

MARIANNA MORAVECZ

# HEALTH CAPITAL OF STUDENTS IN THE LIGHT OF DAILY PHYSICAL EDUCATION



THE ICEBERG MODEL OF  
DAILY PHYSICAL EDUCATION IN THE CONTEXT OF  
STUDENT HEALTH AWARENESS

In the research presented in the book, the author was the first in Hungary to examine students who graduated from secondary school for the first time after the introduction of daily physical education. As a result, the book's topic, questions, and research are undoubtedly relevant and of great scientific value in terms of education and sports science, as well as policy (sports and education policy), and for the participants (schools, teachers, and students). The research explores the potential effects of daily physical education on various dimensions of health behaviour in a multifaceted manner, examining numerous correlations and focusing on the factors that influence regular physical activity and its impact on health. The author draws her conclusions by referring to the most important educational and sports policy objectives and makes recommendations based on the results.

Klára Kovács-Nagy



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**Marianna Moravec**

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**BELVEDERE**  
MERIDIONALE  
2025

**The research was supported by  
the Scientific Council of the University of Nyíregyháza.**

REVIEWED BY DR. KAROLINA ESZTER KOVÁCS

ISBN 978-615-6913-13-5 [print]  
ISBN 978-615-6913-14-2 [online, PDF]

The book cover was designed by Szabolcs Szentpáli based on the hungarian edition (2022).

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# Acknowledgements

*I have received professional support and guidance in the creation of the dissertation on which this book is based from people whose patronage I would like to thank.*

*I am grateful to Professor Dr. Gabriella Pusztai, Head of the Doctoral Program in Educational Sciences, who helped me define my research topic in the early years.*

*I would like to thank Professor Dr. István Polónyi for his critical comments, which helped me rethink some of the steps in the dissertation.*

*Special thanks are due to Dr. habil. Klára Kovács-Nagy, who helped me with her methodological and professional guidance in the detailed elaboration of the analyses. Under her guidance, I participated in various research workshops, resulting in numerous joint studies and conference presentations.*

*I would like to thank Dr. Karolina Eszter Kovács, whose editorial, professional, and methodological insights and suggestions significantly contributed to the final content and form of the book.*

*I owe the greatest gratitude to my family!*

*For those who are with me here and now and for those who can no longer be with me...*



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# The relevance of daily physical education

The impact of physical activity on both physical and mental health is now widely recognised worldwide. The outbreak and spread of the coronavirus epidemic (COVID-19) has increased the importance of an active lifestyle. It is now unquestionable that sport is a key tool for achieving balance and harmony and that it is an asset for the preservation and development of health (Pikó & Keresztes, 2007).

Several factors, including age, influence health behaviour and the components of a healthy lifestyle. Physical activity remains a daily part of children's lives (Keresztes et al., 2003), but its importance decreases as they grow older (Földesiné, 2008; Karsai et al., 2013). In young adulthood, when independent living begins, physical activity decreases further due to significant changes and events (Ádám et al., 2018). A crucial question today is to what extent the growing generation will be able to become a decisive part of a healthy society, both physically and mentally (Seregi et al., 2019). Educational institutions have traditionally played a significant role in promoting a healthy lifestyle, and it is therefore essential that regular physical activity is valued in schools and that a positive attitude and commitment to this are developed in students (Csányi, 2010). In this light, schools can be considered an important arena for the development of health-conscious attitudes (Somhegyi, 2012). Among the elements of personal development offered by public education, education for health and the meaningful use of leisure time are also important values (Csányi & Révész, 2015). This also applies to higher education, although neither the pedagogical nor the institutional background is fully developed.

A 1996 CDC publication (Physical Activity and Health, 2014) highlighted the complexity of the health risks associated with physical inactivity in the global population. The predicted negative phenomena have been addressed at the governmental level in many countries (World Health Organisation/Europe, 1993; Davis, 1998). However, no perfect solution to the problem has been found, as supported by several follow-up studies (Bruce & Kattzmarzyk, 2002; Jaret, 2002; Fu et al., 2012). In the work of Jákó (2012) and Fritz (2019), it has been found that Health-enhancing physical activity (HEPA) (WHO, 2007) can only become a regular activity in society if young people perceive it as a natural activity rather than a compulsory one (Fritz, 2019). The need for this change in perception is supported by a national study, which suggests that lifestyle use of physical activity can be estimated with a high degree of certainty along the dimensions of residence, education, income, and age (Urbán & Hann, 2003). This suggests that for young people leaving the world of formal education, a lifestyle change is not a self-evident concept. Risk-taking behaviours are becoming increasingly common, and it is therefore essential to develop a comprehensive and effective prevention system to enhance young people's health awareness and their motivation to participate in sport (Németh & Költő, 2011). Bábosik (2004, p. 12) has formulated his educational theory on the subject as follows: 'Of all the behaviours that are important for maintaining health, physical activity should be emphasised above all'. According to this view, the Hungarian Act CXC of 2011 on Public

Education introduced daily physical education into the Act. In the 2012/13 academic year, the introduction of this system began in a staggered manner, with the first cohort of eligible students starting their higher education studies in the 2016/17 academic year. The consolidation of physical activity in everyday life should start in childhood and may be the key to establishing a healthy lifestyle for the future (Bergier et al., 2014). The importance of daily physical activity is confirmed by data on obesity and overweight in the Hungarian adult population. According to the Obesity Update 2017 (published by the OECD), Hungary is ranked fourth in the world, with more than 30% of the adult population classified as obese. Although several factors can influence our health status, the most important one is the individual (Makai, 2019). In addition to the individual's lifestyle, the role of the social environment is also significant in the development of disease (Ádány, 2008). The socio-economic life space is a determinant of both the health status of the individual and society. However, health also has a feedback effect on socio-economic status and macro-level economic and social processes (Barro, 2013). An improved health status can lead to increased educational attainment, and, in addition, better health indicators have a positive impact on quality of life, quality of human capital, and income distribution. Thus, investments in health can also contribute to breaking the determinants of poverty (OECD-WHO, 2003; Szerdahelyi, 2020), making it important to map this context in the lives of young future intellectuals in the studied disadvantaged region of the Northern Great Plain.

The expectations of the introduction of daily physical education (2012) and the associated paradigm shift have been only partially met: Students' cardiovascular fitness and stamina have improved, but the fight against obesity has not yet shown significant improvement. It is essential to note that in this area, the role of nutrition is equivalent to that of physical activity, which requires conscious health behaviour. At the same time, changes in parental patterns and consumption habits are also undisputed (Szerdahelyi, 2020). Publications on the role of daily physical education in educational research have so far only been able to report initial experiences (Vári et al., 2012; Fintor, 2019; Nagy et al., 2018; Müller et al., 2018; Moravec, 2018). Fintor's (2016) research in the North Great Plain region found that a significant proportion of pupils were happy with the introduction of daily physical education, with 95% liking the subject, and that school leaders and parents saw the need to introduce it (Urbinné, 2018). Fintor's research investigated the relationship between health-conscious behaviour and daily physical education. She pointed out that this has a beneficial effect on students' extracurricular sporting activities, which is also relevant for lifelong sports socialisation later in life (after graduation) (Fintor, 2019). These results were the starting point for our study. Raising the health level of young people living in disadvantaged regions is of strategic importance for the individual, society and the economy in both micro and macro contexts. Developing positive attitudes towards healthy lifestyles (physical activity, nutrition, mental well-being) can be seen as a long-term investment. An investment in health, made at the right age and using appropriate methods, can generate a "return" not only for the individual but also for the national economy. Today's students are the workers of the near future and the founders of families, so it makes a significant difference how much "health capital" they accumulate for the rest of their lives. The health behaviour and academic performance of university-age students have been studied in Hungary (Nagy, 2010; Kovács, 2015b; Vajda et al., 2018; Müller et al., 2018; Pfau et al., 2019). Compared to previous research, the present study offers a novel aspect, as it focuses on the micro, meso, and macro levels of health and academic performance. The central question is which micro (individual), meso (family and school), and macro (social) factors influence the physical

activity and health behaviour of students and what role (if any) daily physical education plays in this as a potential investment in health.

## **The aim of the research**

During the research, we conducted a representative survey at the University of Nyíregyháza and the University of Debrecen to investigate the extent to which the daily physical education introduced from 1 September 2012 has changed the health behaviour and attitude towards the physical activity of students entering higher education. The problem of this research is to investigate the socio-economic characteristics of students and to explore non-study outcomes, including health behaviour characteristics. The study is based on a comparison of the opinions of first-year students (satisfied, less satisfied, with poor experience and not satisfied at all) of the University of Debrecen and the University of Nyíregyháza who graduated after 2015 (participating in daily physical education) and older students (not participating in daily physical education). In which areas of the research (health behaviour dimensions: drug use, alcohol consumption, smoking habits, physical activity, nutrition, mental well-being) do the responses of students of the two age groups agree, and how do they differ? The research examines socio-cultural and socio-demographic factors, interpreting the data along variables of grade, gender, type of settlement, and parental education. Emphasis should be placed on the fact that the role of daily physical education can only be explored through the inclusion of a mediating factor, as the students studied are not currently participating in the programme. This mediating factor is assumed to be the current participation in sports, and it is about this that I map the health behaviour of students in the North Great Plain region.

It should be emphasised that the research did not include an impact assessment, as the database does not permit the identification of cause-and-effect relationships or the monitoring of changes. The study of correlations will be conducted to help sports practitioners and education policymakers understand the potential role of physical education in higher education in influencing the practice of physical education. The research aims to highlight the factors (teacher or peer roles, experiential focus, institutional infrastructure) that can be identified in the practice of daily physical education in higher education, which could help students lead healthier lifestyles.

Act CCIV of 2011 on National Higher Education requires higher education institutions to ensure that students engage in regular physical activity. At the same time, the vast majority of students do not take advantage of sporting opportunities. This problem in our country was already pointed out in 2003 by Aszmann et al. The negative results of physical activity were also noted in the replication of the earlier study by Gaálné et al. at the University of Pannon in 2005. A survey of 18-30 year-olds initiated by MEFS in 2019 also yielded a concerning result, with 12.5% of students practically never engaging in any sport, indicating a lack of positive change in physical activity among students. From an educational point of view, the research is primarily concerned with the environmental, social, societal and individual factors that play a role in the health behaviour (preventive and risk) of students in the North Great Plain and whether the role of daily physical education can be considered as an “added value” in terms of these outcome indicators. Accordingly, the study was structured around the following research questions.

**Research question I:** What factors influence students' health behaviour, including their perceptions of their daily physical activity? How satisfied were they with this programme, and what factors influenced their opinions?

**Research question II:** Taking into account the combination of socio-cultural (family) and contextual (school) factors, what are the relevant explanatory factors for the level of physical activity and inactivity of students? Can the activity/inactivity pattern specific to the family be overridden by the role of daily physical education in sporting activity?

**Research question III:** How does participation in and satisfaction with daily physical education and personal values influence students' health behaviour (sports activity, physical and mental health, risk factors /smoking, alcohol, drugs, stress/, nutrition)?

To answer the research questions, the so-called OECD Iceberg concept (OECD, 2012) provides the theoretical basis for the research. I investigate the non-study achievement of students and, within this, the development of health-conscious behaviour, along with the five explanatory variables and influencing factors of the model.

## **Relevance of the research**

The relevance of my research lies in the fact that the analysis of the educational policy intervention in our country (as the only one in Europe), the implementation of daily physical education, does not focus on the specific place of implementation, public education, but on the living space of young people who move on from there, higher education. It examines the role of this program in promoting health awareness among students. In my analysis, I aim to explore complexity in several aspects beyond the combined presentation of micro, meso, and macro factors due to the interdisciplinary (sociological, psychological, pedagogical) perspective of analysing these factors. The area I am studying has not yet been studied from this perspective in this age group.

However, there has been considerable research on the health behaviours and problems of this age group.

## **Research findings supporting relevance**

In the following sections, we will review the international and national literature that confirms the importance of this topic. Telaman et al. (2005) conclude that regular sport and physical activity play a crucial role in health behaviour, especially since engaging in active sport and physical activity in childhood has a positive impact on activity levels in adulthood. Nagy (2010) suggests links between healthy lifestyles and academic achievement, academic sport and quality of life, and highlights the public health importance of long-term physical activity. Sport has both physiological and psychological benefits. It boosts self-confidence and fosters a positive outlook. Nagy and Kovács (2014) have, among other things, investigated the impact of sport on the values of university students. They showed that regular physical activity increases confidence in the future and that values such as self-actualisation and intellectualism become more prominent as the frequency of sporting activities increases. Sport promotes both healthy physical and mental development (Pluhár et al., 2003). Regular physical activity helps maintain health in the long term (Héjjas, 2006), and competitive situations provide opportunities to learn how to cope

with both success and failure. It also contributes to the development of problem-solving, conflict tolerance and conflict management skills (Rétsági, 2015a). Research among the Hungarian population has shown that individuals who regularly participate in sports have significantly fewer cases of long-term illness or other health problems than non-athletes (Jákó, 2012). Sports develop self-confidence and promote positive thinking (Baker et al., 2003). Bősze (2007) examined the basics of healthy living, including rest, exercise, and problem-solving behaviour. In her study, she emphasises the importance of developing these values as early as school age.

Sport is viewed as a crucial protective factor, a value that contributes to the maintenance and development of health (Pikó & Keresztes, 2007). This is contradicted by studies and views that suggest that people who regularly participate in sport are more susceptible to harmful addictions. Research among teenagers, such as Page et al. (1998) and Pikó (2000), has found that young people who participate in sport consume more alcohol and drugs than those who do not. Kovács (2014) conducted a study among young people in higher education and found that competitive sport is a risk factor for alcohol and drug use but protects against depression. In contrast, Bartík's (2012) research shows that sport can be an antidote to drug addiction. According to his research, 54% of athletes and 37.75% of those who do not participate in sport think that sport is an excellent antidote to drug use and addiction. Mikulán et al. (2010), examining data from the Szeged Youth Survey, conclude that there is a significant association between higher levels of leisure-time activity and lower levels of smoking and healthier eating but no association with the frequency of alcohol consumption.

According to previous Youth 2000-2008 research data, social situation is a very limiting factor for young people's sporting opportunities (Perényi, 2011). From the students' perspective, the situation of the student and the type of settlement are important factors. Among cities, those with a higher education location with sufficient infrastructure also rank first in terms of physical activity (Fábri, 2002). The possibility of participating in sports is more positive for students with a higher education status and student benefits than for those with a lower chance of employment (Perényi, 2011). Higher education institutions also play an important role in this respect, as sports and physical education in an organised setting develop more active participation and offer opportunities for self-expression and self-fulfilment through its specific tools (Bak et al., 2004; Graham, 2002; Laki & Nyerges, 2000; Parti, 2002).

The Hungarian Youth Survey covers the 15-29 age group, thus providing a picture of changes in the health behaviour of those leaving public education (and the compulsory nature of physical education). According to the 2016 Hungarian Youth Survey, nearly one-third of young people, primarily men, are physically active regularly. This level also shows a downward trend with increasing age. The main motivational reasons are health (75%), fitness (74%), well-being (61%), and good looks (58%). However, many also exercise for their pleasure (62%). According to the 2016 Hungarian Youth Survey data, 36% of respondents reported exercising outside of school physical education lessons (Ádám et al., 2018).

