also found that there are not enough attractive community hubs for older adults, and the ones that are there do not meet their needs. Another concern for older adults is their lack of digital competence and their exclusion from the information society. Limited physical accessibility, including access to and from home, a shortage of resting places in the urban space, and a lack of quality in public spaces were identified as the main hindrances to older adults being able to cope independently in everyday life and find social inclusion.

Although loneliness is not exclusively an old-age-related problem, the risk of social isolation, loneliness or both can cause life changes to pile up. Studies show that exercise and walking support the preservation of cognitive functions and that a person's motivation to get out of the house is, in turn, increased by the presence of attractive destinations in the immediate vicinity. This supports the physical activity and functioning of older adults and reduces their risk of social isolation.

## SUMMARY

Older adults' ability to cope in the urban space is an indicator for the entire society of how accessible the living environment is and how the city's residents are doing in terms of social cohesion. As the number of older adults increases, there is a greater need for an age-friendly living environment to enable active and independent ageing. Independent mobility (e.g. on foot, by bicycle or by public transport) is considered a critical factor in active ageing.

Barriers related to mobility indicate a possible risk of social isolation and thus also risks related to mental well-being. Traditionally, activities and services related to older adults and healthy ageing are seen as part of healthcare or social work and so are handled by related institutions. However, the 'tools' of urban planning and urban design can directly improve the quality of life for older adults and thus enhance mental health.

Improving the conditions on footpaths, especially in winter, will give older adults more confidence to move outside throughout the year. Creating roads that are safe and stimulate active mobility should be a key factor in any strategy for an age-friendly city. Streets and buildings without barriers or obstacles to accessibility (e.g. low kerb stones and ramps, and handrails on stairs) facilitate independent mobility (including

vigorous physical activity) and socialisation for older adults, young people and people with special needs. In addition to obstacle-free streets, other factors, such as seating and public toilets in the urban space or readjusting the cycle times for traffic lights to allow more time for pedestrians, also help make cities friendlier. The Dutch examples encourage paying attention to the immediate neighbourhood when addressing social isolation, creating healthy neighbourhoods in cooperation with local residents and designing specific meeting places where residents have a reason to stop and perhaps have a chance encounter with their neighbours.

The methods for improving the quality of urban space examined in this article are just some of the many ways to get people to spend more time in the urban space, alleviating social isolation. Such improvements in spatial quality, including the Dutch chat benches or outdoor chessboards, are important not only for older adults but also for other city dwellers, including children and young people, and parents with strollers.

**Older adults' ability to cope in the urban space is an indicator for the entire society of how accessible the living environment is and how the city's residents are doing in terms of social cohesion.**

A well-functioning network of bicycle paths and small features such as dropped kerbs at crossings are examples of urban design techniques that can increase accessibility (Litman 2021).

According to research, Estonia suffers from a very high level of motorisation and a lack of social cohesion, which points to shortcomings in the planning of our living environment, among other things. An urban space that facilitates independence and creating meaningful social contacts is vital to supporting mental well-being. ●

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# Future scenarios


**PHOTO:** Aron Urb

# Future scenarios

## Estonia's mental well-being in 2040

**KRISTI GRIŠAKOV AND MERIKE SISASK**

### KEY MESSAGES

1. **Crises that are inevitable in a globally networked society constantly test people's mental well-being.**

   Crises such as climate change, the threat of war, global pandemics and migration are a major threat to human development. They raise people's stress levels, and coping requires people and ecosystems to be more resilient, in terms of both individual action and collective action in communities. A key factor in socioeconomic development is a mentally healthy population in an everyday living environment that supports well-being, backed by a value system of care – for each other and for oneself.

2. **The need and demand for mental health care and support will increase as limited resources require smart solutions.**

   Several factors cause this increasing demand. People's awareness of mental health determinants is increasing substantially while stigmatising attitudes towards mental health problems are subsiding. To meet these needs and demands, the structure of mental health care and support resources must change so as to reduce the pressure on specialist care services (psychiatrists, psychologists) and improve accessibility. Therefore, early recognition of and greater attention to preventing mental health problems are necessary. Self-care (mental health hygiene and mental health first aid), community care and services are increasingly important. While preventive digital solutions and a self-care-supporting wellness industry introduce a multitude of new options, these may not always be evidence-based or accessible to everyone in society.

## A THOUGHT EXERCISE: THE WORLD 20 YEARS AGO

- Estonia's first foundational document on mental health policy has been completed.
- According to the World Health Organization (WHO), Estonia is among the countries with the highest risk of suicide.
- The most popular phone model is the Nokia 6610. It will be another five years before the first iPhone is introduced to the public.
- Estonia issues its first electronic identity cards.
- The Eurovision Song Contest is held in Tallinn.
- The euro comes into cash circulation.
- In 2004, Estonia joins the EU and NATO.
- The first Estonian freestyle skiing world champion, Kelly Sildaru, is born.

## INTRODUCTION

The previous chapters of this report describe the changes in the mental health and well-being of Estonians over the past couple of decades – in terms of general life satisfaction, subjective well-being and the prevalence of mental health problems – and how these have been influenced by socio-economic development, changes in the psychosocial environment and the living environment, and people's lifestyle choices. But what challenges do the mental health and well-being of Estonians face over the next couple of decades in terms of human development? This article describes the Estonian population's prospects regarding mental health and well-being, based on global, regional and local trends and policies, and outlines four future scenarios based on these factors.

The future trends and scenarios in this article describe different possible realities, providing a shared platform for making sense of the challenges lying ahead. With the help of these scenarios, we invite the reader to think about the kind of future world we wish to inhabit and the kinds of future we seek to avoid. How can we adapt to both global developments and future challenges within Estonia? The article consists of three parts. First, we provide an overview of the methodology and principles of scenario planning. Next, we describe the factors affecting the mental health and well-being of Estonian people, which we group into eight main trends. We conclude the article with four future scenarios outlining the possible development of the field of mental health in the coming decades.

# SCENARIO PLANNING

Scenario planning is one of the methods used in futures thinking. Its purpose is to understand the possible impact of changes and decisions taking place in the present on the formation of future worlds. Scenarios are used as a tool when preparations and decisions must be made despite uncertainty. Scenario-building methods vary in terms of technical complexity, including big data analysis and models that produce highly complex scenarios (Bishop et al. 2007). The scenarios outlined here are based on the intuitive logics method, which uses existing predictions and data to create stories about the future that illustrate the consequences of various developments (Ramirez and Wilkinson 2016). The scenarios are essentially tools to support futures thinking that illustrate possible changes taking place in Estonia and around the world, along with their consequences. As stories about the future, they help us understand the choices and decisions that lead to different futures[1] and to find a shared frame of reference for discussing the future.

Mental health and well-being is a special topic in scenario planning, as crises and unexpected events have immediate consequences on people's subjective well-being and mental health, which can turn into long-term effects. The role and impact of various trends and factors in shaping the future are difficult to predict. Sectoral changes are measured quantitatively, which does not provide a cohesive picture of the changes in the field of mental health as a whole. Changes in mental health are related to changes in the world around us and our ability to adapt to these changes. The factors that affect the way our communication environment develops include climate change, international corporations and policies, and new technologies and services. It is often difficult to estimate which of these factors will have the most weight or will open up new opportunities to maintain and protect mental health. For this reason, the factors shaping our future are described on two levels – as forecasts and as weak signals. Sectoral forecasts (e.g. population forecasts) are prepared by extrapolating from existing (past and present) trends. Such forecasts give us an idea of what the future might look like if the status quo continues or an idea of how current sectoral trends might unexpectedly interact to shape the future world. However, they cannot predict factors that might change the direction of existing trends (Thomas 1994).

Therefore, the concept of weak signals has been adopted in future studies, which means that in addition to forecasts, smaller changes that have the potential to shift future trajectories are also considered. Weak signals include various emerging technologies that caught on well after they were created. For example, mini-screens were first invented in the 1930s but only recently found their way into everyone's pockets in the form of smartphones. Weak signals can be reflected in the values of the young generation: with their current communication and lifestyle preferences, young people will direct the behavioural patterns of the future. Picking up weak signals is important because, although there is no evidence to confirm their wider impact, they help us discuss future changes whose real impact may appear only years later (e.g. the long-term impact of the COVID-19 crisis). The future scenarios in this article rely on both types of factors – the more probable predictions and weak signals.