During the period 2000-2020, the decline in this area was halted by 2016 (Figure 1). Unfortunately, it is still far from being a significant increase. 64% of young people do not exercise regularly. Men are significantly more active (42%), compared to only 30% of women. The proportion of 15-19 year olds who exercise regularly is higher (41%) than among 20-24 year olds (35%) and 25-29 year olds (33%). A large proportion of young people (70%) prefer to spend their free time at home (TV, internet, music), and the rise of smartphones has also led to the dominance of chat and Facebook. They spend most of their free time at home and

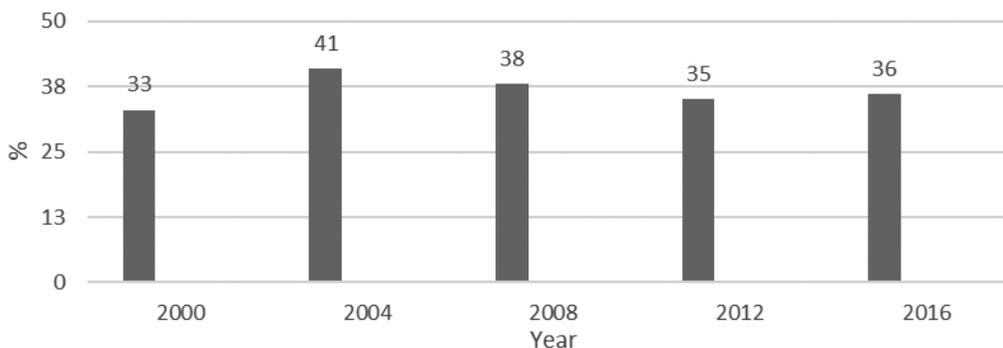


Figure 1: Percentage of participation in sports outside physical education lessons between 2000-2016 (Source: Hungarian Youth Survey 2000-2016 based on own edition)

with friends. Sports and hiking, and excursions were the most popular choices for 27%. The share of young people who play competitive sports was 12% in 2000, but according to a survey conducted in 2016, it has decreased to only 5% (Ádám et al., 2018). This data supports Perényi's (2011) finding that the search for immediate results and experiences with little investment is becoming dominant among members of the postmodern "experience society". The performance-oriented world of competitive sports, which demands perseverance and resignation, does not offer them attractive prospects.

53% of Hungarians do not exercise at all, which is 9% higher than the result from the previous survey (Eurobarometer, 2017). This indicator is not only worse in Hungary but also in the EU. There are 4% fewer people moving than in the 2013 survey. The proportion of people who do not exercise is 46% compared to the EU average. This new edition of the survey also confirms that most sports or physical activity takes place informally at home, in parks and outdoors. 59% of the Hungarian population engages in physical activity at home (EU average: 32%), and 78% are not members of any sports club or group.

Hungarians generally participate in little sport (more than 60% have never done any), and in recent years, regular physical activity has not become popular among young people (15-29 years old) (Földesiné, 2008; Perényi, 2014; Hungarian Youth Survey, 2016). This situation worsens with age (Földesiné, 2008). Research over the last 20 years indicates that more than 50% of young people aged 7-25 years engage in only moderate physical activity, and over half of non-athletes participate in 1-2 hours of physical activity per week. Based on international recommendations, only 20% of young people in Hungary get as much physical activity as they should (Halmai & Németh, 2010; Strong et al., 2005).

In previous research in higher education, Mosonyi et al. (2013) investigated the sporting habits of economics students at Szolnok College, Müller (2009) investigated the sporting habits of students at Eszterházy Károly College, and in another study the sporting habits of students at BME, DE, PE, SE, SZE (Pfau, 2016), as well as students of Hungarian minority institutions in Hungary and abroad (Kovács & Moravec, 2019; Moravec et al., 2019). The results of these studies indicate that during their university years, students' participation in competitive sporting activities declines significantly, with a preference for off-campus recreational activities. The primary reason students cite for dropping out of sports is a lack of time (Pfau, 2016; Moravec, 2018).

In terms of gender, Kovács' (2014) studies among university students also show that it is mainly men who participate in competitive sports, while women either do not participate at all or only in their leisure time. According to Fuscaldo et al. (2002), the best places to initiate regular physical activity for preventive purposes are programmes run by health professionals and other professionals (e.g. teachers). One of the current institutional settings for this could be the university or college world if the transfer of knowledge to promote preventive, health-conscious behaviour could be incorporated into the educational process.

## Interpretation and conceptualisation of the concepts studied

This section aims to provide a brief definition and review of the concepts involved in our research. The research findings on these concepts will be discussed in a later chapter.

**HEALTH:** The World Health Organization (WHO) defined *health as* "Health is not merely the absence of disease, but a state of physical, mental and social well-being" (WHO, 1946; Nagy & Barabás, 2011, p. 176). The World Health Organisation has revised and updated several definitions of health. According to the *Ottawa Charter for Health Promotion* (WHO, 1986), health is not a life goal but a resource for daily living. Later, in Jakarta, the WHO updated the concept according to a socio-ecological shift in approach. According to this, "Health is not some abstract state, but a means to some end, which in terms of agency can be understood as a resource that enables people to live productive lives individually, socially and economically" (Nagy & Barabás, 2011, p. 178). Individual health status is defined as the sum of social determinants, individual behaviour, experiences, knowledge and the physical environment. From a pedagogical perspective, it is essential to emphasise the dynamic nature of health, active health promotion, and the activities that individuals undertake to promote their well-being. Farkas (2008) notes that a holistic understanding of health is gaining ground today.

According to Ewles and Simnett (1999), the most basic dimensions of health are *physical health, mental health, emotional health, and spiritual health*. *Physical health* refers to the ability to function physically; *mental health* refers to the ability to think clearly; *emotional health* refers to coping with anxiety and stress; and *spiritual health* is a sign of peace with oneself and peace of mind. *Social health* refers to the ability to build personal relationships, and it is a shared responsibility between society and the individual for their well-being. It is not possible to be healthy in a society that does not provide the basics for basic physical and emotional needs (Bucsy, 2003). A key goal is to establish health as a valued aspect of life through knowledge transfer, setting examples, and fostering a new attitude towards life (Blackburn, 2006; Bognár et al., 2005; Huszár & Bognár, 2006). The theoretical basis for our research can be found in the interdisciplinary (behavioural) model of Mária Kopp and her colleagues, which they applied to quality of life studies among the Hungarian population (Kopp & Kovács, 2006). Health can be understood as a complex bio-psycho-social state, which encompasses biological, psychological, social, and, more recently, spiritual dimensions. The newer dimension is a crucial component of mental health, as it offers a unique perspective on existing life situations and the meaning of life, and its understanding can provide a person with confidence and peace of mind (Steger et al., 2006).

**Quality of life:** It is an indicator of health status. A complex system that encompasses a person's physical health, personal beliefs, psychological state and social relationships. It is an individual's perception of their position in life, influenced by their life values, culture, and individual goals

and relationships. It also reveals their relationship to the environmental determinants (Kullmann, 2010).

**HEALTH BEHAVIOUR / PHYSICAL ACTIVITY/:** *Health behaviour* is the set of behaviours that help to avoid disease and develop a health-conscious lifestyle. Psychological and socio-cultural factors influence health behaviours. Within psychological factors, Matarazzo (1980) distinguishes two forms of health behaviour. Preventive behaviour (health-conscious eating, physical activity, safety-oriented transport, sexual behaviour), in which cognitive elements predominate, and pathogenic behaviour (alcohol and drug consumption, smoking) (Fürediné, 2008). The health behaviour and health values of individuals are determined by culture and are therefore shaped by the values and norms of society (Ferron, 1997).

The concept of *physical activity* is mainly found in the scientific literature on sport and health. Among the health-conscious behaviours, physical activity is known to have numerous beneficial effects, both physiological and psychological (WHO, 2010; Bíró, 2015). Physical activity is defined as “any physical movement generated by the muscular effort that involves the expenditure of energy” (Carpensen et al., 1985; Pikó & Keresztes, 2007, p. 47). According to the White Paper on Sport (2007), physical activity is defined as any form of activity undertaken occasionally or regularly to improve physical fitness and mental well-being, to develop social relationships or to achieve competitive results. From an educational perspective, Bábosik (2004) argues that the lifelong foundation of physical activity becomes part of the personality only if it is carried out through a planned educational programme. Since all activities involving movement are linked to the development of thought processes throughout early schooling, future-oriented physical education should be introduced in the introductory and early primary school phases (Vass & Kun, 2010).

**HEALTH CONSCIOUSNESS:** *Health awareness* refers to the development of health behavioural components that influence health status through rational management in order to promote health (Huszár & Bognár, 2006). Health is a value to be achieved in education, and thus health awareness development is also legally required in schools. As a crucial step in this direction, daily physical education has been introduced in public schools. In our society, a value system that prioritises material values is associated with a lower level of health awareness, which in turn inhibits the development of active lifestyles (Pikó, 2005; Pluhár et al., 2003). The development of motivation for physical activity requires the right balance of external and internal incentives. The predominant role of intrinsic orientation has a stimulating effect on attitudes towards sports, which in turn strengthens motivation to maintain health (Deci & Ryan, 1985). The triad of attitude, leisure, and money is a prerequisite for choosing physical activity (Laki & Nyerges, 2004). Of these, attitude is the one that directly influences the use of leisure activities (Paár, 2010). Health behaviour is guided by the choices of the individual, which are, in turn, influenced by attitudes based on prior experience and knowledge. Acquired knowledge can only become practice if the personality factors that shape and guide implementation are supported. The triad of knowledge, attitudes and skills can be seen as the pillars of applicable health literacy (Gritz, 2007).

From an educational perspective, the pedagogy described by József Zsolnai could serve as a benchmark for health awareness, with value, learning value, and facilitating the learning process of value as the defining elements. It is crucial that the transmitter of value (knowledge) should induce the retention of value in the student, leading to concrete, secure, health-conscious behaviour rather than rejection or indifference (Zsolnai, 2001).

**BODY CULTURE /BODY TESTING/:** *Body culture* is one of the most important concepts in sports science. Bély and Kálmánchey (1967) define the concept of physical culture as the area

of culture, encompassing the set of values that can be formulated as the strengthening of health, the purposeful development of physical literacy, and training. Hamar (2016) uses the term “*body culture key competence*,” which is associated with the ability to enjoy and value one’s health, the ability to recognise the values that support health, to learn positive behaviours, to recognise health risks, and to avoid them. According to Biróné (2004), **physical education** can be understood as a subject structured according to pedagogical, curricular, didactic and methodological criteria. **Physical education** is a planned and ongoing process of personal development that occurs within the educational process. Not only do physical education teachers, but also all teachers and, ultimately, society as a whole, have a role to play in the implementation of physical education (Gergely, 2002). Physical education is implemented in different settings: the school is the primary setting for physical education, while the family and community are also involved in providing opportunities for physical education. According to Szakály (2019), Hungarian sports pedagogy often employs **health education** as a composite concept that encompasses elements of both physical education and health education. However, as Gombocz and Hamar (2014) state, physical education is distant from health education in terms of both content and values, as it conveys pedagogical effects in certain educational situations that cannot be replaced by others (Gombocz & Hamar, 2014). According to Mikulán (2013), the introduction of **daily physical education** is an important stage in the teaching of physical education. Balogh (2015) also believes that the new implementation process is an irreplaceable tool for shaping healthy lifestyles in our country. The World Health Organisation (WHO, 2010) recommends that children and adolescents engage in at least 60 minutes of moderate-intensity physical activity per day. The key challenge is to create a new quality of physical education in which the interconnections between health, physical literacy and physical culture become the single dominant value. These concepts can be a response to the societal challenges that influence educational processes (Rétsági, 2015a). Together, the field of physical education and sport literacy can create an initial set of goals for health-conscious, physically active and regular life education (Vass et al., 2015).

Table 1: Conceptualisation of the concepts to be tested

	DEFINITION DIMENSION	ANSWER
<b>Health</b>	IMPACT OF QUALITY OF LIFE ON HEALTH Physical health related quality of life indicators: - subjective health status	<i>How would you rate your health?</i> <i>How would you rate your fitness level?</i>
	- subjective fitness status  Quality of life indicators related to mental/mental health: - subjective well-being  -Social (community) health-related quality of life indicators	<i>How satisfied are you with your life?</i> <i>How happy do you consider yourself?</i>  <i>How important are the following in your life? (e.g. Cultivating traditions, friendship...)</i> <i>Who do you usually go to sporting events, outings and hikes with?</i> <i>Who plays sports in your area?</i>

<p><b>Health-Awareness of effectiveness</b></p>	<p><b>Health behaviour</b> Health risk behaviour (risk-taking behaviour)</p> <ul style="list-style-type: none"> <li>- smoking</li> <li>- alcohol consumption</li> <li>- drug use</li> <li>- stress</li> </ul> <p><b>Health protective behaviour (preventive behaviour)</b></p> <ul style="list-style-type: none"> <li>- healthy eating</li> <li>- sleeping habits</li> <li>- physical activity</li> </ul> <p><b>Health awareness</b></p> <ul style="list-style-type: none"> <li>- subjective health awareness</li> <li>- commitment to health</li> </ul>	<p><i>How often do you smoke?</i> <i>How often do you drink alcohol?</i> <i>How often do you go out partying (nightclubs, alcohol included)?</i> <i>Have you tried any drugs?</i> <i>What are the biggest causes of stress for you?</i></p> <p><i>How much fluid do you drink a day?</i> <i>Do you think you eat healthily?</i> <i>Do you need to follow a diet? If so, what kind?</i> <i>How many hours of sleep a day do you get?</i> <i>What type of sport do you play?</i> <i>What level of sport do you play?</i> <i>Overall, how health conscious do you consider yourself to be?</i> <i>Do you know and monitor your own: (weight, blood pressure...)?</i> <i>What do you think is needed to change your health behaviour, if necessary?</i> <i>How often have you participated in university sporting events during the last semester?</i></p>
<p><b>Body culture (physical education and sport)</b></p>	<p>DAILY PHYSICAL EDUCATION (public education)</p> <p><b>sporting habits (higher education)</b></p> <p><b>attitude towards the importance of sport</b></p>	<p><i>Were you involved in daily physical education during your secondary school years?</i> <i>If so, what is your opinion of the programme?</i> <i>What factors influenced your opinion?</i> <i>In addition to the compulsory physical education course, how often have you recently done any intensive sporting activity lasting at least 45 minutes?</i> <i>If you don't do sport, what could be the reason?</i> <i>If you play sport, why is it important to you?</i> <i>If you could decide, would you introduce compulsory physical education in every semester in higher education? If not, why not?</i></p>
<p><b>Socio-economic status</b></p>	<p>Social background</p> <ul style="list-style-type: none"> <li>- not</li> <li>- age</li> <li>- residence</li> <li>- parents' education</li> <li>- subjective financial situation</li> <li>- objective financial situation</li> </ul>	<p><i>Type of residence?</i> <i>What is the highest level of education of your parents?</i> <i>How do you assess your financial situation?</i> <i>Do you have the following?</i></p>

**SOCIO-ECONOMIC BACKGROUND: Socio-economic status** is a determinant in explaining inequalities in health (UNICEF, 2012). It is a set of concepts that aggregates social, economic and occupational status. It also influences life prospects, as its leading indicators, such as income, education, and occupation, are key indicators of social position (Andorka, 1996). In addition to objective indicators, the position of an individual in the hierarchy of social life (subjective well-being) is significant for health (Skrabski et al., 2004), as this ‘position’ influences the methods a person uses to cope with stressors and problems of everyday life (e.g. smoking, alcohol and substance abuse). Socioeconomic status is likely to influence the lifestyle choices of young people (McElroy, 2002) and, through this, the activity profile of the family. According to World and Hendry (1998), the intergenerational repetition of social patterns through parental participation in sports determines the level of activity among young people. Some research suggests that parental behaviour that encourages and supports physical activity is associated with higher levels of physical activity in children (Prochaska et al., 2002; Springer et al., 2006). However, a second pair of authors suggests that children’s inactivity is not associated with this parental pattern. In contrast, however, other studies have found a relationship between parents’ and their children’s inactivity (Leatherdale & Wong, 2008; Csányi, 2010).