We prepared the scenarios in three stages:

**(1)** We aggregated sectoral trends,[2] identified the most likely or influential of these, and used future scenarios to illustrate their consequences. Sectoral trends were determined using forecasts, reports and scenarios from Estonia and elsewhere. While we included some global scenarios and forecasts (e.g. HDR 2022; OECD 2021a; WHO 2022c), most of the developments described in the chapter are based on the Western (European, Northern European, Estonian) context and values (Foresight Centre 2020, 2022; Demos Helsinki 2016; Estonia 2035; OECD 2021b, 2022; OECD/EU 2018; Ministry of Social Affairs 2020a, 2020b). When defining significant changes, we excluded the possibility of extreme shifts, such as the disintegration of the European Union (EU), and assumed the continued existence of an independent Estonian state in 2040.

**(2)** As a second point of departure, we used the trends in psychosocial and living environments over the past 20 to 30 years, which are discussed in the previous chapters, and the possible future prospects suggested by the authors of the articles. Co-creation workshops were held with chapter editors and sectoral experts to identify the most likely and influential factors. In the workshops, we selected the most important trends affecting the future, defined the axes of the scenarios, and drafted the points to be covered in the scenarios, focusing on psychosocial and living environments and providers of mental health support and services in each possible future world.

**3)** Based on what was discussed in the workshops, we synthesised eight main trends that will have a significant impact on (re)shaping the field of mental health in the coming decades. We then refined the descriptions of the trends with the greatest impact and rewrote the sketched scenario into future stories with a clearly defined structure.

We chose the time frame (the year 2040) based on three main factors:

**(1)** The mental health field is rapidly changing due to global challenges, such as the threat of war and climate change, and technological innovations. A medium-term view of the future is enough to describe important changes.

**(2)** Within the next couple of decades, a generational shift will happen. By 2040, today's children will be young people starting an independent life, holding slightly different values (as every new generation should).

**(3)** People with serious mental health disorders have a life expectancy that is, on average, 10 to 20 years shorter (WHO 2022c). This adds another dimension to the future scenarios outlined in this report – unlived lives, or people who will never live to experience this future.

1 UNESCO defines 'futures literacy' as the ability to understand and imagine the role our actions play in the formation of different futures.

2 Mapping sectoral trends requires aggregating them into at least six categories: social, economic, political, environmental, technological and value trends. Both local trends in Estonia and international trends in Europe and the world must be taken into account.

# MAIN TRENDS

## 1. Living in an era of crises inevitably places a great responsibility on society to mitigate their impact and keep people mentally healthy and capable of functioning despite the high overall stress levels

This era of crises – such as the climate crisis, pandemics and military conflicts – is characterised by uncertainty, which introduces a great deal of volatility into people's lives (HDR 2022; WHO 2022c). In 2021, 84 million people were forced to flee and relocate to escape global conflicts, and 274 million people needed humanitarian aid (WHO 2022c). According to UN data, approximately 7.8 million people had fled from the war in Ukraine as of December 2022. Approximately 64,000 of them, according to the Social Insurance Board, arrived permanently in Estonia.

In addition to migration flows from unstable nearby regions, there will be an increase in forced migration due to the climate crisis (Estonia 2035; WHO 2022c, 2022a). In the European Union, 81% of people (63% in Estonia) consider climate change the biggest challenge facing humanity in the 21st century (EIB 2022). Climate change causes both extreme events (storms, floods, heat waves, etc.) and gradual events (an increase in average temperatures, loss of ecosystem diversity, etc.), both of which are impactful (WHO 2022c, 2022a). The living environments of people and animals are changing, and water and food reserves are shrinking. People are losing their homes or seeing their living areas transform beyond recognition. Communities are being torn apart, social bonds are disintegrating, and loneliness, instability and violence are on the rise.

Crises have a multifaceted effect on mental health, the direct effect being the increase in mental health problems. During the COVID-19 pandemic, anxiety and depression increased by more than 25% worldwide (OECD 2021b; WHO 2022c, 2022b). One in five people who have fled war conflicts suffers from mental health disorders such as depression, anxiety or PTSD (HDR 2022; WHO 2022c). During crises, funding may increase for certain priority areas, such as security, while being withdrawn from education (thus leading to health inequality) and mental health services. Especially during the first year of the COVID-19 crisis, mental health services were severely disrupted (WHO 2022c).

The indirect effect of crises is manifested through mental health determinants (environmental, social, economic), although simply being a silent witness to climate change can also be very stressful (WHO 2022c, 2022a). This report uses the example of climate concern to illustrate how a global concern that is taken seriously and shared among communities does not have to lead to apathy but can instead increase agency within communities.

The media and opinion-makers talk about a compound crisis and emphasise the need to constantly be on guard. In this stressful situation, the resilience of people and ecosystems becomes crucial (HDR 2022). The mindset and social values adapted to future trends must reject the previous rhetoric of a welfare society aimed at stability and continuous growth. Supporting and maintaining individual and social agency requires the state and the media to refrain from feeding into insecurity and instead provide support and a sense of security in a situation where individuals feel they lack control.

## 2. The quality of the living environment is increasingly recognised for its role in reducing health risks and supporting mental health and well-being

A safe, comprehensively planned and accessible living environment (artificial and natural environment, built environment) that responds to people's needs provides opportunities for maintaining health and experiencing mental well-being and happiness (Bonava 2022; Estonia 2035; WHO 2022c).

Estonians are slightly less concerned about environmental health effects than the average respondent in the European Union, but awareness is increasing. According to Eurobarometer, in 2005, 47% of Estonian residents believed that health damage from environmental pollution was highly likely or quite likely, but by 2010, this figure had risen to 51%, and by 2020 it had risen to 70%. People's environmental awareness, easily accessible information about environmental health risks (e.g. noise, radiation, indoor and outdoor air) and ways to reduce them, and attitudes and behaviours that support health and the living environment are among Estonia's top development priorities (Estonia 2035; Ministry of Social Affairs 2020a).

Thus far, developments in Estonia's living environment have been shaped by suburbanisation and multilocality, which facilitate individuals spreading their living arrangements among multiple dwellings and relying on car-based mobility (EHDR 2020; Kruuse et al. 2020). The built living environment in Estonia has not been designed with the deliberate aim of supporting (mental) health and well-being or promoting community interaction. The future urban environment, one that supports health and freedom of choice, should be based on new economic models and a culture of health behaviour that values mobility, healthy eating, low stress levels and fulfilling social relationships, thereby shaping a happier life (Demos Helsinki 2016).

The living environment helps shape healthy lifestyle choices by making some choice easier and others harder for people (Demos Helsinki 2016; Ministry of Social Affairs 2020a). For instance, access to different types of green and blue spaces has been proven to allow our minds to rest and recover (Bonava 2022; Tuhkanen et al. 2018). For some groups of residents, such as old and young people, urban green spaces are the main place of contact with the natural environment (EHDR 2020). At the same time, satisfaction with green spaces is a regional problem, especially in the urban context: areas richer in nature also tend to have lower population density and higher real estate prices, making them more accessible to people with better income and education. Therefore, the task of the future is to design a living environment that supports mental health and is accessible to everyone, both in urban and rural Estonia.

## 3. In the everyday psychosocial environments of a complex and changing society, people have a greater need for skills necessary to take individual or collective action

Developed societies are complex and changeable, and members of such societies are in danger of being isolated and feeling lonely. In Europe, an estimated 21% of the population (95 million people) are socially isolated, and 9% (40 million people) report feeling lonely (d'Hombres et al. 2021). Estonia has among the highest levels of social isolation – 35% of adults (approx.

37,000 people) meet loved ones no more than once a month. The corresponding rate is only 8% in the Netherlands, Denmark and Sweden. Isolation and loneliness are known to be associated with poor (mental) health, and social isolation experienced during the COVID-19 pandemic may have long-term consequences (WHO 2022c).

The more complex and changeable society becomes, the more important people's individual agency and responsibility in taking daily care of their mental health. When it comes to making health-related decisions, people are increasingly expected to exercise their autonomy through health-conscious and sustainable individual action (Foresight Centre 2020; Demos Helsinki 2016; Estonia 2035; WHO 2022c). However, when faced with vast amounts of information and having freedom of choice, this may not always be easy. People need support in their decisions, but the emphasis should be on 'doing with' and not 'doing to', enabling people to take control of their lives and supporting them to do more for themselves (Better Mental Health For All 2016).

The rising need to improve people's individual agency is combined with the need to further collective agency, which is based on community interaction and network-building (Estonia 2035). Even casual conversations with neighbours, not to mention meaningful joint activities, can have a long-term impact on well-being and increase one's sense of happiness (Bonava 2022). Daily psychosocial environments – homes, schools, workplaces – offer both risks and opportunities when it comes to mental health. By shaping these environments, it is possible to give everyone an equal opportunity to protect their mental well-being and prevent mental health problems, allowing them to function at their highest possible level of well-being (WHO 2022c).

Thus far, the values of the Estonian population have been marked by a lack of solidarity and tolerance, as well as a belief that everyone should independently find a way to cope with life and its difficulties. The last decade has seen positive change: especially among people under 30, there has been a shift from a market focus to new communalism, which values people's immediate surroundings, the environment and social relationships, promotes trust and tolerance, and makes it easier to spot those in need (Ainsaar and Strenze 2019).

## 4. The gender gap and social attitudes and perceptions of gender roles significantly impact mental health

In 2021, Estonia's Gender Inequality Index was 61.6 out of 100 (EU average 68.0); the aim is to reach 70.7 by 2035 (Estonia 2035). According to the Equality Competence Center, we are three generations away from gender equality if we continue at this pace. Estonia has a large gender gap in indicators related to average life expectancy and health. Eurostat data indicates that in 2021, Estonian men's average life expectancy was 8.9 years shorter than women's (EU average: 5.6 years shorter). According to 2020 data, Estonian men live 4.1 years less than women (EU average: 1.0 years less).

According to the European Institute for Gender Equality (EIGE), men have better self-rated health than women, although they indulge in significantly more health-damaging behaviours (e.g. smoking and alcohol abuse). Estonian men commit suicide four times more often than women (Värnik et al. 2021). Overall, the prevalence of mental health problems is higher among women. Depression and anxiety are more common

in women, while attention and behaviour disorders and drug use are more common in men (OECD 2021a; WHO 2022c). The previous chapters of this report show that 31% of adult women are at risk of depression (compared to 24% of men) and 25% are at risk of an anxiety disorder (compared to 15% of men). Moreover, among young people, there are almost twice as many depressed girls as boys.

Gender and the social image of gender roles are important in solving mental health problems and understanding help-seeking behaviour. Women demonstrate greater solidarity and are expected to be more self-sacrificing and caring of others (Ainsaar and Strenze 2019). In Estonia, women make up 60% of all family caregivers and as much as 80% of those inactive in the labour market due to caregiving duties (Estonia 2035). The share of women in the Estonian healthcare system is remarkably high, standing at 74% among doctors (Habicht et al. 2018), not to mention nurses and caregivers.

When it comes to work and employment opportunities and possibilities for reconciling work and family life, the appreciation of gender equality in Estonian society has generally improved (Ainsaar and Strenze 2019). Even amid ongoing social changes, Estonian families continue to be quite traditional in their division of gender roles. For example, women of working age have a greater burden during crises, which increases their stress levels (when working in a home office during the pandemic, they were also responsible for the children), while older women have a very heavy burden of caregiving, which adversely impacts their mental well-being. Men, on the other hand, are less likely to seek help for mental health problems. This is because of the gender stereotype of a strong, self-sufficient man and the idea that seeking help is a sign of weakness (Sagar-Ouriaghli et al. 2019).

## 5. The life course perspective makes it possible to assess and understand the mental health impact of experiences from different life stages and time periods

The average life expectancy of Estonian residents has increased. The future society of Estonia will therefore contain a greater percentage of old people. According to a forecast by Statistics Estonia, by 2040, every fourth person will be over 65, and by 2060, every third person will be. There has been no significant change in healthy life years since 2009. If the same trend continues, the future will see people live longer but with various health problems. An ageing society presents new challenges in ensuring people's well-being (Demos Helsinki 2016; Estonia 2035).

The life course perspective helps to explain inequalities in health. Some periods are more critical to mental health than others, and people who experience more vulnerability early in life are subject to the accumulation of risk factors during the rest of their life, which in turn magnifies health inequalities in later life (Ministry of Social Affairs 2020b; WHO 2022c). This means that the vicious cycle of poverty and inequality in society has a clear impact on the occurrence of mental health disorders. The formative years are also when most values are shaped, and changes in social values occur mainly with the changing of generations (Ainsaar and Strenze 2019). Stronger cohesion between generations could help reduce age discrimination, or ageism (Estonia 2035).

The life course approach combines the individual level with the generational. At the individual level, the foundation for mental health and well-being is laid in childhood and further

developed through the social capital and lifestyle choices accumulated throughout life. The prenatal, infant and toddler years set the tone for the life stages that follow, with adolescence as the next sensitive period that introduces both greater mental health vulnerability and better options for prevention. About half of mental health disorders develop in adolescence and three-quarters in early adulthood (Better Mental Health For All 2016; OECD/EU 2018; WHO 2022c). The critical phases in adulthood include the period of starting a family, pregnancy and post-pregnancy, reconciling family and work life, and transitioning to retirement (Better Mental Health For All 2016; WHO 2022c). In old age, physical illness and decline introduce specific age-related stress, which is combined with the cumulative effects from earlier life stages (WHO 2022c).

At the generational level, the era and conditions in which a person is born are decisive (e.g. children of the COVID era). In the case of Estonia, it is important to recognise how the social upheavals caused by the Soviet occupation have affected the well-being of people who are now over 65 years old and the extent to which their current choices help mitigate the effects of past negative events and enhance their sense of well-being. The people who are currently aged 45 or over are the older people of tomorrow, and their values and choices will determine what older people will be like in 2040. Most likely, today's stereotypical image of 'retired people' will no longer apply to them. They are certainly more educated and also more conscious of mental well-being, suggesting that age-related mental well-being will improve.

## 6. While people have more mental health problems, life satisfaction in Estonia is on the rise

Every eighth person in the world (13%, i.e. nearly 1 billion people) lives with a mental health problem; the most common ones are anxiety and depression (WHO 2022c). In 2016, one in six people in the European Union (17%, i.e. nearly 84 million people) and roughly the same share in Estonia (18%, i.e. nearly 240,000 people) had a mental health problem (OECD/EU 2018). The data of the Estonian Human Development Report also indicate that mental health problems are widespread among Estonia's population. Both the number of diagnosed cases and self-reported complaints are on the rise, with the latter indicating that one in four adults is at risk of depression and that one in five adults is at risk of generalised anxiety disorder. Continuing the disorder- and treatment-focused model will result in even more diagnosed mental health disorders in the future, as improved awareness and decreased stigma will encourage more and more people to turn to the healthcare system for help. The rate of self-reported complaints is also likely to increase, with people becoming better at recognising mental health problems and daring to admit to experiencing them.

Mental health is not an either/or state, with people being either mentally healthy or mentally ill. Although people with mental health problems often experience lower levels of well-being, this is not always the case (WHO 2022c). Even a person diagnosed with a mental disorder can live a fulfilling life and experience life satisfaction and subjective well-being if awareness in society and their living environment support them. Paradoxically, in tandem with

the increase in mental health problems, people's general life satisfaction in Estonia has improved – even at a faster pace than in other countries. The level Estonia has reached puts it among the countries with the highest Human Development Index (HDR 2022). Daily subsistence concerns brought on by economic hardship have eased, and in the future, people will seek to experience greater well-being in as many ways as possible, including achieving success through self-realisation, satisfying existential needs, and being mentally healthy.

## 7. Mental health interventions require restructuring as the need for them is high while resources are limited

The need for activities and services that support mental health is increasing. The unmet need for mental health treatment is nearly 70% in Estonia (due to financial reasons, waiting lists or lack of transport) – the highest in the EU (OECD 2021a; National Audit Office 2022). On average, the world's countries spend only 2% (in some welfare states, 10%) of their health budgets on mental health (WHO 2022c). With the current level of services, by 2035, the expenses of the Estonian Health Insurance Fund will grow almost 24% faster than the revenues (Estonia 2035).

Specialised or psychiatric and psychological treatment is hard to access in Estonia (OECD 2021a; National Audit Office 2022). Despite the increase in the number of those in training, there is a shortage of all specialists. There is a severe shortage of nurses per doctor (1.8 nurses per doctor in Estonia compared to 4.4 in Finland) (OECD 2021b), and few nurses practise independently, including mental health nurses (Foresight Centre 2020). Nurses as a resource should be managed much more effectively in the future.