## **The actors in the investigation**

The target group of the research consists of students from the two major higher education institutions in the Northern Great Plain region: the University of Debrecen and the University of Nyíregyháza. Students from a given region were admitted to the two institutions from secondary schools with a similar composition, allowing us to well control the social background variables relevant to our study. The study did not include the student population of Szolnok College, which is rooted in the timing of the institution’s integration process into the University of Debrecen. The research was conducted in two waves, and the integration of Szolnok College occurred between the two waves. Since the institution was not included in the first wave of data collection, it was also excluded from the second wave. In the following section, I will describe the common socio-demographic characteristics of the region as the living environment for students studying here.

The Northern Great Plain region includes three counties: Hajdú-Bihar, Jász-Nagykun-Szolnok and Szabolcs-Szatmár-Bereg. It is the second-largest region in the country, accounting for approximately 15% of the national population. The following % ratios well demonstrate the national disadvantages. The region comprises 12% of municipalities, 15% of which are underdeveloped. Additionally, 23% of the municipalities with high unemployment rates are located in this region, and 18% of those with both disadvantages are also found in this region. The differences in the situation of the region’s counties show that just over half of the municipalities in Jász-Nagykun-Szolnok County, 77% in Hajdú-Bihar County and 80% in Szabolcs-Szatmár-Bereg County are in the beneficiary category. A beneficiary municipality is defined as a municipality that is not located in a beneficiary micro-region but is still classified as underdeveloped. One fifth of the municipalities fall into this category. 16% of the region’s inhabitants are in the poorest 10% of the population, and 30% are in the bottom fifth of the poorest. At the same time, only 13% of the region’s population is in the upper-income group.<sup>1</sup>

<sup>1</sup> Strategic Programme for the Northern Great Plain Region 2007-2013

Throughout history, our country has always been characterised by socio-economic territorial segregation, which is still observed today in the country's regions, with a widening gap between the central and peripheral regions. This disconnection is most pronounced in the South Transdanubian region and the North-Eastern region of our country (Süli-Zakar, 2003). At the same time, the parental education of students in secondary schools is lower, making it more difficult for young people to enter higher education (Pusztai, 2005). The North Great Plain region has a significantly higher proportion of young people than the national average; however, its human resources are still underdeveloped. The number of disadvantaged and severely disadvantaged people and the proportion of Roma/Gypsy population in the region is above average (Cserhádi, 2003). Socio-economic backwardness is a multi-level disadvantage in access to higher education. On the one hand, their performance differs; they are dependent on subsidies, characterised by risk aversion, and have less access to information (Haveman & Wolfe, 1995). In this area of the country we are studying, the family background index and the results of the national competence survey are also very low (Figure 2, Kovács K. E., 2020 ).<sup>2</sup>



Figure 2: Family background index of students in secondary schools in Hungary based on the 10th grade of OKM 2016 (N=5393) (Source: OKM 2016, Kovács K. E., 2020)

This is where the proportion of disadvantaged students is the highest (Pusztai et al., 2019). Students living here cannot afford to take self-financed courses due to their parents' low income, and the proximity of higher education institutions is a significant factor in their decisions regarding further education. This choice protects the family from significant financial investment, and first-generation graduates are often hesitant to move away from their familiar environment (Christie, 2007). Access to higher education is closely tied to regional development, with a higher proportion of students from the capital and the western parts of the country enrolling in higher education compared to those from the eastern periphery (Forray & Híves, 2002). Young people from low-status families are significantly less likely to pursue higher education compared to those from higher-status families. Among disadvantaged students, those from more developed sub-regions overcome difficulties stemming from their family background more easily than their counterparts from less developed sub-regions (Pusztai, 2010).

<sup>2</sup> Kovács K. E. (2020). Health and learning in public sports schools. Debrecen.

As discussed above, disadvantages limit the choice of higher education institutions, with higher enrollment rates in institutions closer to home (Denzler & Wolter, 2010). Universities should contribute to catching up with lagging regions by training graduates, which can also increase the competitiveness of the region. Although the eastern part of the country has no shortage of higher education institutions, graduates are moving away, preferring to work in the more economically stable western part of the country (Hegedűs, 2016). Rural colleges and universities have a primarily regional enrollment area, while institutions in the capital have a national catchment area (Kuráth, 2007). The recruitment area of institutions in disadvantaged areas is significantly narrower than that of institutions in more developed areas (Polónyi, 2012).

Between 2010 and 2016, Polónyi (2018) examined the institutional enrolment rates of young people from the most disadvantaged micro-regions in higher education in Hungary. The author finds that nearly one-eighth of the students at the University of Debrecen and the University of Nyíregyháza come from these areas. This group is the most at risk of dropping out. They form the basis of my research. Kozma (2020), analysing Fintor's (2019) work on the topic of everyday physical education, emphasises the dilemma that the official goals of educational institutions in disadvantaged regions differ significantly from the cultural norms of the inhabitants. The ultimate goal would be for the new implementation process to promote civic values within society through the school. In this way, it could uplift children and local societies in disadvantaged regions (Kozma, 2020).

In this context, health-conscious behaviour practised by students living in disadvantaged spatial environments can lead to the accumulation of health capital, and physical and cultural literacy can represent a form of cultural capital, which can also serve as a driving force for social mobility (Fintor, 2019). This is a great responsibility as students, due to their future role as intellectuals, have a model role in society (Szabó, 2012).

## **The theoretical background of the research**

One of the questions in my research is what environmental, social, societal, and individual factors influence the health behaviours (preventive and risk), activity, and inactivity levels of students in the Northern Great Plain. Is there a detectable role of daily physical education in the development of these outcome indicators, or could they be influenced by social background, attitudes towards activity, social networks, family, friends, peer groups, and socialisation agents? Which of these factors could be used to encourage students to adopt an active lifestyle and thus increase their level of health?

For the interpretation, I have used the OECD (2012) Iceberg model as a basis, recoding it according to the specific aspects of the topic. I will also present my interpretation of the levels of practical experience in the implementation process in terms of students' health awareness.

### ***Health Awareness Outcome Model***

The OECD (2012) summary on Equity and Quality in Education highlights that countries are placing increased emphasis on the measurement and evaluation of education systems, including students (Synergies for Better Learning, OECD, 2013). Today, research on the causes of early school leaving and school failure is being conducted at all levels of education, with a focus on developing a

more complex, individual-level research method on early school leaving. Paksi and colleagues (2020), based on their complex model of dropout based on individual, family and school factors, found that students' subjective physical health and their family's more favourable cultural and economic situation, as well as higher expectations and compensation for disadvantage in school, are significantly associated with lower individual dropout risk. It was also pointed out that individual and family background factors have a stronger explanatory power than school factors. Similar results can be seen at the international level. However, while these studies focus more on cultural resources (parental education), the Hungarian complex model (Paksi et al., 2020) also includes a similar role in family poverty. Thus, within the family background, economic and cultural resources separately have a strong impact on achievement, overshadowing other (school) factors. Pusztai and colleagues (2019) also point out in their study that dropouts affect students differently across social and spatial dimensions. The students of the University of Debrecen and the University of Nyíregyháza are primarily young people residing in the most disadvantaged sub-regions of Hungary. This group is particularly vulnerable to dropout. Since the students of the two universities concerned are the basis of my research, I considered it important to review the outline of the so-called "Iceberg Concept" (OECD, 2012) as a summary of the theoretical background of my study. The concept is a model that seeks to identify factors that lead to school failure, aiming to bring together educational, academic, socio-economic, and individual factors that may ultimately contribute to dropout.

In my research, I also examine these explanatory factors, but with the opposite aim, a positive approach based on the model's build-up levels (OECD, 2012, p. 21), precisely to avoid dropout. By interpreting achievement in a non-academic (health-consciousness) domain, I examine the potential role of daily physical education in the development of these achievement indicators. The structure of the model and the interpretation of its influencing factors may help to identify the root causes of the attitudes that emerged during the practical implementation of the implementation process.

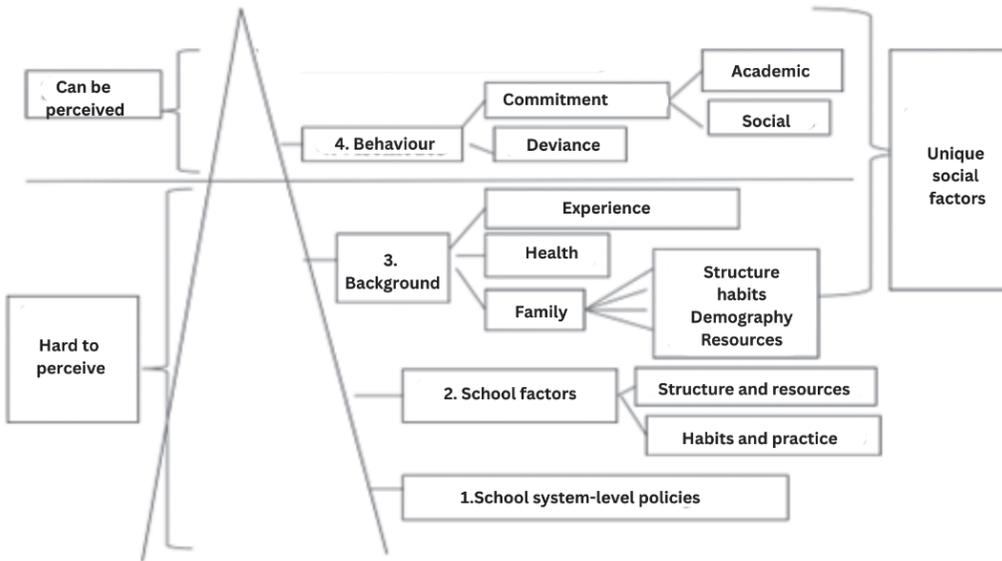


Figure 3. Representation of an iceberg model  
(Source: OECD, 2012 based on own editing)

Dropout, although the result of a longer process, most often occurs at the secondary school level (Csapó et al., 2019). Research shows that dropout from health-conscious behaviours (especially physical activity) peaks after the end of secondary school (Perényi, 2011; Kovács, 2016). There is a significant decline in preventive health behaviour activity levels in young adulthood, as this age period is characterised by significant changes, such as the onset of independent living (Ádám et al., 2018). Although indicators of risk factors increase already in adolescence, the secondary school age can be considered the main period of dropout, as this is when the compulsory nature of public education ends. International and national studies categorise the causes of early school leaving into individual, family, and contextual, as well as school-related factors (Fehérvári et al., 2020; González-Rodríguez et al., 2019). For the latter group of researchers, the areas of physical and mental health are also novel and can be considered relevant to my study. Based on a complex analysis of the phenomenon from sociological, pedagogical, and psychological perspectives (Paksi et al., 2020), the Hungarian research results emphasise the dominance of individual family background as a characteristic of Hungary. Differences by ability are intertwined with the socio-economic background of the student (OECD, 2019; Szemerszki, 2015, 2016). In my research, I am seeking the answer to the question: Considering the combination of individual (family) and contextual (school) factors, which are the relevant explanatory factors in the health behaviour of the student population I am studying? Could daily physical education play a role in achieving this outcome indicator? I have developed a representation of the Iceberg model of the experience of daily physical education based on the OECD 2012 conceptual framework illustrated earlier (Figure 3).

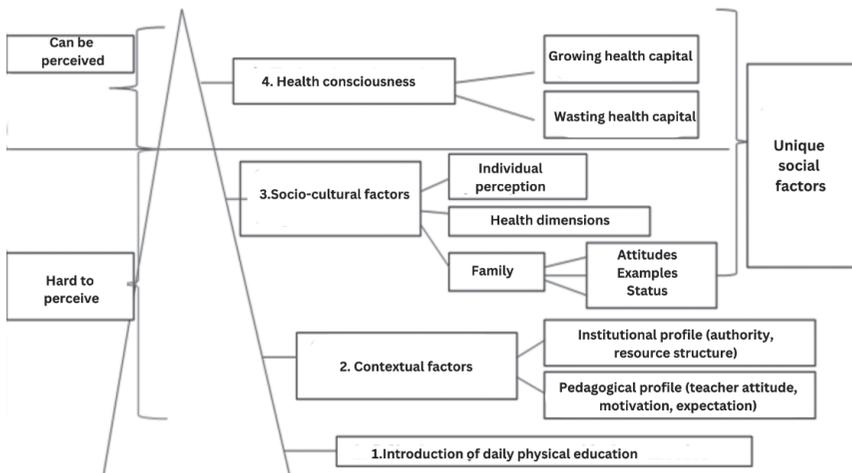


Figure 4: The Iceberg model of daily physical education experiences (Own edition)

The Iceberg model (Figure 4) is divided into two distinct parts. The area below the surface, which is difficult to detect, and the area above the surface, which is detectable and easier to study. **Level 1** of the less observable part is **the policy at the level of the education system** (the implementation process and the **introduction of daily physical education**, which is the basis of my research).

The next, still “invisible”, **level 2** shows **School factors / Contextual institutional factors**. It can be determined by the institutional profile, professional work, atmosphere, and values of

the school environment (Engler, 2014). It can be determined by the actors within the institution in terms of their pedagogical profiles: heads of the institution (leadership style), teachers (pedagogical style), and pupils (peer relations). At this level, the activity of the time spent in school could be centrally controlled, even beyond the physical education lessons. Research has been carried out on attempts to change school habits. In the US, for example, standing school desks have been trialled to reduce the amount of hypoactive time spent in class (Benden et al., 2011). The results showed that young people who participated improved their cognitive abilities and burned 15 per cent more calories than their sedentary peers. In many countries in Europe, programmes are in place to make recommendations to institutions by assessing students' activity, nutrition and health levels. Grossman's (1972) theory of health capital highlights the role of schooling in accumulating health capital.

**The 3rd level, the Background/Individual Factors level** (family, peer groups, health, previous experiences), which is the first group of individual social factors, has been investigated by several studies as a role of external factors and environment (Forray & Juhász, 2009) in influencing academic achievement. Studies on health awareness (Pikó et al., 2013) have also shown that socialisation segments and societal norms have an impact on an individual's attitudes and achievements. International research, as well as the results of the OMC, show that the socio-economic background of the family and the cultural capital brought by the student from home strongly influence academic performance (Szemerszki, 2015). According to Bandura's social cognitive theory (1989), individuals are influenced by their internal drives and external circumstances (family, friends, teachers, or even a dominant life event or experience), all of which contribute to the individual's behaviour (Kovács, 2015).

This theory brings us to the "surface", the **4th level of Behaviour/Health Awareness**, which also reinforces the individual social factors but is now in the perceptible (observable) domain. This includes the attitudes of students, which, if positive towards values, can lead to the accumulation of health capital as an indicator of their commitment to health awareness, or, on the contrary, in the case of negative attitudes, can even lead to the development of deviant behaviour and the waste of health capital.

The analysis of the model was also previously applied by Bocsi and colleagues (2018) in a qualitative study of student-teacher dropout.

The relevance of my research lies in the fact that, from a different perspective, it raises a new question: can the new implementation process at the level of the educational system, i.e. daily physical education, be an influencing factor for health awareness as a non-study outcome?

To clarify the issues, I have examined several theories about the four explanatory factors of the aforementioned Iceberg concept. The first is Grossman's (1972) theory of health capital, and the second is Bourdieu's (1991, 2008) theory of capital, in line with which I looked at the role of objective factors (parents' education, financial situation, place of residence). The theoretical framework also included Bandura's (1989) theory of social learning, which argues that the roles of the immediate family, friends, and the school environment become decisive. I have tried to place all these theories within the framework of health culture as a process of socialisation.

In addition to the theoretical complexity of the analysis and the presentation of the student's health behaviour and sports activity habits, the study is also characterised by the disadvantaged geographical area where the research was conducted.

## Capital theories on quality of life

The joint UN-OECD-Eurostat experts (2009) approach social development from the perspective of the *capital base* available, distinguishing between economic, natural, human, and social capital. In Hungary, Kopp and Martos concluded from their studies that mental health is the foundation for a positive quality of life, in line with the World Health Organisation's 2010 definition of health. In addition, they consider the acquisition of a sense of 'resource richness', which can be learned from early childhood, as a fundamental prerequisite (Kopp & Martos, 2011). Based on these contexts, it can be said that sport cannot be independent of the global societal situation, including its health and fitness, since the health of society can be measured by the processes that culturally influence its structure (Fromm, 2010). After these literature reviews, I considered it important to examine the role of capital theories within the theoretical framework of the research.

In terms of types of capital, the *theory of health capital* should be highlighted. In 1961, Schultz had already emphasised the importance of health status alongside learning, arguing that these two fundamental factors of human capital significantly influence an individual's economic resources. The basic idea of Grossman's (1972, 1999, 2004) theory of health capital is that the individual is both a producer and a consumer of his health. In this model, health is considered a form of capital. An individual starts life with a unique health capital, which can either be increased or squandered throughout life. Increasing educational attainment and preventive health behaviour can be seen as investments in health capital. Risky behaviours (e.g. smoking, alcohol consumption, substance abuse, etc.) can be seen as a waste of capital. In everyday life and the labour market, investment in health pays off, and the resulting benefits can be recycled into health and other assets. However, this health capital is continuously amortised as we age, and the birth capital level is permanently exhausted with death. A better quality of life and longer life expectancy will result from the prudent investment of capital, thereby avoiding capital wastage. Health can also be understood as a consumption good, as a lack of health can be associated with negative feelings, while good health is a pleasure in itself; thus, health itself is a demand good. A healthy person can achieve higher work performance, and thus earn a higher income, and thus finance a higher level of consumption (since good health is also necessary to enjoy leisure activities) than a sick person. Investing in health capital is primarily an investment of time, as the individual dedicates their time to maintaining their health rather than engaging in activities that are of no use to them. In addition, if the individual invests in physically active leisure, a healthier environment, and higher education, it can also be viewed as an investment. This investment involves allocating resources or sacrificing them in other areas of life. Individuals have to choose between money-making activities and health (leisure time) and between a healthy lifestyle and consumption that is detrimental to health (e.g. cigarettes, alcohol, fatty foods) or passive entertainment that is not conducive to health (e.g. media consumption, internet). Some of these choices are made by individuals who assess the risks, but others are not conscious, as the outcome of almost all health choices is unpredictable. On the one hand, individuals cannot accurately assess their current health status or genetic predisposition. On the other hand, time, as a factor, can increase uncertainty, as decisions made in the present moment can usually only be evaluated in the long term. Several researchers have tested the

Grossman model. According to Wagstaff, the relationship between age and health demand is significant only for older people (over 41 years) (Wallston et al., 1976). In a study by Gerdham et al. (1999), health demand decreased significantly with increasing age and health expenditure, while education income and increased income were associated with a significant increase in health demand. In our study, we paid particular attention to individual and socio-environmental resources for health maintenance. Through the health capital model, we tried to explore the influencing power of “hereditary health capital” (parental influences), forms of investment in health such as the role of participation in daily physical education in students’ preventive health behaviour (money, time, energy spent on sports), and students’ risk-taking behaviour and the extent of capital wastage.

In addition to health capital theory, *Bourdieu’s theory of capital* should be emphasised. Bourdieu (1999) distinguishes between the cultural, economic and social forms of capital. According to his theory, the amount of cultural and economic capital is a fundamental determinant of people’s leisure habits at different levels of society, and those who possess these assets can enjoy a range of sporting opportunities that not everyone can afford. According to Bourdieu, one’s position in the social hierarchy primarily determines how people spend their leisure time. According to Bourdieu, three main factors determine leisure and sporting habits: the time available for leisure, economic capital and cultural capital. According to Bourdieu, the possession of cultural capital is a factor that is both determined and transmitted through social inequalities. In Bourdieu’s formulation, the sum of the experiences of social hierarchy and the prior attitudes, values and expectations formed in the process of everyday life (family upbringing), which are by the objective circumstances of the individual (Pusztai, 2015b; Kovács K., 2015a). In my research, I considered it important to analyse whether the economic and cultural capital of university students limits their health behaviour, physical activity and attitudes towards sport.

These two theories also highlight the fact that health behaviour and physical activity attitudes are influenced by social factors (Sallis et al., 1993), a concept also emphasised by social learning theory. It emphasises the role of monitoring attitudes, behaviour and emotional reactions. *Bandura’s social learning theory* also plays a significant role in understanding individual and social processes. The theory (1989) analyses individual behaviour as a reciprocal relationship between perception, behaviour and environmental influences. The learning process itself can be achieved by following role models. These roles are most often played by parents or closest friends (Symons Downs - Hausenblas, 2005). The behaviour and attitudes of those who are seen as role models represent value systems that are crucial for young people (Bandura, 1989). Social influences include not only the motivations of parents but also those of teachers and coaches (Smith, 2003). The family is also considered the primary socialisation environment for sporting activities, where, through social learning, the young person adopts the behaviours and attitudes experienced by parents or other relatives by imitation. In family communities where sport and physical activity are popular, i.e., where a sporting environment (Hradil, 1995) prevails, it is a safe environment for developing a positive attitude towards an active lifestyle in children. Of course, the opposite can also be decisive. When the family is an inactive role model, the initial health capital brought to the child from the family is also low. In addition to the sporting milieu, the socio-economic status of the family also influences and limits the level of interest a young person has in sports. The family, followed by educational institutions at various levels, friends,

and the media, play a crucial role in the development and subsequent maintenance of this health-conscious interest in physical activity (Földesiné Szabó et al., 2010).

In addition to their role in physical activity, social influences also affect different aspects of health behaviour. For example, the role of peer effects is important in the study of both risk behaviours (smoking, alcohol and drug use) and preventive health behaviours. Research has shown that peer influences and socio-cultural background affect not only young people's physical activity (Baker et al., 2000; Buckworth, 2000; Huszár & Bognár, 2006; Humpel et al., 2002) but also their health behaviour (Pikó, 2002) (Hartmann, 2008; Castelli et al., 2007).

According to Giddens (1976), the exercise of chosen behaviours is constrained by economic, social and cultural circumstances. Health behaviours can be interpreted as part of a culture of health, encompassing the opinions, expectations, and values associated with health and the social environment.

Health-conscious behaviour and *health culture* can be understood as an end product of the capital and knowledge acquired from family and close environment. As Segall et al. (1990, p. 5) have noted, 'it is rarely (or perhaps never) the case that one's behaviour does not respond to some aspect of culture'. Socialisation cannot be understood without taking into account the historical, social, and cultural context surrounding young people, and behaviour can only manifest itself as development within this context (Ogbu, 1990). *Health culture* can be described as part of a universal culture. It encompasses activities and knowledge that enable individuals to maintain or restore their health and prevent disease. Through a culturally healthy lifestyle, individuals can maintain, restore, or even improve their health, and health has a significant impact on lifestyle, the two being inseparable (Matlákné, 2010). Cultural background has a significant influence on various aspects of people's lives, including their diet, health habits, and exercise habits. The culture into which one is born is not the only influencing factor. It is not the only influencing component:

- the individual (individual factors, attitudes, motivation),
- educational factors (socialisation environment),
- socio-economic components (economic status, social class, leisure activities)
- environmental factors (population density, infrastructure, quality of housing)

The context of culture, including the culture of health, is composed of historical, social, economic, political, and additional geographical elements, which is why it is impossible to separate the culture of health from the social and economic context in which an individual's everyday life takes place. Cultural characteristics can be transmitted through imitation and learning, which is a system of learned knowledge, values and behaviours adopted by members of a group. The "cultural codes" represented by parents are imprints of the opportunities of their historically determined social and economic environment (LeVine, 1971).

Cultural changes in health promotion can help create a balance between social and individual goals, promoting social cohesion. This research explores the potential role of daily physical education (as a process of health culture change) in the development of non-study achievement indicators of students in the North Lowlands, as the social context is defined by culture, where preventive health behaviours are the norm and where the social, physical and institutional environment supports positive health behaviours (Davies et al., 2014).



# **The socio-economic impact of health awareness**

Kovács and Szigeti (2017) interpret health as a kind of equilibrium. In this context, health is considered a subjective sense of well-being or illness, which influences lifestyle and behaviour, and its components include fitness, well-being, and performance.

## **Health behaviour in the light of theoretical models**

The concept of health behaviour has changed a lot since then. Baum and colleagues (1997) considered the role of attitude, while Harris and Guten (1979) theorised that behaviour was the determinant. The latter formulation is a mixture of the former, according to which health behaviour can be understood as ‘the set of behaviours and attitudes that play a role in maintaining, impairing or restoring an individual’s health, regardless of whether these behaviours are consciously directed towards health’ (Tényi & Sümegi, 1997 cited in Kovács & Szigeti, 2017, p. 17). Several theories address the factors that determine health in society. Hídvégi and Bíró (2015) divided these determinants into two broad groups. According to the authors, the factors influencing health can be divided into external and internal levels. External factors encompass environmental and social influences, whereas internal factors are more closely tied to the individual (e.g., family, lifestyle, genetics, etc.).

Among the health determinant theories, we should also mention the layered theoretical model of Dahlgren and Whitehead (1991). The model is interpreted at five levels, ranging from external to environmental influences to individual factors. Genetic factors are at the centre, and then, as we move outwards, lifestyle (with regular exercise and healthy eating), the role of social communities, living conditions and the social environment that permeates them, all of which influence health behaviour.

The determinants of health illustrated above can only be examined as a coherent system (Kovács & Szigeti, 2017, p. 49; Huszka & Lukács, 2014). Health behaviour is a complex network, of which physical activity, conscious nutrition, mental health, and hygiene can be interpreted as the basis, and not to be neglected, is the avoidance of harmful addictions, as well as the norms and values of the family, its strength. We should also mention the social and cultural factors that influence material and social circumstances, as well as socio-economic status, as external factors. These factors also influence an individual’s leisure activities, nutrition (Bourdieu, 1980) and the level of health services available to him/her. In addition to the family, institutional education and training play a significant role in helping to achieve health promotion goals through sport (Bognár et al., 2005).

My research touches on, but does not fully cover, the subject. Therefore, I will treat the characteristics and values related to health behaviour as health-related outcomes.

## **Research into health behaviour**

A paradox exists in contemporary Hungarian society. We are aware of what we should do for our health and an active lifestyle, yet the proportion of cigarette smokers and regular alcohol drinkers is high. In contrast, the proportion of people who are regularly active in our country is low (Bárdor & Kraiciné, 2018).

Research has shown that even one health risk factor can attract other various adverse factors (Hodder et al., 2018). It has also been shown that as risky health behaviours come to the fore, preventive behaviours (e.g. physical activity, healthy eating) take a back seat. They also show that reinforcing positive health behaviours from an early age is essential to increase the likelihood of healthier adult life. When considering the role of daily physical education, it is essential to begin from a public education perspective. Barnett et al. (2008) also confirm that the values instilled in childhood have a significant impact on adult behaviour. Fritz (2009) also confirms that good health behaviour is characterised by habits that are formed in the early stages of life. A problem is that physical activity levels decline steadily during the school years (Cocca et al., 2014). In addition to the above, several studies have demonstrated a link between children's physical activity and their later health (Sallis et al., 2000; Karsai et al., 2013).

HBSC surveys cover various areas of health behaviour (Aszmann, 2003; Németh & Költő, 2014), including dietary habits, weight control, regularity, intensity, and amount of physical activity, as well as inactive leisure activities, harmful behaviours (such as smoking, alcohol, and drug use), and sexual behaviour.

The ESPAD (European School Survey Project on Alcohol and other Drugs) studies, which Hungary joined in 1995, examine risk behaviours (smoking, alcohol and drug use) (Elekes, 2009). Data on the risk behaviours of students in grades 8-10 are collected every four years, with an international perspective, to track changes at the European level.

### ***Research findings on preventive, health-promoting behaviour***

*Nutrition* plays a crucial role in both ideal bio-psycho-social development and the development of healthy adult lifestyles (Mathieson & Koller, 2006). In most developed countries, over-nutrition is a problem related to nutrition, while in poorer countries, malnutrition is a significant issue. In the case of the former, there is a higher-than-desired energy intake and the consumption of high-calorie foods, which leads to a fight against the development of overweight and the adoption of various dietary methods (Farkas & Rácz, 2016). In terms of *healthy eating*, the results of the 2016 Hungarian Youth Survey show that, compared to 2012, the daily consumption of pleasure articles is higher among young people. The consumption of coffee and sugary soft drinks increased by approximately 15%, while energy drinks increased by 7%. Three-quarters of 15-29-year-olds eat a cooked meal every day, and 38% of them include fruit or vegetables in their diet (Adam et al., 2018). Only a few per cent of people eat fast food every day. One-fifth of respondents take some vitamin supplement daily, and nearly 10% take nutritional supplements or medicines every day.

The benefits of regular physical activity during the school-age years are not only felt later in life but also in adolescence, with positive effects on health, physical, mental, and social well-being (Biddle et al., 2009; Donaldson & Ronan, 2006). Physical inactivity, on the other hand, increases the risk of cardiovascular disease, diabetes and obesity (Strong et al., 2005a; Nelson et al., 2006).

According to the 2016 Hungarian Youth Survey, 36% of respondents participate in sports outside of school physical education classes. Looking at the period from 2000 to 2016, the decline in this area had stopped by 2016. Unfortunately, there is still no sign of an increase. Physical activity is the key factor in our analysis and will be discussed in more detail later in the discussion of the relevant correlations.

### ***Research findings on health (risk) behaviour***

The prevalence of alcohol consumption among young people in Europe is still very high. The highest rates (93%) were measured in three countries: the Czech Republic, Greece and Hungary (ESPAD, 2015). According to the Hungarian Youth Survey 2016, the proportion of young people who hardly ever drink alcohol has decreased by 6%, and the proportion who drink regularly every week has decreased by 2%. This implies an increase in the ‘middle’, i.e. the proportion of those who drink alcohol monthly or less frequently. There is still a significant difference between the two sexes in terms of alcohol consumption. More than 60% of girls rarely or never drink alcohol, while for boys, the proportion is below 40%. However, the number of people in both groups who drink alcohol every month has increased.