Responding to the needs and demand requires changes to the structure of mental health interventions, which should ensure the optimal function of the pyramid of mental health services (see Randver et al. in Chapter 1). Reducing the pressure on specialist services requires developing local primary-level interventions, community services and support and improving self-care (mental health hygiene, mental health first aid) (Ministry of Social Affairs 2020b). Currently, most countries spend less than 20% of their mental health budgets on community services and even less on prevention and promotion (WHO 2022c). Yet comprehensive and effective prevention and networking across various fields could curb the need for clinical intervention (Foresight Centre 2020; National Audit Office 2022; Ministry of Social Affairs 2020b, 2020a; WHO 2022c).

In shaping the future of the field, it is necessary to increase resources at all levels simultaneously, because each level supports the next with its activities (Ministry of Social Affairs 2020b). Looking forward, it is also important to strive for more specific targeting of mental health services. Not every concern calls for psychiatric or psychological intervention, but the treatment of a serious mental health problem cannot rely on self-help alone.

In the future, decreased stigma and improved awareness will build up demand for mental health support services outside the publicly funded system. For example, the wellness industry, which also offers lifestyle services for supporting mental health, has

a global market size of $1.5 trillion and is projected to grow by 5–10% annually (McKinsey & Company 2022). In Estonia, folk and alternative medicine practices are popular. An overall better quality of life favours the rise of private sector services, but these may not be accessible to everyone; nor are they always evidence-based. Resorting extensively to unregulated and non-evidence-based treatment methods may increase subsequent treatment costs (Foresight Centre 2020).

## 8. Interventions supported by digital tools and health technologies and personalised medicine have great potential for improving both mental health treatment and prevention

The development of health-supporting digital solutions and health technologies has been progressive. The crisis triggered by the COVID-19 pandemic has accelerated the quest for innovative solutions to bottlenecks in the field of mental health (telemedicine, web portals, apps), with more and more attention paid to evaluating their (cost-)effectiveness (WHO 2022c). Estonia has stood out at the global level for its e-health solutions (Habicht et al. 2018; OECD/EU 2018). However, improving mental health care requires more effective integration of digital solutions into the overall healthcare system (OECD 2021a).

While there are many databases in Estonia containing health data collected by health service providers, these are often not standardised or properly structured, which makes a lot of data difficult to compare and link (OECD 2022). The problem in Estonia is not the lack of data but the difficulty in analysing it. The amount of data is set to increase in the future as the opportunities for using big data and health monitoring will rely more and more on apps, sensors and smart technology (Foresight Centre 2022; Demos Helsinki 2016).

Future decisions on treatment and prevention activities will allow service providers to rely on the person's genetic and health data for more personalised and cost-effective treatment, and data-based personal medicine solutions will be integrated into the healthcare system's daily processes (Foresight Centre 2022; Demos Helsinki 2016; Estonia 2035). A similar kind of personalisation will take place in pharmacotherapy, with combinations of psychotropic drugs and natural remedies developed for more specifically targeted medication therapy (Lake 2019).

Interest in artificial intelligence will continue to grow. Already, the use of machine learning methods enables the early recognition of mental health disorders such as depression and anxiety (OECD 2021a). In the future, decision support systems based on self-learning artificial intelligence will be able to give health recommendations to both the person and the healthcare staff (Foresight Centre 2020). The primary avenue for using artificial intelligence lies in implementing more effective background processes (sorting and preliminary analysis of health information), as well as describing treatment options to people (including self-diagnosis). Artificial intelligence and speech robots (avatar therapists) will assume a role in counselling activities, and traditional face-to-face therapy sessions will also continue to move online, becoming more accessible to, for example, people with mobility difficulties or phobias. In addition, there are experiments with VR (virtual reality) and

AR (augmented reality) technologies, which will make it possible to more effectively read people's facial expressions or use simulations in therapy (McKinsey & Company 2022). In the even more distant future, neuroimplants and brain-computer interfaces will enable non-invasive direct communication with various parts of the brain. Technologies such as these are crucial for patients with conditions that are resistant to medication therapy (e.g. depression and dementia).

The use and development of digital technologies for mental health comes with a set of risks and limitations. These can be related to the ethical and safety aspects of using digital tools, data protection and privacy, as well as accessibility and fairness (WHO 2022c). For example, due to the digital divide, reliance on these technologies may exclude many of the most vulnerable people, which makes improving digital competences especially important in the future (Estonia 2035; WHO 2022c). The more open society is about mental health, the more inclined people are to share their mental health information through online applications. It is therefore necessary to develop people's data literacy and improve their understanding of how large corporations use their data (Foresight Centre 2022). With artificial intelligence, there is a risk that it will not work as expected and might start giving people the wrong recommendations (Foresight Centre 2020). On the other hand, positive scenarios predict that more accurate health data regulations and transparency of collected data will give people a better overview of healthcare providers, empowering them to make informed choices.

Amid the current technological optimism, we must not forget that although innovative and smart solutions are essential complements to the existing ones, when it comes to mental health, nothing can replace direct human contact. When developing health technologies, we cannot allow ourselves to overlook the social and behavioural scientific dimension – innovations will be useless if they are not embraced by users.


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# Estonia 2040 scenarios

KRISTI GRIŠAKOV AND MERIKE SISASK • TIINA JÕGEDA (SCENARIO TEXTS)

The four exploratory scenarios (Börjeson et al. 2006) illustrating very different possible future developments play out the impact of the main trends described in this chapter. The exploratory scenarios illustrate the possible extremes of each axis, which may not materialise exactly as described here. For example, health care is unlikely to become polarised in such a way that the focus will be solely on prevention or solely on treatment. However, leaning more in one direction or the other, investing more funds in it or communicating messages supporting it is entirely possible. We selected the axes for the scenarios so as to cover both the wide-ranging changes in social attitudes and health behaviour and developments in the healthcare sector more specifically. Global trends (e.g. climate change or the impact of artificial intelligence and other still-unknown technologies) were included selectively.

The main axes for the future scenarios represent the predominant type of action and the focus of mental health interventions. When the two axes intersect, four scenarios arise. We begin each scenario by outlining the main characteristics of the future story that distinguish it from the others. This is followed by a description of what life is like in this possible future world, based on the two axes. The future stories are illustrative, and the main characters are presented as caricatures, with their key characteristics deliberately exaggerated. In the Estonian version, the main characters of all four scenarios are intended as gender neutral. In English, we address them using 'she' in some scenarios and 'he' in others, although it could just as well be the other way around. The key factors in each scenario apply equally to both men and women. It goes without saying that none of the scenarios appears in a pure form in real life, and none is good or bad in all its elements.

## AXIS 1 – TYPE OF ACTION

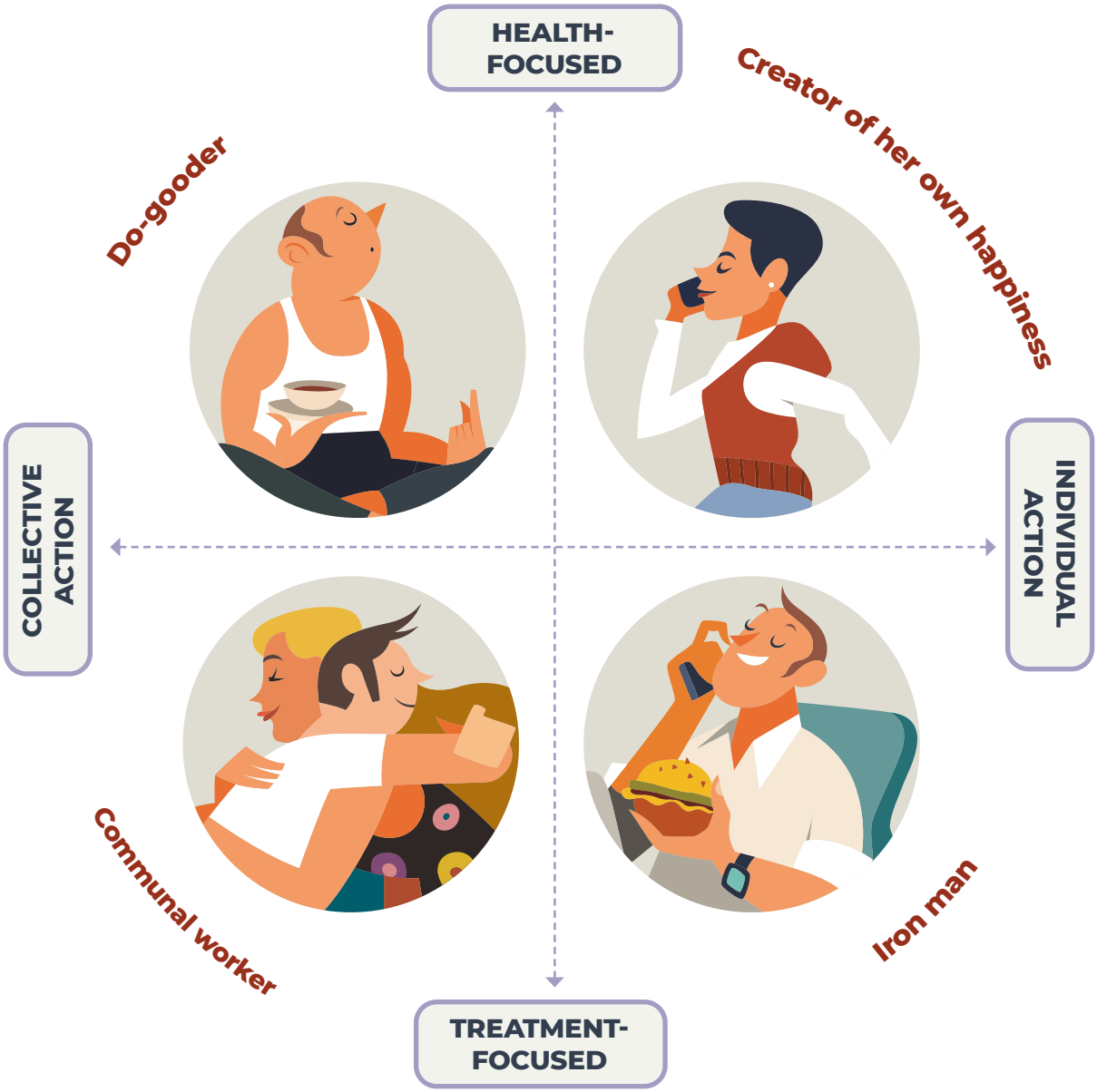
In a complex society, people's individual agency and their skills for collective action in various psychosocial environments (family, education and working life) are being put to the test more than ever before. Thus, our first axis focuses on the various ways in which the awareness and skills supporting mental health and well-being can develop in individuals and their psychosocial environments. One end of the axis represents a focus on individual action, which does not build strong community ties, and the other end represents collective action, which creates new and/or stronger support networks.