In 2015, the proportion of boys (47%) and girls (44%) in European countries who tried *smoking* was almost equal. Between 2002 and 2010, smoking rates decreased in all European countries surveyed. The Czech Republic has the highest smoking prevalence (66%), followed by Lithuania (65%), then Croatia and Slovakia (both 62%). The lowest rates are in Iceland (16%), Norway (28%) and Malta (29%). Hungary’s rate is 55%, putting it more in the middle of the pack (ESPAD 2015). There are significant differences in *smoking* habits between genders. According to Hungarian Youth, 17% of girls/women smoke daily, and 65% of those do not smoke at all. For boys and men, the figures are 31% and 48%, respectively.

For *drug use* in the United States, it was shown in 2010 that adolescents whose parents had higher family incomes and educational attainment had higher rates of substance use, particularly heavy drinking and drug use, than young people from more modest backgrounds (Humensky, 2010). In contrast, other studies have found the opposite of the former claim, that the higher social level of the family is a protecting factor against substance use (Lemstra et al., 2008). In the age group surveyed by Hungarian Youth 2016, 40% of those who report having tried drugs in their environment are of the same age. About a third of young people say it would be relatively easy to get drugs, a quarter say it would be rather difficult,

The health risk factors presented here often do not go it alone. This is particularly true for smoking and alcohol (Németh & Költő, 2011). The MIK 2016 also finds that 41% of young people use both substances if they have tried either.

Health-risk behaviour is the avoidance of and commitment to behaviours that are harmful to health, involving choice and action and resulting in the behaviour itself. Among the factors that influence health behaviour and health risk behaviour, family, peers, and school are the most important.

### ***The relationship between health behaviour and socio-economic background***

Studies among adults have shown that lower socio-economic ‘position’ is associated with more negative health outcomes (e.g. Adler et al., 1994). These findings also apply to young people (Goodman et al., 2003). Longitudinal studies have demonstrated that parental socioe-

conomic background has a lasting and detectable impact on the psychological adjustment and health of individuals from birth to adulthood (Schoon et al., 2003). Among Hungarian youth, Pikó and Fitzpatrick (2007) found a relationship between subjective socio-economic position and psychological health. Young people from disadvantaged social backgrounds are more likely to develop mental health problems than those from higher social backgrounds (Reiss, 2013). A low socio-economic position is also associated with patterns of risky health behaviours (e.g., less fruit and vegetable consumption, skipping breakfast, inactivity). However, there is also evidence to the contrary. For instance, in Central and Eastern European countries, consumption of sugary drinks is higher among young people from higher-income groups (Currie et al., 2012). Research on harmful health behaviours (e.g. smoking, alcohol consumption) shows a mixed picture. For example, in the case of recurrent adolescent binge drinking, the socio-economic background of the family shows only a small effect (Richter et al., 2006). The picture is also mixed in the ESPAD research (Elekes, 2009). While smoking is typical for the disadvantaged, no such relationship is seen between alcohol and drug consumption, except for extreme drinking. This factor is more likely to be observed for students from disadvantaged socio-economic backgrounds. Low socio-economic status can also be a barrier to academic achievement (McLoyd, 1998), which is likely due to differences in opportunities available at various levels of the economic and social hierarchy (Coleman, 1988). Families from low socio-economic backgrounds have higher stress factors (Finkelstein et al., 2007) and often live in poor physical environments (Evens, 2004). Various forms of peer support can modify these adverse effects; for example, help from extended family can reduce the impact of adverse financial circumstances (Taylor et al., 2014). In addition to the social safety net, specific components of an individual's personality (optimism, self-control, etc.) can also help to cope with stress (Chen et al., 2013).

Several studies have examined sport as a non-study outcome. A person who is active in sports is health-effective because they take action to increase their health capital, and thus, physical activity can be conceptualised as an achievement factor (Pusztai, 2004; Kovács et al., 2016). From this point of view, health-conscious living can also be described as a non-study outcome, as a student who eats healthily, is physically active, abstains from risky behaviours (alcohol, smoking, illegal substances), has a responsible sex life, and uses positive stress management can be considered an outcome in terms of health-consciousness.

## **Characteristics of physical activity and sporting activity**

### ***The concepts of physical activity and sport***

In our study, we aim to examine the entire spectrum of physical activity; however, we must define the concepts of physical activity and sporting activity, as sporting activity can only be described as a subset of the broader physical activity (Csányi, 2010). We consider gardening and cleaning as physical activities, but we do not consider them as sports activities. In our study, we did not include the proportion of university students participating in technical sports or e-sports. According to the World Health Organisation (WHO), "physical activity is defined as any bodily movement produced by skeletal muscles that results in energy expenditure" (Carpenter et al., 1985, p. 126). Sports activity is included in this conceptual framework and the

definitions that have been developed to define it share the commonality that, in addition to the physical roles associated with physical activity, they also emphasise its role in mental well-being and articulate its social values. The European Charter of Sport (1997) defines sport as “any physical activity, whether performed occasionally or in an organised form, intended to develop or improve physical and mental fitness, to create social contact or to achieve results in competition at various levels.” (European Charter of Sport and Code of Ethics for Sport 2001, p. 6). The White Paper on Sport (2007): “Physical activity is any form of physical activity which, through occasional or regular practice, aims to express or develop physical fitness and mental well-being, to establish social relationships or to achieve competitive results at all levels.” The concepts used in various areas of sport demonstrate diversity. As sport is understood as an interdisciplinary discipline, its divisions can be classified according to different approaches. According to the current Sports Act, we distinguish between “competitive sports, youth education, student and college-university sports, sports for the disabled and recreational sports” (Sports Act, 2004). The formulation of sport, in my interpretation (based on the research), is an activity undertaken on one’s initiative for recreational or competitive purposes during leisure time.

### ***Physical activity and sports activity test results***

Physical activity and its quantification are important for the European Union, which is why a survey is carried out every four years to assess the physical activity and sporting status of the Member States. The scale of the surveys differs: the Eurobarometer (EC) asks about the weekly frequency of physical activity, while the European Health Interview Survey (Eurostat) asks about the weekly frequency of physical activity. The Eurobarometer Sport and Physical Activity Survey in 2009, 2013, and 2017 looked at the sporting characteristics of Europeans, classifying individuals into four levels according to the frequency of sporting activity:

- regular exercisers (at least five times a week),
- mostly regular sportsmen (1-2 or 3-4 sessions per week),
- sometimes athletes (1-3 times a month or less often),
- not athletes at all (never).

In all three measures (Finland, Sweden, Denmark), the three Nordic countries were at the top of the list, with scores ranging from 63% to 72%. The countries of Central and Eastern Europe rank at the bottom.

Political and historical factors also explain the low level of sporting activity in Central and Eastern European countries, as sport played a crucial role in the socialist regime following the Second World War. These post-socialist states, representatives of the Eastern Bloc (Hungary, Poland, Slovakia, the Czech Republic, Bulgaria, and Romania), share a common history and economic and social policy background, where sport was the most effective form of advocacy. Under the communist regime, the privilege of elite sport was dominant. As a result, health-promoting recreational sports were relegated to the background. In the history of sport, the Soviet-style centralised state sports policy viewed successful sporting achievements as a means of justifying the system (Frenkl, 1997). The role model of the elite athlete conveyed the political ideology, and a career in sport was a major outlet for assertiveness. Elite athletes had access to privileged opportunities that were unavailable to others (e.g. existence, travel, housing). In addition, leisure opportunities were limited and financial support was directed towards elite sports, thus marginalising leisure sports in socialist systems. The primary task of student sport

was also to select talent and to train young people so that the opportunity for health-preserving activity was confined to school physical education. The structural legacy outlined above can still be felt today in the societies of the Eastern Bloc countries.

According to 2013 statistics, Hungary showed the most significant increase in the proportion of athletes in Europe compared to 2009, with a 15% increase. The number of people who do no sport at all has decreased by 9%, but 44% of Hungarians do no physical activity. The increase in the propensity to exercise in Hungary in 2013 is overshadowed by the 2017 figure of only 33% and by the results of Eurostat's Physical Activity Outcomes Survey, also in 2017.

*Table 2: Results on sport and physical activity levels in Hungary (Source: EC (2010, 2014, 2018) and Eurostat (2014, 2019) own editing)*

Exercise frequency 2009		Exercise frequency 2013		Physical activity 2014		Exercise frequency 2017		Physical activity 2017	
Eurobarometer EC (2010)		Eurobarometer EC (2014)		Eurostat (2014)		Eurobarometer EC (2018)		Eurostat (2019)	
min. 5 times a week	5%	min. 5 times a week	15%	min. 300 min- utes/ week	16.8%	min. 5 times a week	9%	min. 300 min- utes/ week	17.9%
1-2 / 3-4 times a week	18%	1-2 / 3-4 times a week	23%	150- 299 min- utes/ week	11.8%	1-2 / 3-4 times a week	24%	150- 299 min- utes/ week	11.5%
1-3 times per month/ less fre- quent- ly	24%	1-3 times a month /less often	18%	1-149 min- utes/ week	27.9%	1-3 times per month/ less fre- quent- ly	14%	1-149 min- utes/ week	19.2%
never	53%	never	44%	0 min- utes/ week	43.4%	never	53%	0 min- utes/ week	51.4%

Eurobarometer (EC) and Eurostat results show similar figures for the proportion of physically inactive people in 2014 (around 44%) and 2017 (around 52%). There has been no improvement in this respect, despite the introduction of several social and economic policy measures in Hungary aimed at promoting sporting activity. In 2010, the sports sector was declared a strategic sector (Sárközy, 2013). In 2011, a corporate tax law amendment was enacted to support five spectator team sports (Vörös, 2012), thereby creating the theoretical possibility of shifting the starting point of community sports funding towards community sports and provi-

ding substantial financial resources for facility development (Gécsi & Bardóczy, 2017, 2019). In 2012, daily physical education was introduced uniquely in Europe (Fintor, 2016; Urbinné, 2018; Moravec, 2019), but as the Eurobarometer survey only measures the population aged 15 years and over, the data cannot directly reflect the impact of the new implementation process. It is essential to note that these measures, in principle, can promote positive change; however, further research is necessary to analyse the mechanism of impact in practice. It should be emphasised that the present research does not aim to assess the impact of the measures, as the established database does not provide a basis for monitoring change processes or establishing causal links. It aims to assess the role of a process of change in educational policy (daily physical education) beyond public education (compulsory) within the framework of higher education (autonomous).

## **The socio-economic relationship between health and physical activity**

Several studies have investigated the beneficial effects of regular physical activity on the cardiovascular system (Gero et al., 2018), obesity, and the prevention of osteoporosis (Beck et al., 2016). Macro-level studies of the health effects of sports analyse the relationship between physical activity and life expectancy. According to Reimers et al. (2012), there is evidence that people who exercise regularly live on average 2-4 years longer. Moore et al. (2012) found that physical activity can increase life expectancy by 1.8 to 7.2 years. Wen et al. (2011) found that life expectancy can increase by 3.67 years for women and 4.21 years for men as a result of regular, vigorous physical activity. Several studies have explored areas of sport beyond physical health, including its impact on mental health (Chelladurai & Anderson, 2016; Heesch et al., 2011). These studies highlight the effects on self-confidence and self-esteem of individuals who engage in physical activity, as well as the role of social relationships that are formed when participating in sports. Researchers have found that people who are more physically active are more confident, have higher self-esteem (Mistretta et al., 2017), better academic performance (Van Dusen et al., 2011), higher levels of emotional intelligence (Gáspár et al., 2017) and less depression than inactive people (Wiles et al., 2012). In recent years, chronic, non-infectious diseases have become increasingly common. Almost without exception, these can be linked to inactivity and negative lifestyle habits, such as risky behaviours (e.g., alcohol consumption and smoking). According to the World Health Organisation (WHO), 52% of global mortality is attributed to lifestyle-related inefficiencies (Meier et al., 2018).

The results of a follow-up study of Hungarian residents, known as the Hungarostudy, also show the positive impact of exercise on life expectancy. Men who do not exercise are three times more likely to die prematurely than men who exercise regularly. This is more pronounced for women: women who exercise are more than four times more likely to 'survive' (Kopp & Skrabski, 2009). According to the KSH (2015) rapid report, four-fifths of the Hungarian population aged 15 and over, men and women in almost equal proportions, considered that individual awareness plays a crucial role in maintaining health. However, there are significant differences in educational attainment: 66% of those with up to eight years of schooling and 93% of those with tertiary education said they could do a lot to improve their health. By age group, over 90% of young people aged 18-34 believed they could significantly improve their

health. Among middle-aged people aged 35-64, 80% reported this, while only 65% of older people aged 65 and over reported the same.

Among the determinants of health, genetic characteristics, external factors, lifestyle, social environment and healthcare-related factors are highlighted (Pikó, 2008). In a Hungarian empirical study (Piskóti et al., 2012), the role of the environment is also highlighted. The study was conducted among individuals aged 18 years and above. The survey investigated the extent to which people consider themselves responsible for their own life and their quality of life. According to health-conscious behavioural models, individuals have a decisive role in shaping their health. According to the results of the national empirical survey, nearly 80% of respondents consider it their responsibility to maintain their health quality. The question is: if this is indeed their view, what are they doing about it? The statistical data indicate that certain factors have little or no impact on health status, while the effect of other factors is significant. Individuals perceive their responsibility for these to be of minor importance, even though we believe that the environment has a significant impact on an individual's health awareness and health status. However, the extent of this responsibility is not sufficiently understood by individuals or environmental actors. Health awareness is essential for improving the health of individuals and society. This means that health awareness and action must be present at both the individual and the surrounding environmental levels.

Domestic values have improved significantly compared to previous years, but they are still below the EU average. Importantly, according to the 2015 data from the Hungarian Central Statistical Office (KSH), there has been a positive shift in the health attitudes of people aged 15 years and older (Vitrai et al., 2015). There is a clear improvement in the country's health attitudes indicators, but we still score worse than the Western European average. According to Ács and Kovács (2015), the proportion of inactive people has declined, but according to Eurobarometer data for 2018, more than half of Hungarians do not engage in any physical activity.

In the context of this complex (macro-level) problem, the role of physical activity in socio-economic development is of crucial importance for health status.

It should be emphasised that the health status of individuals is, of course, influenced by many factors beyond physical activity, just as the development of society and the economy is shaped by complex mechanisms of action, not merely by the health status of human capital.

Today, more and more research is also emphasising the role of human capital and health as a productive factor in economic growth and social development. Our health status interacts with social and economic processes (Egri, 2015; Barro, 2013). A key element of the back-and-forth relationship is the complex interplay between society, the economy, and the environment on the health status of individuals. At the same time, health status as a factor of production in its own right also has a broad impact on the development of society and the economy. This approach, which defines health as a key element, has only recently emerged in academic research explaining economic growth.

Human capital has been described in the literature as the most important asset of an organisation (Karoliny-Poór, 2010). An individual can utilise their health to produce various goods (Ács & Kovács, 2015). According to Nefiodow & Nefiodow (2004), it is also beneficial to engage in more sports in our leisure time, as a healthy person, both physically and mentally, will be a guarantee for future development. It is also in the employer's interest to see a positive change in the employee's life in the following areas (Lechner, 2009):

- increase the number of days spent at work
- ensuring a physical and mental balance
- increasing the number of years of active working life

By maintaining regular levels of physical activity, positive changes can be seen in these areas.

Health status as a qualitative indicator of human capital was examined by Barro (2013). The results of his research showed that health is a greater explanatory factor than education in human capital. Since inactive lifestyles have a significant impact on the national economy (Ács et al., 2011), several studies have investigated the relationship between life expectancy and economic growth in terms of health (Ács et al., 2016; Gabnai et al., 2019).

From a pedagogical perspective, a crucial question is how the aspects of physical activity (sport), education, and society are interrelated. An important aspect of analysing these interrelationships is the socialisation and social factors that influence physical activity and the role of sports in shaping socialisation, which is a determining factor in an individual's and community's life.

### ***Physical activity and sport in relation to education and social science***

In the next section, I will focus on the educational and social context of sports and physical activity. The importance of this topic is crucial and inevitable for maintaining and developing health. It is interrelated with different social subsystems and has an impact on society as a whole (Földesiné et al., 2010). The most prominent link is with health, as numerous studies have demonstrated the importance of regular physical activity for physical health, with a positive impact on mental, psychological, and social well-being, as well as subjective well-being.

The role of physical activity and sport in maintaining health makes it necessary to ask who and why it is necessary to make sport a key part of our everyday lives. According to the literature, societal motivation ranges widely (Adam et al., 2018). It may depend on social status, age and environment (Butt et al., 2011). In addition to these, family and friends play a huge role in the development of a health-conscious attitude (Atkin et al., 2015). All these actors play a role in shaping sport socialisation.

Sport socialisation can be adequate if it starts as early as possible. Bourdieu (2008) theorises that sports socialisation is determined by the family and its social, cultural and economic context. Families with poor financial circumstances and modest social status are characterised by lower physical activity. This is strongly influenced by the habitus towards sports of their narrower social background (family, friends, peers, school) (Pot et al., 2016). Bourdieu (1991) also argues that the type and amount of sports people participate in during their free time depend to a large extent on their position in the social hierarchy. This hierarchy depends on capital, which is the sum of resources (social, economic, cultural) that individuals acquire through social relations (Wiltshire et al., 2016). It is this hierarchical position, the habitus of a particular social class, that most determines leisure sporting behaviour. According to Bourdieu (1984), the formation of a sport habitus is, in fact, the incorporation of an individual form of cultural capital, the sport capital. Participating in sports can lead to an increase in both cultural and social capital; however, a lack of economic and cultural capital can also result in exclusion from sports and lower social capital. Involvement in sports communities can also contribute to the development of new contacts and, thus, to an increase in social capital. According to Coleman (1961), the achievements of members of school sports clubs are highly valued by staff and peers, and their social capital increases through closer contact with peers and teachers, which can also contribute to improved academic performance. At the same time, if the time spent on sports comes at the expense of study, this creates a 'zero-sum', as sports activities take time and energy away from learning (Kovács, 2019).

## ***Previous research on the relationship between social background and sporting behaviour***

According to the 2003 National Occupational Health Survey (OLEF), the activity of both men and women is related to the size of the settlement and age. Women are likely to be more health-conscious and thus more physically active if they are financially better off (Nédó & Paulik, 2012).

According to Perényi (2011), the results of the Youth 2000-2008 research show that social status (educational attainment, gender, economic status, student status, type of settlement) has a strong influence on young people's sporting opportunities. The type of municipality and student status are significant for students, as they have the best opportunities for regular sporting activities in terms of infrastructure (Fábri, 2002). The more informal schedule of student status and student benefits may lead to an increase in sporting activity, whereas employment is associated with a decrease in sporting activity (Fábri, 2002). These findings highlight the role of higher education institutions in encouraging students to participate in sports in an organised manner and, if this becomes a regular practice, to continue doing so throughout their lives.

Previous research findings (Keresztes et al., 2006; Sallis et al., 2000) point to gender differences in sports (women participate less than men). The role of different socialisation is mainly responsible for this. A study from Australia reveals that rural women continue to perceive sport as a masculine pastime. This is supported by the statistically proven low female activity rates (Lee & Macdonald, 2008). Different motivations may also play a role: while women tend to exercise for aesthetic and health reasons, winning and competition are more important motivations for boys (Keresztes et al., 2006). Neulinger's (2009) study of university students also focused on gender differences. While women are motivated by mental refreshment and health, men are motivated by recreation and fun. The influence of family and parental socio-economic status on young people's sporting behaviour is less clear, as the literature also shows that it is not determined by family background (Mota & Silva, 1999). In contrast, a follow-up study by Yang and colleagues (1996) found a weak association between a child's physical activity and the father's educational attainment and social status.

Sallis and colleagues (2000) quantitatively analysed the results of a study on young people's sporting behaviour and found that young people's physical activity was not related to socio-economic status. In contrast, studies in Hungary have shown the role of social status in sporting activities. Research in the Southern Great Plain indicates that young people from lower socioeconomic backgrounds are more likely to exercise than those from lower-middle-class backgrounds and that as social status improves, physical activity levels also increase. Their results also showed that young people who live in larger cities, whose mothers have higher educational attainment and whose fathers are entrepreneurs exercise more (Keresztes et al., 2006; Píró & Keresztes, 2007).

Kovács (2011) researched the sporting habits of students in Debrecen and found that male students participate in sports more than female students. The financial situation of the family and the type of municipality also influence the sporting habits of students. The proportion of students who regularly participate in sports increases in proportion to the educational level of their parents (Kovács, 2011).

## ***Social psychological understanding of the social context of health and sport***

Socialisation does not take place in a vacuum but is embedded in an environment; therefore, the development of the individual is always within a given culture. The phenomenon of ethos, which emerges and operates in society and sport, and the interplay between these two spheres, is considered

to be of paramount importance for social integration (Blackshaw et al., 2004). This means that it is a relevant concept in all societies and plays a role (Ansel, 1984). By ethos, we mean those patterns of behaviour which are both organised around a set of values and have a fundamental basis for them, rather than being merely observers and evaluators of these behaviours. Ethos is thus a human manifestation that affects others while also guiding the person who acts. Ethos can be one of the key concepts in the study of the role of everyday physical education, as we aim to understand what ethos sport, as a social milieu and form of behaviour, fosters and what ethos it has created for its participants. Ethos does not only mean an individual pattern of behaviour. This raises the question of how sport, as a social institution with its basic norms, fits into the social strata that make up its environment. The society produces very diverse, hierarchical and often conflicting ethos. Different social strata and subcultures generate different ethos. However, society always has a dominant, validated ethos pattern that is valid for others. Sport, by its very nature, is distant from the dominant ethos. This is partly because it is often oriented towards specific, extreme achievements and partly because these are difficult to achieve through the usual, everyday forms of activity.

The various linkages between sport and society also reveal social relations; therefore, sport and society should be considered together, with each analysis incorporating the other as an independent variable. The analysis of social organisation and education systems cannot be neglected in the social integration of sport (Vingender, 2017).

Several social psychological models of the functioning of teaching and learning institutional systems (Hodgkinson, 1978, 1983; Getzels & Guba, 1957; Getzels & Thelen, 1960) have been developed to reconcile organisational elements and personal values within institutions. Among these, I would like to take the Getzels-Thelen model as a starting point for my topic (Figure 5). According to this model, there are two broad dimensions of social systems: individual and institutional levels. The conflict between the formal goals (I) formulated by society and the attitudes (IV) learnt by the individual during socialisation can be a problem in the individual's behaviour. Both dimensions aim

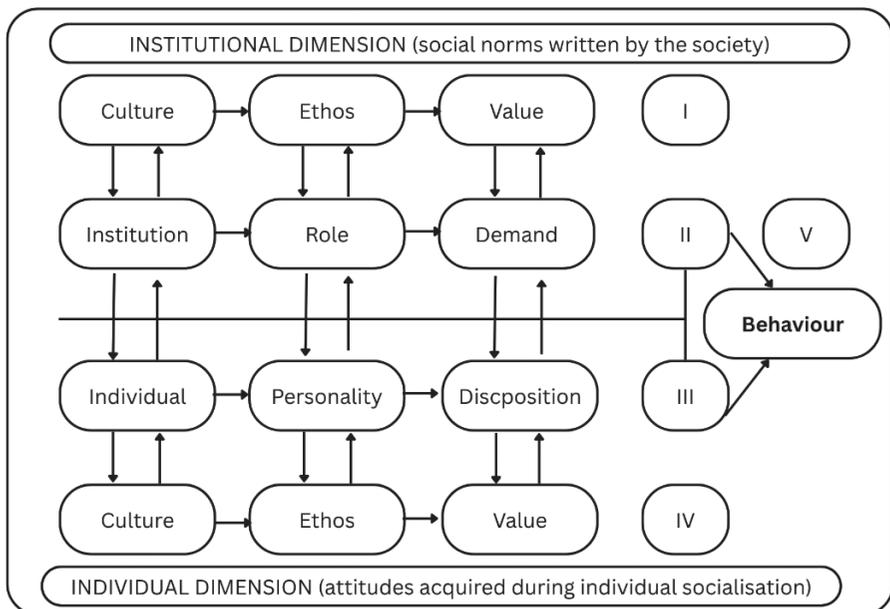


Figure 5: The Getzels-Thelen social model (Source: Getzels-Thelen, 1960, own edition)

at effectiveness and efficiency. That is, both institutional and personal interests must prevail in the life of the individual. Let us consider the importance of health promotion, particularly the role of physical activity. We need to examine where the central conflict may lie in terms of the dimensions of institution-self, role-personality, and expectation-attitude (disposition).

There can be no conflict between institutional and individual values in the recognition of regular physical activity, as both medical and sports science have proven their justification. The role of the state as an institution in health promotion is justified. However, let us examine the cultural environment in which individuals live their daily lives. We see that the environment shaped by society does not operate according to the same norms (ethos). Although our country is the only one in Europe to have introduced daily physical education in public education, the consumer society's value system, which favours materialism, is coupled with a less developed health consciousness (Pikó, 2005; Pluhár et al., 2003), which hinders the adoption of an active lifestyle. The motivation to exercise regularly and make it a lifestyle requires an ideal balance of extrinsic and intrinsic incentives. When intrinsic motivation predominates, it has a beneficial effect on attitudes towards sport and strengthens the intention to maintain and possibly improve health (Deci & Ryan, 1985). From the triad of money, leisure and attitude, which studies have shown to be prerequisites for choosing recreational sports activities (Budai, 1999; Laki & Nyerges, 2000), the attitude has a direct impact on the choice of recreational sports (Paár, 2010). This is where the problem of conflict between institutional roles and the individual within the Getzels-Thelen social model becomes apparent. Changing attitudes has a profound social and cultural history and requires implementation over several generations before it can have an impact.

As all socialisation effects are mediated through the cognitive filter of young people, it is essential to consider the cognitive components of socialisation agents, thereby making the system of parents' prior experiences, goals, and health awareness a determining factor.

The strata of society, living at different levels in diverse societies, also have their cultural patterns; they have their perceptions of the society and their situation within it. No judgement should be made about the cultural model of any one stratum (dominant or minority) since it is all based on experiences and events inherited from the narrow environment. These differences within a society may help explain the particular characteristics associated with disadvantaged groups. They may also underlie, for example, differences and problems in school socialisation and achievement (Ogbu, 1981, 1990).

Society may expect the population to increase physical activity and thus improve health, but daily physical education can only lead to a change in the attitudes of the new generation. In this age group, already socialised in a consumer society, extrinsic motivation has become powerful, making them impressionable (Pikó, 2002). This is also determined by the lifestyle mediated by the media, which often provides a model for inactive lifestyles. Today, the intrinsic motivation to adopt health-conscious values is missing (Edvy, 2017).

## **The role of physical activity and sport in shaping social capital**

There are several effects associated with sports that cannot be quantified, such as the behavioural patterns that sports can foster (honesty, discipline, perseverance) and the impact that sports can have on social interactions (sense of identity, sense of belonging). These effects, although they begin at the individual level, are also felt at the societal level. Their development can be primarily attributed to physical activity in the community and participation in sporting events. Putnam (2000) also examined

the relationship between sport and social capital. He argues that to develop social capital, we must transcend our own political and social identities to interact with people who have different identities. The author mentions team sports as an opportunity to build social capital. In developed countries, sports strategy and policy documents frequently cite the positive social effects of physical activity. The aim of Vörös' (2019) review of various national sport policy and strategy documents was to highlight the areas where the link between sport and social capital is manifested.

The countries examined by the author are the United States (2016), Australia (2015), Austria (2013), the United Kingdom (2015), France (2014), Poland (2015), Hungary (2007), and, of course, I take the domestic analysis as the primary focus.

*In the case of Hungary*, the motto “sporting nation and sporting nation” is presented as a vision for the future, and eight “social goals” are formulated to serve this vision. These include concepts such as community identity, social cohesion and the development of equal opportunities. Among the social benefits associated with sport, it highlights the positive effects of sporting activity on the community. Among the anticipated effects, it mentions the positive effects at the individual level, including willpower, sense of purpose, team cooperation, and the positive role of social integration through the development of social awareness, thereby increasing social participation. There are also references to the role of sport in protecting the environment and combating climate change. It is worth noting that the benefits associated with community and elite sports are often not distinguished in most documents. However, most of the effects mentioned above are mainly associated with community sports. This is noteworthy because sports funding in the countries studied, including Hungary, tends to be skewed towards elite sports in the allocation of resources (Green & Houlihan, 2005). It is interesting to note that none of the documents draw attention to the adverse effects of sport, although it is well known that it can promote social segregation or even racism (Földesiné, 2010). The concepts of social cohesion, trust, integration, inclusion, and mobility are present in all the documents examined.

Another common point is that the social role of sport and its promotion are argued to have an impact on the health of the individual. All of them address the crucial role of social relationships in the benefits generated by sport (Red, 2019). Related to this, many definitions of how social capital works agree in describing the concept as a resource in social relationships, characterised by socio-economic utility (Bourdieu, 1986; Coleman, 1988; Putnam, 2000).

Pusztai (2009) argues that the study of capital theories has been inescapable in the sociology of education since the second half of the 20th century. In our research, we have focused on different elements of capital, such as **human capital, which** is the sum of physical and mental abilities, skills, and knowledge that a person possesses, partly at birth but mainly acquired, that can increase their productive capacity as an investment resource. This has a positive impact on the individual's quality of life, improving their material and social situation while also benefiting society.

**Knowledge capital** is an important part of human capital, as human capital can be seen as an investment. The concept of the “spillover effect” plays a crucial role in human capital theory, as it is reflected in an individual's life, for example, in the aspiration for a higher level of cultural life and a healthier lifestyle, which increases with education. In addition to the benefits to the individual, it also has a decisive social benefit (e.g. in society, an increase in educational attainment can be associated with a decrease in unemployment) (Pusztai, 2015a).

In the table below, I outline the wide range of benefits that sports can offer, which can also promote the development of rural regions that are lagging. The capital elements involved in the study are organised according to their expected outcomes based on the impact of sport and physical activity. Sport can contribute to socio-economic development in several ways, as well as foster social co-

hesion through its community-building role. However, in addition to the positive effects that can be identified at the societal level, there are also adverse effects. However, the impact of community sporting activity can be manifested not only in the building of social capital but also in the amplification of social differences and, in extreme cases, even segregation. We must also be aware of the adverse effects of sports injuries and doping.