## AXIS 2 – FOCUS OF MENTAL HEALTH INTERVENTIONS

Although the prevalence of mental health disorders has increased and is likely to increase further, the availability of specialist care cannot grow indefinitely. The state and local governments have to do more with fewer resources – they have to find clever ways to strengthen mental health and organise help, including preventive measures to reduce the number of people in need of help. One end of the axis represents a focus on treatment, or dealing with the consequences. The other end represents a focus on health, or reducing the number of people in need of help with prevention.

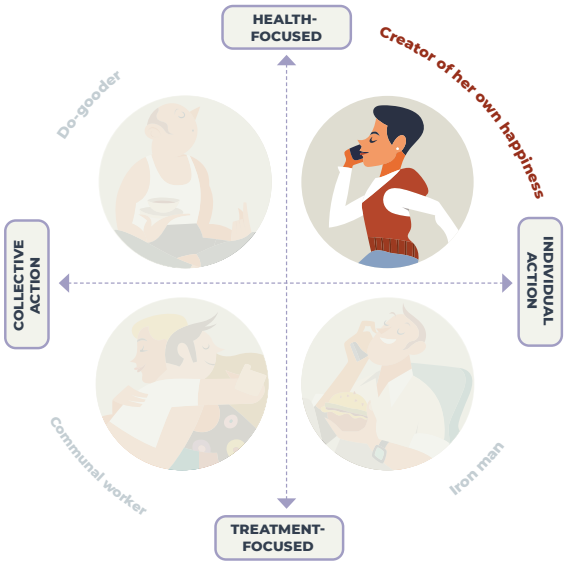
# Future scenarios

The main characters – Margo, Robin, Kait and Karol – meet in 2040 in a popular cafe in a quiet tree grove in the centre of Tallinn. The gruelling years of crisis, natural disasters, wars, migration and economic recession have had a severe impact on people's psyches. The government has realised that the medical system cannot cope with the nation's ever-increasing mental health problems, and it is looking to communities for support. The main characters are active people whose initiative has led to the creation of mental health centres in their communities. These functional models could be widely used in other regions of the country. Today, they must decide which model best supports people's mental health and well-being and considers society's values and options as well as people's attitudes and needs.



# THE CREATOR OF HER OWN HAPPINESS

| | |
|---|---|
| **RESPONSIBILITY FOR MENTAL HEALTH** | **Do it yourself. Acting on your own comes first** |
| **MAINTAINING MENTAL HEALTH** | **Lifestyle- and prevention-focused** |
| **FOCUS OF MENTAL HEALTH SERVICES** | **Wellness industry is booming. Services are expensive** |
| **MENTAL HEALTH PROBLEMS** | **Problems are a sign of failure** |
| **LIVING ENVIRONMENT** | **Green urban environment** |
| **DIGITAL ENVIRONMENT** | **An important part of life with lots of opportunities** |
| **SENSE OF COMMUNITY** | **Vague. Living alone is preferred** |
| **LIFESTYLE** | **Obsessively healthy** |
| **SELF-CARE TOOLBOX** | **Abundant, high awareness** |




With a screech of her bicycle tyres, Margo stops in front of the cafe. At the table, she eats homemade salad out of a box, because she knows best what is good for her, and she believes that everybody creates their own happiness.

Margo was a teenager when the world was in lockdown due to the COVID-19 pandemic, and her generation adapted to the digital lifestyle quickly. When Margo has a problem with mental health, she looks to 'Dr Google' first for answers. For her, the physical world is slow and not very motivating. Pop-up relationships are her only form of close relationship. It is lonely sometimes, but living alone is comfortable.

Margo lives in the heart of the city. ‘Even though, as a result of the green transition, many asphalt lots have been turned into parks in recent years and some Estonians have a garden, not everyone has such options and access to nature,’ says Margo. The quality of housing, the size of living space and the access to green spaces are very different. ‘That is why the primary goal of my mental health centre is reducing stress.’

The centre, located between office buildings, has spacious rooms for exercise, because sports and exercise are the foundations of mental health. The centre has nutritionists and body consultants. Body design has become a form of mass culture, or rather a plague, which sometimes goes to extremes. A community garden surrounds the centre because gardening has scientifically proven benefits for mental health. The centre has a lot of greenery and quiet

places. Various digital-based therapies and online counselling are offered.

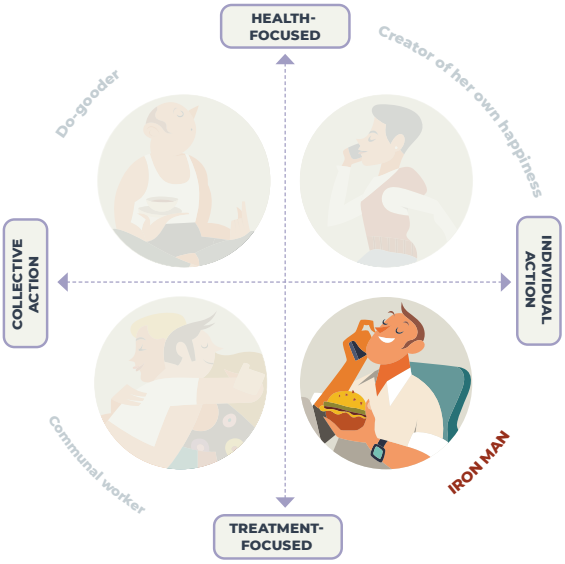
Margo thinks that a person's mental health should not be anyone else's business. 'People use guidance materials and put together their own mental health journey,' explains Margo. 'And if you cannot manage your mental health, it is your personal failure!' At the centre, people can learn self-care and mental health first-aid techniques and consult with a life coach. These services are expensive, and only the wealthiest people can afford them. It is hard to navigate the wellness industry and mental health gurus out there. Who is for real and who is just an extension of the world of entertainment?

Margo's motto is: 'The fishing rods are handed out, but you have to catch the fish yourself.'