Table 3: Socio-economic impacts associated with physical activity in terms of the capital elements involved (Source: Vörös, 2019 based on own editing)

The effects of sport and physical activity	Expected results	Capital elements	Specialist literature
<b>Factors affecting health</b>  Positive effects: recreation - restoring the ability to work, health promotion,  Negative effects: Doping, injuries, accidents,	micro level	health capital  human capital (health status)  economic capital	Grossman (1972) Bourdieu (1999) Lechner (2009) Lechner & Sari (2015) Spence et al (2005) Kopp & Skrabski (2009) Barro (2013)
	reduced health expenditure; additional income realised through better health;  higher life expectancy		
	macro level	economic capital	Ács et al (2011) Ács et al (2016) Gabnai et al (2019) Putnam (2000).
	higher economic activity, reduced health and sickness benefit expenditure		
<b>Educational role</b>  behaviour patterns, norms (moral values, honesty, discipline)	lifelong health awareness, responsible and constructive behaviour	human capital  social capital  sports capital	Bourdieu (1984) Pot et al (2016) Coleman (1988) Ferge (1980) Costas et al (2015) Corlett (1996)
<b>Social relationships:</b>  Positive effects: a sense of social belonging, sense of identity Adverse effects: discrimination (racism, nationalism)	micro level	relationship capital	Crabbe (2015) Laczkó & Rétsági (2015)
	developed self-awareness and a cooperative attitude		
	macro level	social capital	Coleman (1961) Coleman (1990) Bourdieu (1999) Földesiné Szabó et al (2010) Judge (2004) Nicholson & Hoye (2008) Seippel (2006) Skinner et al (2008)
	Inclusion and multiculturalism		

# Physical education at different levels of education

The basic aim of the chapter is to explore the broad spectrum (international and national) of the role of physical education in the development of healthy lifestyles and the system of content renewal. I will present the content of the areas related to physical education in public education (NAT, everyday physical education) and analyse the situation of the subject and the changes in its requirements in both public and higher education.

I will describe the changes in the field of health promotion following the shift in the public education system, within the context of the basic curricula, and in the higher education system, in the context of legal regulations.

## International trends in the teaching of physical education

In Hungary, the dominant role of physical education in health promotion is recognised in both public education and higher education. What are the societal needs for the renewal of physical education in countries further away from us?

### *Physical education requirements in the UK and the USA*

In the United States of America (USA), obesity and inactivity are already a significant problem in the primary school age group. Requirements vary from one state to another, with children receiving only 40 minutes of compulsory PE once a week. If you want to participate in sports beyond this, you can take part in after-school activities. Between 2008 and 2011, approximately 300,000 teachers lost their jobs in the US, resulting in increased class sizes and unqualified teachers being assigned to teach PE. The long-term role of physical education classes in saving healthcare costs has been overlooked, as \$147 billion is spent annually on treating obesity-related diseases alone (Spark, 2012). Regardless of gender, 17% of young people aged 2-19 years are considered obese (Ogden et al., 2015). In US higher education, there are no compulsory physical education classes, and students have the opportunity to exercise after class, similar to public education.

In the UK, both primary and secondary schools are responsible for determining the number of hours of physical education taught per week. In previous years, it was two hours per week, but the range of optional after-school sports activities has been extended (Ofsted Annual Report, 2012). In the UK, four different levels of standards have been set for the requirements that pupils must meet in public education. This is a gradual progression towards complex movements (e.g. running, swimming and dancing). For secondary school pupils, the emphasis is mainly on team sports (GOV.UK, 2013). For higher education, there are no compulsory PE lessons; instead,

students participate in afternoon team sports of their choice, the most popular being rugby and football.

### ***The European Union Member States' sporting regulations***

The European Union (EU) is also drawing attention to the health issues caused by the decline in physical activity among younger people. Surveys show that 80% of school-age children participate in physical activity only at school, when they should be engaging in at least one hour of physical activity per day.

The European Union's education policy also sets important strategic goals for physical education in schools. A key element of these is the requirement for lifelong learning. To this end, a framework has been developed, which is defined by the education and training frameworks of the Member States (Vass et al., 2015). The Lisbon Treaty includes provisions for the development of sport in Europe (Lisbon Treaty, 2007). The European Commission outlines the development and promotion of sport throughout Europe (Recommendations, 2008). The White Paper (2007) highlights the important role of sport in education and training. The Communication (2011) sets the objective of increasing time spent on physical activity and quality education. Its recommendation is to achieve consistency between legislation and practice to promote health-enhancing physical activity. Physical education is a key element here and is encompassed by physical activity programmes to promote health.

EU policy analyses indicate that, despite numerous interventions, there has been no significant improvement in education, as healthy lifestyles are not yet recognised as a competence area in curricula or development tasks. Only half of the Member States have a strategy for developing this area. However, physical education teachers should be responsible not only for developing psychomotor movement but also for promoting health-conscious behaviour and teaching healthy lifestyles (European Commission, 2014).

The White Paper on Education (2013) also states that school sport is the basis for 'active citizenship' in the EU. The document builds on the Nice Declaration, which states that the regulation of sport is a matter for the Community but that the organisation of a sporting event is primarily the responsibility of the Member States and sporting organisations. The importance of the White Paper lies in the fact that it builds on public consultation and states that sport is a real way of achieving one of the European Union's objectives, namely to think and act as a community. It emphasises the benefits of physical activity and sets out what different age groups can do to improve their health. The WHO European Action Plan for Mental Health 2013-2020 (WHO, 2015) outlines the following requirements for mental health: mental health services should be accessible at the local level and should be integrated and coordinated (WHO, 2015). The WHO recommends that children aged 5-17 years should engage in at least 60 minutes of moderate-intensity physical activity per day (WHO, 2017). The Commission has established the HEPA (Health-Enhancing Physical Activity) Network, increased funding and developed a public health programme (2007-2013) for family, school, physical education and sports organisations, relying on their cooperation. There is no uniform model for the organisation of sport in Europe. However, it does state the need for Community regulation in specific areas (e.g., accountability) and that governance should be national, with the responsibility of the sports academy.

In 90% of Member States, physical education is legally of equal value to other subjects, but in practice, it is perceived as 34% less valuable by the public. According to Hardman & Marshall (2009), it is taught more "loosely" than other subjects and physical education teachers are perceived as less well compared to other teachers (e.g. maths, language subjects).

In 2015, the United Nations Educational, Scientific and Cultural Organization, UNESCO, also stated its position (UNESCO, 2015), reaffirming the 2013 Berlin Declaration that physical education class is the most valuable way to shape young people's skills, motivate them and prepare them for a place in society (UNESCO, 2013).

### ***International trends and strategies in physical education education***

The reference framework of the Hungarian NAT follows the content and structure structure used in Europe (Vass et al., 2015). Hamar and Soós (2004) identify the integration of physical education as a basic area of education into a unified European system of public education and educational management as a significant problem that would require, first of all, a unification of the diversity of public education structures in the Member States and would also require a harmonisation of the content of education. This would be followed by the establishment of a curricular timeframe, as there are significant differences between countries in the time allocated for physical education and sport. European countries typically allocate two to three hours of physical education per week, and no curriculum has less than this. However, some countries have more than this per week (Hamar & Soós, 2004).

Among the continental curricula, the Austrian Civil School Curriculum was the first to include physical education as one of its basic educational principles. The number of compulsory lessons is 2 to 4, which may be increased by up to two additional hours. Physical education here also includes sports activities that are part of everyday life, focusing on physical fitness. In the physical education chapter of the Norwegian curriculum, the objectives, the timetable for progress and the subjects covered in the material for each year group are described. Here again, the aim is to provide a complex understanding of the subject, with opportunities for direct and indirect health promotion. In addition to the chapter on physical education, the curriculum includes a chapter on physical education and health promotion, which covers objectives related to exercise theory, health promotion, and disease prevention. In France, where daily physical education has been introduced in grades 1 to 6, the benefits are already being seen (the other grades have three physical education lessons per week).

Countries with Anglo-Saxon curricula did not have centralised curricula until the 1980s. The English national core curriculum, published in the late 1980s, serves as a model. Physical education was included in this curriculum as a core subject and was an essential part of the school curriculum (Hamar, 2016). In summary, the time frame for physical education lessons varies considerably across European countries. Ensuring optimal time and greater government influence would also help to harmonise physical education theories and curricula at the European level.

In all European countries with centralised curricula at primary and secondary levels, physical education in schools has been given an important role. There is evidence of a positive impact on health and an increase in pupil participation in sports outside school. The analyses indicate a need to enhance education strategies in each country and to develop centrally designed plans for improvement. They also mention the need for adequate infrastructure and staffing. Reforms should prioritise national strategies, centrally developed curricula, teacher training, and related continuous professional development, as well as the improvement of sports facilities and other physical conditions in schools. However, renewal efforts have begun in various areas across different countries. In Hungary, for example, the national curriculum has been reformed to include daily physical education, and improvements have been made to school sports equipment and facilities. In 2012, Denmark introduced a new strategy aimed at enhancing social and individual skills through learning,

promoting social inclusion, and fostering motivation. In Latvia, guidelines have been developed for the period 2013-2020, focusing on the following areas: sports infrastructure and its financing, elite sports, children's and youth sports, sports for people with disabilities, medical supervision, and healthcare. Key target groups: children and young people, as well as sportsmen and sportswomen. Austria has been developing a new strategy since 2013 to promote health and fitness in all types of schools.

The strategy also addresses the physical and mental health of schoolchildren, provides medical support for schools, and offers infrastructure for sports. Romania has also set up a strategy for physical culture for the period 2012-2020. Its main objectives are to increase the involvement of the health, education, and social sectors in physical and sporting activities among the population, to improve the effectiveness of physical education in schools, to establish a timeframe for teaching, and to modernise the training of physical education teachers. In Greece, the curricular change in the school curriculum has increased the duration of physical education lessons and altered the content of these lessons. In addition to the preference for traditional sports, new activities are being introduced and extended beyond the school walls. In all-day schools (grades 1-4) in Greece, the weekly teaching time has been doubled. In these schools, new modules (jazz and hip-hop dance) have been introduced and linked to different extra-curricular activities. International recommendations on the development of sport include the development of infrastructure. To ensure that students engage in regular physical exercise at school, some countries need to improve and modernise the infrastructure of their institutions, including equipment and facilities. In Belgium, for example, school sports halls have been renovated to increase the effectiveness of physical education in schools (European Commission, 2013).

According to Hamar and Karsai (2017), the knowledge, skills and attitudes associated with key competencies in physical culture should only be understood in their interaction. The scope of activities in this area is complex. For example, it includes denouncing habits that are harmful to health and the relationship between developing a good lifestyle, engaging in physical activity, and maintaining a balanced state of mind. Knowledge, skills and attitudes are developed at all levels of education (primary, secondary, higher and adult). The lifelong developmental impact of different forms of education can only be achieved if they are combined with sporting activities of an appropriate professional standard in an organised framework. Together, the family, school and sporting institutions provide the setting for the development of key physical and cultural competencies.

## **The situation of physical education in Hungarian public education**

In examining the role of physical education in everyday life, it is essential to understand the aims of physical education as a subject, its content and areas of development. According to Ekler (2011), the specific content of physical education is a unique cultural treasure, and its acquisition has a profound influence on the quality of our entire lives. Its unique values and its personality-shaping effects are also decisive for the system of physical culture.

### ***Transforming the curriculum of this subject in public education***

Hamar (2016) deals with the issue in detail in his curriculum theory work, and many others (Elbert, 2010; Ekler, 2011; Rétsági, 2011; Vass, 2003) have analysed the transformation processes. Due

to space constraints, I would like to present the changes in the five NATs in a summary and tabular form in this subchapter, rather than providing more detailed content. I will try to highlight only a few key points (Figure 6).

NAT1 was introduced in 1995. Hamar's (2012) study of NAT1 presents the core curriculum as a new curricular genre. Decentralised educational management replaced the previous prescriptive curricula. In NAT1, a new term, 'competence,' appeared among the requirements to be developed. The framework curriculum was launched in the 2001/2002 school year in grades 1, 5, and 9. Although it was not technically aligned with the NAT, it was designed with the Year 12 regulatory system in mind. It returned to the traditional formal criteria (number of lessons, conditions for progression) (Elbert, 2010).

NAT 2 was launched on 1 September 2004, again giving schools greater freedom. NAT 2003 also sets out tasks to be developed as priorities, such as 'Physical and mental health. Two of its main elements are that schools should help to improve the health of young people by providing both staff and equipment. As an innovation in NAT 2, life skills are included for the first time among the key competencies. NAT 2 has again made it possible to increase the number of physical education lessons. However, the legal possibility of daily physical education and the deadline for its possible introduction have not been brought to the fore (Heszteráné, 2006).

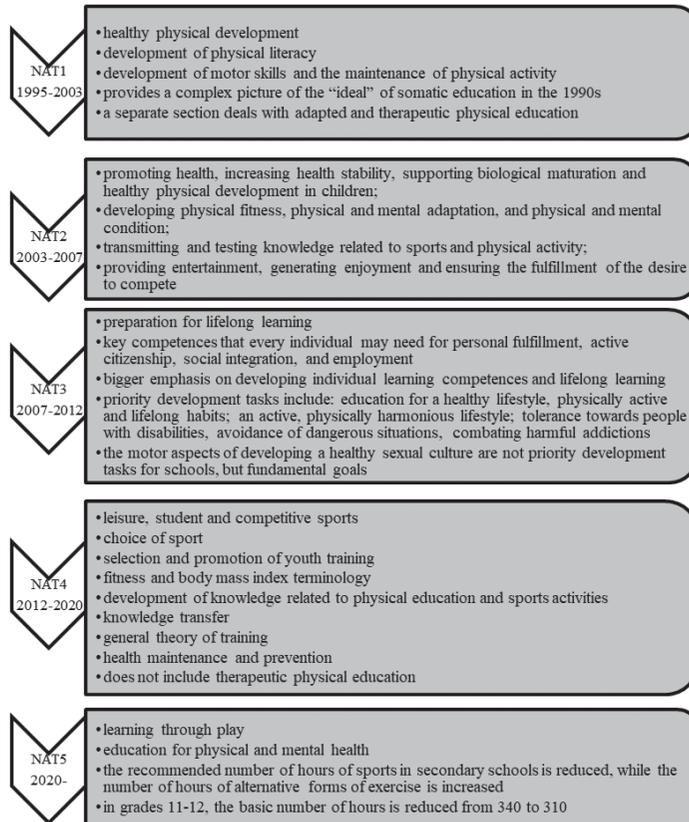


Figure 6: Evolution of NAT periods and characteristics (own editing)

NAT 3 was introduced in 2007. As a new element, the European key competencies had to be integrated into the National Curriculum. The European Key Competences did not include the integration of physical education in schools. However, after a long period of professional influence, the preparers of the NAT included physical education in schools in the group of priority tasks (Elbert, 2010). The primary objective is to develop key competencies for adult life, which enhance both individual well-being and social integration. Hamar (2012) draws attention to physical education competencies since education for a healthy lifestyle is not only a developmental area for schools but can also be seen as a universal goal.