**'The fishing rods are handed out, but you have to catch the fish yourself.'**

# THE IRON MAN

| | |
|---|---|
| **RESPONSIBILITY FOR MENTAL HEALTH MENTAL HEALTH** | **Do it yourself. Acting on your own comes first** |
| **MAINTAINING MENTAL HEALTH** | **Treatment- and services-focused** |
| **FOCUS OF MENTAL HEALTH SERVICES** | **Putting out fires, personalised medicine** |
| **MENTAL HEALTH PROBLEMS PROBLEMS** | **Problems are not recognised until they are acute** |
| **LIVING ENVIRONMENT** | **Commuting between city and country homes** |
| **DIGITAL ENVIRONMENT** | **Highly developed, rich in technology** |
| **SENSE OF COMMUNITY** | **Non-existent. Everyone for themselves** |
| **LIFESTYLE** | **Harmful to oneself** |
| **SELF-CARE TOOLBOX** | **Not considered valuable or important** |




Robin the iron man orders a huge burger and a large mug of strong coffee. His fast-paced life, business projects and events, along with commuting between his city and country home, leave no time to think about self-development or mental health. 'Everyone fights for themselves,' he says as he introduces his mental health centre.

In recent decades, society has been thrown from one crisis to another, which has also increased economic instability. There is a great deal of inequality and little social cohesion. Well-being is unstable – constant instability exacerbates mental health prob-


**‘Everyone fights for themselves. Fires are being put out constantly.’**

lems, but there is not enough time or money to treat them thoroughly. ‘Fires are being put out constantly. People are withdrawn; they almost never share their problems with others. Everyday life requires a lot of attention, and it creates stress. You only go looking for help when you are in deep trouble. Because of all this, creating a network of mental health centres is essential.’ When creating the centre, Robin felt that he might need such a place himself.

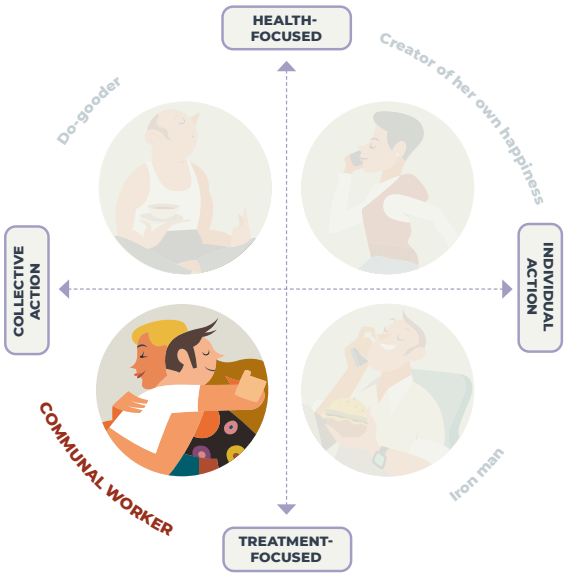
The centre is in the middle of the city, so it is easy to visit a psychiatrist or psychologist from your office, even during a lunch break. Numerous pocket parks and small green lots for relaxation surround the building. ‘Most importantly, the centre treats people who come to us with their problems. We rely on the modern possibilities of personalised medicine, and we also use new health technologies that help guide and organise treatment effectively,’ explains Robin.

The centre has a psychologist and a psychiatrist who prescribes pills, as well as babysitters so that parents can rest. ‘We also have life coaches and counsellors. For example, family therapists are in high demand because family relationships are superficial in today’s success-oriented world, different generations do not really communicate with each other, there are many problems in blended families, and so on. Even personal relationships are contractual these days,’ Robin sighs. The centre has many rooms for individual counselling, but most patients prefer remote therapy instead because they usually do not have time to come here.

Since everyone can only rely on themselves, Robin has also invested in individual health insurance. ‘People need to realise that when trouble comes, they have to rely on their own savings,’ Robin concludes.

# THE COMMUNAL WORKER

| | |
|---|---|
| **RESPONSIBILITY FOR MENTAL HEALTH** | **Shared and communal. Acting together comes first** |
| **MAINTAINING MENTAL HEALTH** | **Community services-focused** |
| **FOCUS OF MENTAL HEALTH SERVICES** | **Problem-oriented community services, abundant options** |
| **MENTAL HEALTH PROBLEMS** | **Problems are dealt with when they arise** |
| **LIVING ENVIRONMENT** | **Urban environment with a community garden** |
| **DIGITAL ENVIRONMENT** | **Rich in technology, tight social networks** |
| **SENSE OF COMMUNITY** | **Warm and welcoming** |
| **LIFESTYLE** | **Taking sufficient care of oneself, environmentally conscious** |
| **SELF-CARE TOOLBOX** | **Joint activities and self-care groups are popular** |




Kait, in her long and colourful robe, is called the communal worker because she is always busy with this or that much-needed community project. She hugs everyone before taking a seat. Kait orders a berry juice because she knows it is made from berries grown in her friends' community garden.

In recent years, Estonia's happiness index has increased, which is attributed to the country's efforts towards sustainable development and a responsible economy. Society has learned from the crises that an active community is the basis for coping. 'The best medicine is caring for each other,' says Kait. She was born when war was raging in

Ukraine, and her parents told her that back then, people were careless and critical towards each other. Kait does not want that to be normalised again. She lives in the capital, in a district known for its wooden buildings. She works from home, and robots deliver everything she needs to her.

'The mental health centre was a joint effort – we raised the funds and built it ourselves! There is no need for state funding. We are managing with crowdfunding.' The centre is on the premises of an abandoned shopping centre; people do not go shopping much anymore. Kait has been picking herbs and drying berries for the health centre all summer, and in the evenings she manages the various health-related groups on social networks. People in these groups share her views and are the creators, supporters and employees of the mental health centre.

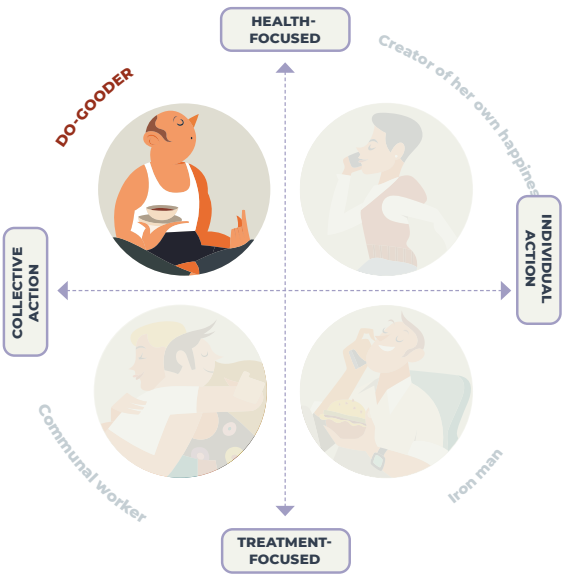
In the centre, special attention is placed on group therapy sessions, where solutions to various problems are sought

and which are led by local peer-support counsellors. The centre also organises creative therapy workshops and hikes and has a backyard cafe. All these provide opportunities to socialise. ‘Many people who come to us have phobias and social anxiety,’ the centre’s volunteers say. ‘We do not rule out conventional medicine, but sometimes people are sceptical about mainstream help and digital technologies. People who have personal experience and are well-known or recommended are often trusted more,’ says Kait. The centre boldly experiments with psychedelic therapies, and the community mental health ambulance has worked very well. Although sometimes the grind makes Kait feel exhausted (she calls it ‘the community work stress’), she says confidently: ‘People contribute to the community and expect to get something in return. The responsibility for ensuring mental health and well-being lies with communities.’

**‘The best medicine is caring for each other.’**

# THE DO-GOODER

| | |
|---|---|
| **RESPONSIBILITY FOR MENTAL HEALTH** | **Shared and communal. Acting together comes first** |
| **MAINTAINING MENTAL HEALTH** | **Centred around ecology, prevention-focused** |
| **FOCUS OF MENTAL HEALTH SERVICES** | **Community support services** |
| **MENTAL HEALTH PROBLEMS** | **Problems should be prevented but are not to be ashamed of** |
| **LIVING ENVIRONMENT** | **Ecovillage on the outskirts of the city** |
| **DIGITAL ENVIRONMENT** | **Global, integrated into everyday life** |
| **SENSE OF COMMUNITY** | **Tight-knit and supportive** |
| **LIFESTYLE** | **Healthy, natural part of the daily routine** |
| **SELF-CARE TOOLBOX** | **Abundant, acquired from a young age** |




Karol, known as the do-gooder among his friends, orders green tea and beetroot chips. He lives an hour's bike ride from the capital, in one of the many ecovillages on the outskirts of the city that became popular after the energy crisis ravaged the world.

'I interact with people from many different communities, and I know that the major crises and natural disasters of recent years have had a debilitating effect on people's mental health. For example, people often come to us with concerns about the climate and social phobias. People can find support from their communities, but our centre is focused on prevention. We have lectures


**‘Taking care of mental health has become a natural part of personal hygiene.’**

and workshops. We also teach self-care techniques, yoga and proper nutrition,' he says.

Karol, who is retired, does not have a family, because starting a family is no longer a social norm. 'Our generation has fewer children than pets,' Karol admits. He has a strong sense of responsibility and is dedicated to repairing the broken world inherited from our ancestors. In the last 20 years, problems with face-to-face communication have reached epidemic proportions. Stress and anxiety disorders caused by isolation are even more common than they were immediately after the COVID-19 pandemic.

The centre founded by Karol and his partners has done a lot to ensure that the everyday living environment does not cause stress. Far from the din of the city, the centre is not affected by noise or light pollution, which is why it is favoured by patients with sleep disorders. As a sign of an ageing society, many of the centre's clients are older people. 'We help a lot of older people who feel lonely. We create bridges between generations. Older people can teach the youth good old-fashioned communication skills, such as making eye contact and reading body language.'

Prevention campaigns and including self-care classes in school curricula have paid off: taking care of mental health has become a natural part of personal hygiene. People are aware of different support services. The state mainly allocates funds only to mental health support services because most of the prevention and support services are borne by the communities. People do not need to pay for community support services.

The private sector also contributes significantly to prevention because responsible and social entrepreneurship is seen as natural in society. More and more reasonably priced creative products that promote mental health are brought to the market.

# Editor-in-chief

# Chapter editors

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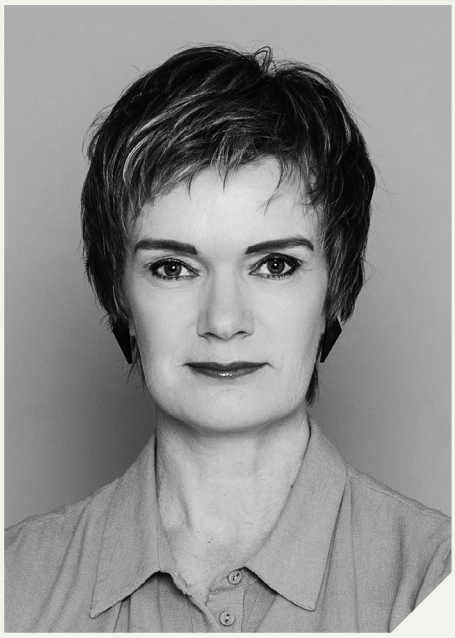

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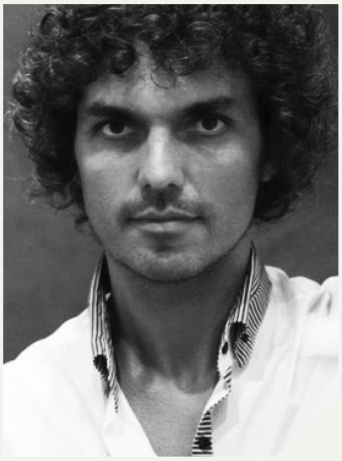

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is a scientific secretary and lead researcher at the National Institute of Health Development. Her main area of research is public health science, specifically, nutrition and related health risks. She studied medicine at the University of Tartu, continued with her master's and doctoral studies at the University of Bergen in Norway, and then worked as a visiting research scholar at the University of Oxford and the University of Oslo. She has been working at the National Institute for Health Development since 2009.

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is a researcher at the National Institute for Health Development. Over the decades, she has conducted research on many topics: the physical development and teaching of preschoolers and youth, physical fitness, and population health survey methodologies. She has lent her expertise to projects about physical education curriculums, health behaviour in young people, and physical activity. Since 2018, Leila has been a principal investigator of the Estonian board of the HBSC (Health Behaviour in School-aged Children) study.

## HANS ORRU

is a professor of environmental health at the University of Tartu and a visiting fellow at Umeå University. His main research area is the health impact of the external environment. He focuses on outdoor and indoor air pollution, extreme weather conditions and climate change, noise and the health impacts of the oil shale sector. He has led numerous research and development projects, which have had a significant role in raising public awareness about the health effects of the environment.

## KATI ORRU

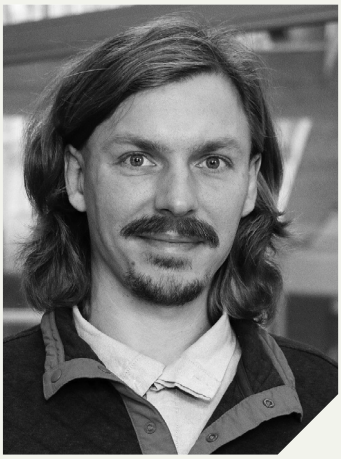
is an associate professor of the sociology of sustainability at the Institute of Social Sciences of the University of Tartu. Her research topics include social and regional inequality in environmental health effects and the sustainable development of socio-technical systems. She has been the Estonian coordinator in several international disaster vulnerability projects and has created experimental developments for government agencies. She was a post-doctoral researcher in the health and environment research group at Umeå University.

## LIISI PANOV

is an analyst in the Department of Health Statistics at the National Institute for Health Development. Her main field is injury and morbidity statistics.

## JAANIKA PIKSÖÖT

is an analyst at the Research Centre of the National Health Development Institute. She has an MSc in teaching biology from the University of Tartu and has participated in several studies in the field of public health science, general education and educational technology. Currently, she is the senior researcher of the Health Behaviour in School-aged Children (HBSC) study in Estonia.



## JOONAS PLAAN

is a lecturer of anthropology at Tallinn University and a sustainable fisheries expert at the Estonian Fund for Nature. His main research areas deal with the impact of climate change on coastal communities, environmental conflicts and sustainable fisheries.

## BIANKA PLÜSCHKE-ALTOF

is a senior researcher of environmental sociology at Tallinn University and a lecturer of qualitative research at the University of Tartu. Her research involves human geography and political ecology and focuses on spatial inequalities and environmental justice, including environmental and climate activism.

## MERLE PURRE

has been a member of the Peaasi.ee team for nearly 10 years, conducting mental health research and educational activities. She has an MA in semiotics and culture studies and is currently pursuing a PhD and working as a junior research fellow in sociology at the University of Tartu, focusing on the attitudes towards mental health, psychiatric disorders and help-seeking.

## LIINA RANDMANN

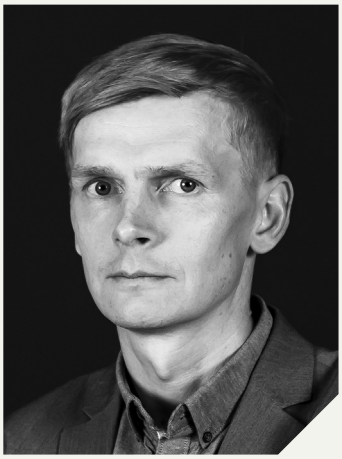
is a senior lecturer at the School of Business and Governance of the Tallinn University of Technology and programme director of the human resource management MA programme. She teaches work and organisational psychology. Her research involves the quality of the working environment, supporting the mental health of employees and the quality of management/leadership. She is a member of the Estonian Work and Organizational Psychology Association and, since 2019, has been a member of the COPSOQ international network.

## RENÉ RANDVER

is a certified clinical neuropsychologist and has a PhD in psychology. Most of his professional life has been devoted to clinical work. He has also engaged in academic work and research and development in both the public and private sectors. His interests include the mental health and well-being of older people, cognitive disorders, treatment-resistant mental disorders and non-invasive brain stimulation.

## MARIT REBANE

is a senior lecturer and programme director at the Department of Economics and Finance of the Tallinn University of Technology. She has a PhD from the European University Institute and an MSc from the University of Oxford. Her main research areas are social inequality, time-use studies, the relationships between health and economic behaviour, education, child and youth well-being, public economics, and economic policy.



## RAINER REILE

is a senior researcher in the Department of Epidemiology and Biostatistics at the National Institute for Health Development. He conducts research in the field of social epidemiology, focusing on the relationship between health determinants and outcomes, and has dealt with the topics of inequality, health behaviour, quality of life and mental health. Rainer has also worked on survey methodology and data quality and leads the survey of Health Behaviour among Estonian Adult Population.

## MIRJAM RENNIT

is a social anthropologist whose field of research is the Estonian environmental movement. In early 2022, she got her MA from the Department of Ethnology of the University of Tartu. Her MA thesis focuses on the efforts of Estonian climate activists to communicate the messages of climate science and the consequences of climate change in the Estonian context. Mirjam currently works in the field of migration.

## BERIT RENSER

is a PhD student and a junior researcher at the Baltic Film, Media and Arts School of Tallinn University. In her dissertation, she studies witches, healers and other spiritual specialists on Facebook and the people who turn to them. Berit's most recent research interests are related to alternative health beliefs and practices and their social mediatisation.

## DMITRI ROZGONJUK

is an Estonian researcher who has published more than 50 peer-reviewed research articles, most of them dealing with the interactions between digital technologies (e.g. smart devices, social media) and between psychology and behaviour.

## UKU RUDISSAAR

is a PhD student in demography at Tallinn University and a junior researcher at the School of Governance, Law and Society. Before moving to research, he was a civil servant and a lecturer at the Estonian Academy of Security Sciences. His research at Tallinn University has thus far focused on the relationship between the economic circumstances and well-being of people over 50 from the life course perspective.

## ANDU RÄMMER

has an MSc in psychology and a PhD in sociology. He has worked as a lecturer and researcher in sociology at the University of Tartu and as a project manager at the Estonian Social Science Data Archives and the Estonian Youth Institute. Since 2019, he has been an associate professor of youth studies at the University of Tartu Narva College. His main research topics include the shaping of attitudes and values, and social representations.

## LUULE SAKKEUS

is a research professor of demography at the Estonian Institute for Population Studies of the School of Governance, Law and Society of Tallinn University. Her research topics focus on population ageing, health, family formation processes and behaviour patterns of immigrant populations. Luule brought SHARE (the Survey of Health, Ageing and Retirement in Europe) to Estonia for the fourth wave of the international survey in 2010 and has been its research coordinator ever since.

## SIRLE SALMISTU

is a post-doctoral researcher at the Tallinn University of Technology Tartu College and also works as a landscape architect and an urban planner. Her research interests include planning age-friendly communities, urban ageing, healthy communities, accessibility, gentrification and placemaking. She has a PhD in urban and regional planning from Michigan State University. Her dissertation focused on contemporary concepts in urban planning.

## RIIN SEEMA

defended her dissertation in psychology on the subject of mindfulness at Tallinn University in 2014. She works as an associate professor of pedagogical counselling at the School of Educational Sciences of Tallinn University. Her research areas are mindfulness, digital addiction, digital mindfulness and pedagogical counselling.

## INDREK SEPPO

is an economist and data analyst involved in building e-Estonia in the e-Residency programme and teaching data analysis at the University of Tartu and the Tallinn University of Technology.

## ANDRA SIIBAK

is a professor of media studies and programme director of the media and communication PhD programme at the University of Tartu. Her main research interests are related to the use of digital technologies, datafied society and privacy. Andra is the general secretary at the European Communication Research and Education Association (ECREA) and since 2021 has been a member of the film, media and visual studies section of Academia Europaea.

## ANNIKA SILDE

has a BA in educational sciences and an MA in studies of social pedagogics and child protection from Tallinn University. She has a leisure-time manager-teacher diploma from University of Tartu Viljandi Culture Academy. Her areas of interest are child participation, inclusive education, digital parenting and making agreements in the family. She works as a project manager at the Estonian Union of Child Welfare, where she coordinates projects concerning children's rights.

## INGRID SINDI

is an associate professor of social work at the School of Governance, Law and Society of Tallinn University. Her research focuses on the changing concept of the child in substitute care and systemic developments in the organisation of substitute care. She is interested in topics related to ensuring the rights and well-being of children separated from their families and the possibilities of supporting their social connection and status.

## RASMUS SINIVEE

is a PhD student in health behaviour and well-being at the School of Natural Sciences and Health of Tallinn University. His research focuses on the relationships between technology and health behaviour – his dissertation explores discourses on social media addiction in Estonia. Rasmus has worked as a public relations adviser, communications manager and adviser. Currently, he is the daily editor for Channel TV3's news programme *Seitsmesed uudised*.

## KADRI SOO

is a junior lecturer of social policy at the University of Tartu. Her main research topics are the well-being of children and families, gender-based violence and child abuse. She has contributed to international surveys of children's subjective well-being (ISCWeB, Children's Worlds) and participates in research projects mapping young people's internet use (EU Kids Online) and digital competences (ySKILLS).

## KARIN STREIMANN

is a researcher in the Children and Youth Unit at the National Institute for Health Development. She has a PhD in social work, and her research is related to the development of a prevention system in Estonia. In addition to her daily work, she teaches and supervises students at universities in Tallinn and Tartu. She is also a member of the European Society for Prevention Research and a reviewer for the *Journal of Prevention*.

## HEDVIG SULTSON

is a visiting researcher at the National Institute for Health Development. Her main research areas include emotion regulation and health behaviour and their connections with mental health problems. For her PhD, Hedvig studied the underlying mechanisms and nature of emotional eating. Her area of interest is the psychology of eating, i.e. dysregulated eating behaviour and eating disorders.

## TIINA TAMBAUM

is a researcher at the Estonian Institute for Population Studies of Tallinn University, an educational gerontologist and a project manager of SHARE Estonia. She has developed tools for intergenerational cooperation, including e-skill instruction methodology for non-professionals and phone befriending service resources. Tiina is the co-author of *Gerontoloogia õpik* (Textbook of Gerontology), *Vabatahtliku seltsilise käsiraamat* (Voluntary Companion's Handbook) and the *Third International Handbook of Lifelong Learning.* The Health Promotion Association awarded Tiina the honorary title Health Friend of the Year 2021.

## ELEN-MAARJA TRELL

is an assistant professor at the Faculty of Spatial Sciences of the University of Groningen. Her main research topics are inclusive planning and governance and the role of local-level initiatives and activism in creating resilient places. She also studies the sustainable development of rural areas, focusing primarily on the spatial design practices of young people, as well as well-being and civic participation.

## JAAN TULVISTE

is a visiting researcher at the National Institute for Health Development and the project manager of the Estonian National Mental Health Study (2020–2022). He has previously worked in the field of personal medicine, health technologies and mental health in both the public and private sectors. In his research, Jaan has studied the neuropsychology of human decision-making, focusing on the brain's mechanisms of risk-taking behaviour and complex decisions.

## KARIN TÄHT

is an associate professor at the Institute of Psychology and the Institute of Mathematics and Statistics of the University of Tartu. She has researched the smartphone and social media use of school and university students and their concerns about academic performance and mental health.

## MARKO UIBU

is an associate professor of social innovation at the University of Tartu. His research is focused on shaping social changes, co-creation, medical pluralism and (health) beliefs.

## ANDERO UUSBERG

is an associate professor of affective psychology at the University of Tartu. He studies and teaches the mechanisms that regulate human behaviour, such as emotions, motivation and self-control. Andero also designs affective psychological interventions. He defended his dissertation in psychology at the University of Tartu and worked as a post-doctoral researcher at the Psychophysiology Laboratory of Stanford University.

## PIRET VACHT

is a lecturer and programme administrator of environmental management at Tallinn University. She has a PhD in ecology, and her current research interests involve the interactions between humans and the environment in the context of urban ecology, environmental awareness and more broadly. Currently, she is interested in resilience and sustainability, including the sustainable management of soils.

## AUNE VALK

has been the vice-rector of academic affairs at the University of Tartu since 2018. Previously, she worked as the head of the analysis department at the Ministry of Education and Research, the national project manager of the international adult skills survey PIAAC, the director of the Open University at the University of Tartu and a (senior) researcher at various institutions. She has researched ethnic identity and ethnic relations, skills and education and taught cross-cultural psychology.

## TRIIN VEBER

is an environmental health specialist at the Institute of Family Medicine and Public Health of the University of Tartu, where she is also pursuing a PhD. Her main research topics are the health impacts of noise, air pollution and climate change.

## SIGRID VOROBJOV

is an administrator and senior researcher in the Department of Drug and Infectious Diseases Epidemiology at the National Institute for Health Development. Her main research topic is drug use, including among schoolchildren and various at-risk groups, such as people who inject drugs. Within the epidemiology of infectious diseases, she focuses on infectious diseases related to risk behaviour, such as HIV and hepatitis C. Following the recent pandemic, she also studies the spread of the coronavirus.

## AIRI VÄRNIK

is a professor emeritus who has worked for many years as a clinical psychiatrist, researcher and lecturer (with professorships at the Karolinska Institute and the universities of Tallinn and Tartu) in the field of mental health, suicidology, social psychiatry, health behaviour and well-being. She is the author of more than 3,500 internationally cited research papers, a member of the International Academy of Suicide Research, and the founder and head of the Estonian-Swedish Mental Health and Suicidology Institute (ERSI).

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