NAT4 entered into force in 2012 with Government Decree 110/2012 (dated 4 June). Through a change in educational policy, the 2011 amendment to the Public Education Act introduced daily physical education from the 2012/2013 school year in grades 1, 5, and 9, and later gradually introduced it in the other grades. The development of pupils' aspirations and values for good nutrition, healthy lifestyles, and healthy living has been formulated (NAT, 2012). A key element of the 2012 National Curriculum is that teachers should provide knowledge in physical education lessons that explains how the body works, based on general theories of exercise, and help pupils maintain their health and avoid illness. However, an important element has been omitted from NAT4, and physical education has been excluded from the National Core Curriculum (Hamar, 2012).

NAT5, to be introduced in 2020, will focus on 'playful action learning' in the lower primary school. Physical education will also be included. In the secondary school curriculum, differentiated development and education for physical and mental health (developing health-conscious behaviour and learning positive strategies for coping with stress) will be given a prominent role. In grades 11-12, the number of basic lessons will be reduced from 340 to 310 (Hamar, 2012).

### ***A health-oriented framework for daily physical education***

In presenting an educational framework for quality physical education, I will briefly review the methodological (pedagogical) principles of quality physical education that should be applied in the practice of teaching physical education in schools, as outlined by Vass et al.

The implementation of the *methodological framework (principles)* ensures that the content to be acquired by pupils is accessible and accessible to all children following the NAT 2012 and the framework curricula that focus on health and personal development. From the methodological framework, I would like to outline only the *principle of 'Health and Personality-Centred Physical Education'*, which is relevant to my topic. The principles and objectives of NAT 2012 provide a clear direction for the health promotion function of physical education in schools. Using the tools of school physical education contributes significantly to the physical, mental, intellectual, motor, emotional and social development of young people and also promotes health promotion and talent management in schools. Furthermore, literacy education aims to give pupils a vital role in their lives through regular activities, enabling them to lead healthy lives for the rest of their lives.

*The content framework (development domains)* helps identify the knowledge, skills, and attitudes that extend beyond the literacy domain and are necessary for a health-conscious, future-oriented, and active life. From the point of view of my topic, I would like to write about the development area 'Health-conscious behaviour', which is a set of knowledge and actions that can be classified under the heading of prevention. It also includes physical

education, which prepares people to engage in preventive physical activity, adopt good nutrition, and utilise effective forms of stress management. The learner accepts and values health and can make independent choices, leading to health-conscious behaviour.

The key concepts in the area of physical education and sport include health awareness, physically active lifestyles, fitness, development of student-centred personal and physical literacy, responsibility, equal opportunities, cooperative skills, and an overall health-oriented approach to education. However, Rétsági and Csányi (2014) draw attention to the fact that physical education and sport are not mentioned as a separate competence in the document, along with the positive directions.

The methodological transformation of everyday physical education focuses on learner-centredness and emphasises differentiated education and the development of positive attitudes towards activity (Rétsági & Csányi, 2014). At the same time, Hamar (2016) identifies a contradiction between the legal regulation and the possibility of substituting two physical education lessons per week, and also raises concerns about lessons taught by non-physical education teachers.

In our country, the introduction of daily physical education in 2012 was of crucial importance. Its main objectives are to integrate physical activity and sport into the general value system, to shape health awareness and prevention, and to reduce obesity rates (NAT, 2012). Several research results have been presented on this topic (Müller, 2018; Borbély et al., 2017; Fintor, 2015; Rétsági, 2015b). There was an almost unanimous social demand for the introduction of daily physical education, and two years later, 70% of the population agreed with its introduction (Borbély, 2014). In his regional studies of the Northern Great Plain, Fintor (2018) found that students primarily (95%) positively evaluated the introduction of daily physical education. This is confirmed by the positive attitudes of physical education teachers towards the implementation (Borbély, 2016; Hamar, 2016; Borbély et al., 2017), suggesting positive long-term effects (Hamar & Karsai, 2017; Kovács et al., 2017; Nagy et al., 2018).

## **The state of physical education and sport in higher education**

Physical education, in terms of health promotion, personality development, and the formation of a well-rounded and hardworking generation in body and mind, holds a prominent place among subjects in public education (Varga, 2009). After public education, the teaching of physical education can continue in higher education institutions, where training opportunities are provided for individuals at various levels and the practice of different sports. Therefore, it is the task of colleges and universities to provide education and expand the range of sports offered (Rétsági, 2011).

In 2016, students who had already benefited from daily physical education during their secondary school years started their studies. A significant number of higher education institutions have taken the initiative to include compulsory physical education in their curricula, confident that they can promote healthy lifestyles.

Physical education and sports in higher education institutions are not organised around a central curriculum. The students who come to higher education already have physical literacy acquired through public education, so the role of higher education institutions in physical

education is to ensure that the skills they have already acquired are developed and that the necessary conditions are created. Despite the infrastructural difficulties, many higher education institutions have introduced physical education as a compulsory subject for credit.

A system of competitions run by the Hungarian University-College Sports Association (MEFS) will add to the range of sporting opportunities offered by these institutions. MEFS aims to ensure that universities and colleges train not only professionals specialising in a particular discipline but also health-conscious young adults who, by adopting a health-conscious attitude when they enter working age, can become more effective contributors to society and the economy. Educating future generations to lead responsible, health-conscious lives is a fundamental social task (Ádány, 2008).

In 2013, the Hungarian University-College Sports Association prepared the Alfréd Hajós Plan, which contains the professional programme plan for college and university sports until 2020. The plan aims to increase the prestige of university sports and to implement voluntary daily physical activity in higher education in Hungary. Currently, the majority of students are inactive, so it is essential to increase the number and quality of physical education classes to introduce these young adults to the values of physical culture. It is, therefore, of the utmost importance to clarify the content of teaching in higher education and to provide the necessary staff, equipment and conditions.

The Alfréd Hajós Plan describes one of its main tasks as reaching and activating students who do not yet participate in sports. The transformation of Hungarian higher education towards a healthy and sporty lifestyle can only be envisaged if it is guided by goals that are acceptable to the majority, such as mentoring programmes and sports scholarships (MEFS Alfréd Hajós Plan, 2013).

The Hungarian University-College Sports Association (OH-MEFS 2019) conducted a questionnaire survey of university students' sporting habits as part of the EuroStudent international survey. The participation rates in sports of a representative student sample of 6,558 young people, both former school and current university students, were compared. In addition to compulsory physical education classes, young people participated in sports at the rates illustrated below, based on a survey conducted (Table 4).

*Table 4: Proportion of young people participating in sport outside compulsory PE lessons in general and higher education (N=6558) (Source: MEFS 2019 data, own edits)*

Frequency of physical activity % in 2019		In public education	At university
Practically do no sport	never	<b>8,8%</b>	<b>12,5%</b>
	less often than once a month	10,5%	14,7%
	1-2 times a month	12,5%	18,3%
Seldom do sports	once a week	13,3%	17,8%
	twice a week	17,3%	14,8%
Enough do sport	three times a week	16,9%	11,3%
	four times a week	7,7%	4,8%
	more than four times a week	13,1%	5,8%

According to the MEFS questionnaire, the proportion of students participating in physical activity is very high among prospective university students who have received daily physical education for four years in public education. However, it should be noted that the same young people also account for 12.5% of students who rarely engage in any sports, which still does not indicate a positive change in the physical activity levels of students. Only the proportion of students who do little sport (once a week) shows an improvement (17.8%) compared with the general education population.

The practice of daily physical education in general education has led to a positive change in values. It would be essential for higher education to share the same values, as establishing a health-conscious, physically active lifestyle in young adults is crucial during the university years. Young intellectuals are role models in society, and it is therefore essential that students, as future intellectuals, identify positive health behaviours as a value during their higher education years. Suppose this can be coupled with practical courses that foster a physical and mental balance for students, taught by well-trained and committed teachers. In that case, students' investment in health capital can be increased. Physical culture literacy can represent cultural capital, which can then be translated into social capital, and thus even social mobility can be achieved.

## **The role of leisure activities in higher education**

Regular recreational sports have a positive effect, while competitive and non-competitive sports have an adverse effect on student achievement (Miller et al., 2007). Participating in regular recreational sports in higher education could improve student achievement. A study among students in Partium found that students who participate in sports are more persistent in both work and study, and that this attitude may provide the right motivation to succeed in their studies or even continue them. These positive personality traits, attitudes and values, as a transfer effect of playing sport, can have additional benefits in both academic and personal life, as well as in the labour market (Kovács, 2015). In the long term, the fact that graduates, as future leaders of society, can set an example for society as a whole is crucial. University students can be a social shaping factor due to their role as role models (Szabó, 2012). The development of an active lifestyle in higher education can be complete if it permeates every single action throughout one's life (Bárdos & Kraiciné, 2018). Pfau (2014) states that the university years are the last opportunity to play sports in an organised setting and to assert the preventive function of sports. In terms of infrastructure, university students have the best opportunities to access regular sporting activities (Fábi, 2002). According to a survey of 3,374 students in Budapest, the order of preferred leisure activities among university students is socialising with friends, surfing the internet and playing sports (based on Bíbor, 2014, cited in Kozma et al., 2016). The results of a survey conducted in the academic year 2014/15 show that students are concerned about health promotion and that physical activity and proper nutrition are the most important health behaviours (Kraiciné, 2016).

Universities and colleges strive to promote sports, including recreational activities, to the greatest extent possible. A study of Hungarian universities of science shows that all of them provide free and subsidised recreational sports. The proportion of students participating in recreational sports activities was highest at the Hungarian universities of science, at 29%, and

lowest at around 1%. In these universities, on average, 11% of students take part in recreational sports activities (Pfau, 2014). For young adults, the flexible schedules that come with being a student can increase the chances of participating in sports, while employment reduces the chances of young people having time for sports by 50% (Perényi, 2011).

There are also studies with less positive findings. In a study of 287 university students, those with the highest risk factor were offered free exercise therapy under the Mobility=Health Programme. The selected undergraduates did not take up this opportunity, which highlights the importance of mandatory physical activity in higher education throughout their entire studies (Szmodis et al., 2013). This line of thinking was also reinforced by Edvy's (2021) longitudinal study of physical activity among students at the University of Pannonia. Based on his results, he advocates the introduction of compulsory physical education in higher education, with the proviso that institutions should develop their strategies according to local potential.

# Concept of the research

## *Research questions, hypotheses*

In the following, I will outline the research questions that form the basis of the study and the specific hypotheses related to them.

**Research question I:** What factors influence students' health behaviour, including their perceptions of their daily physical activity? How satisfied were they with this programme, and what factors influenced their opinions?

H1. Gender and social background have a significant influence on perceptions of daily physical education and dimensions of health behaviour (physical activity, risk behaviour). Men and groups of students with higher social status (better cultural and economic capital) are hypothesised to have more favourable attitudes towards daily physical education and to participate more regularly in sports.

H2. In addition to the factors mentioned in H1, attitudes towards daily physical education are influenced by the attitude of the secondary school physical education teacher, the positive impact (usefulness) of the programme on health, and the practical experience (content) of physical education lessons. I hypothesise that the factors influencing opinions show a different structure depending on the group of satisfaction with the daily physical education: the influence of the teachers' personality and their institutional role in the programme is detectable and positively related in all opinion groups; the dimension of usefulness is more prominent among those satisfied with the programme; while opinions on content are mostly determined by those who are dissatisfied with the daily physical education.

**Research question II:** Taking into account the combination of socio-cultural (family) and contextual (school) factors, what are the relevant explanatory factors for the level of physical activity and inactivity of students? Can the activity/inactivity pattern specific to the family be overridden by the role of daily physical education in sporting activity?

H3 . The effect of daily physical education on student sporting activity is not or barely noticeable when the effect of other patterning agents (such as family and peers) is considered. Bandura's social learning theory (1989) supports our hypothesis, i.e., sports activity rates will be higher when coming from a "sporting" environment, and daily physical education (as a school socialisation, modelling medium) has only a contributing effect (Ács et al., 2011; Kósa, 2006).

**Research question III:** How does participation in and satisfaction with daily physical education affect students' health behaviour (sports activity, physical and mental health, risk factors /smoking, alcohol, drugs, stress/ and nutrition?

H4. In various dimensions of health behaviour (physical and mental health, risk factors, and nutrition), participants in daily physical education have more favourable indicators than those who did not participate in the programme. *Based on Grossman's (1972, 1999, 2004) theory, the amount of investment in knowledge through formal schooling positively affects health outcomes (H4a). This relationship is particularly observed for students who were satisfied with their daily physical education in high school (H4b) (Bognár et al., 2005; Fintor, 2019).*

## **Data collection and methodology**

### ***Data retrieval***

Data was collected in two waves using an online self-completion questionnaire. The first wave occurred between May 2018 and February 2019, and the second between September and November 2019. The online questionnaire was programmed through the EvaSys system. Students from two universities in the Northern Great Plain region, the University of Debrecen and the University of Nyíregyháza, were invited to complete the questionnaire. The link to the questionnaire was shared by the faculty deans' offices of the universities involved in the study via the Neptun mail system, and completing the questionnaire was anonymous and voluntary. A total of 1521 eligible respondents (after data cleaning) responded to the questionnaire.

In the analysis, I use both univariate and multivariate methods, including frequency tables, cross-tabulations, group averages, analysis of variance, linear regression analysis, binary logistic regression analysis, and multivariate scaling. The important parameters and main statistical indicators of the procedures used are reported in the rows or below the graphs or tables. For cross-tabulations, where relevant, I have underlined the observed frequencies to account for the values of the adjusted residuals (values of the adjusted residual below -2 and above +2 are highlighted). In the analysis, I account for a margin of error of  $p < 0.05$  for all statistical tests unless otherwise specified. Data were processed using the SPSS program.

## **Main characteristics of the research sample**

### ***Demographic characteristics***

37% of the respondents to the survey were men, and 63% were women. The majority of respondents were under 23 years old (60%), but there is also a strong age group of 24-29 year olds (24%). Individuals aged 30-39 and those aged 40 or older comprise 7-7% of the sample. The age of the respondents also reflects the fact that the majority (80%) completed their secondary education after 2012. From the year of graduation, it is possible to calculate the proportion of the sample that participated in daily physical education in each year of secondary school (Figure 7). This includes those who graduated in 2016, 2017, 2018, or 2019 (51%).

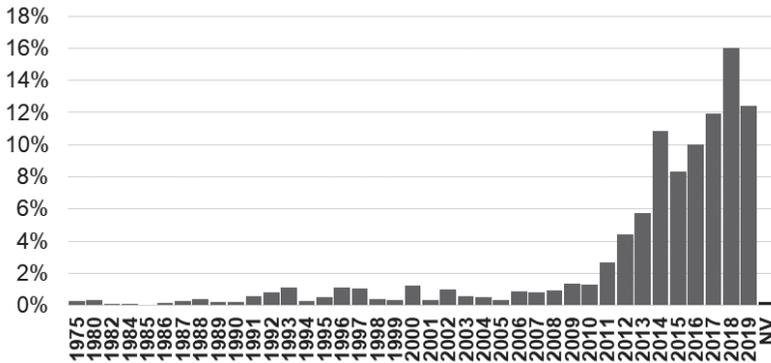


Figure 7: Distribution of respondents by year of graduation (%), N=1521)

The type of municipality of residence of the respondents (after recoding the six-item variable in the questionnaire<sup>3</sup>) indicates a more urban composition of students. 40% of respondents live in a county town, 38% in a small town and 20% in a municipality. Only 2% of the sample live in the capital.

In the questionnaire, I asked explicitly about the highest educational level of the mother and father. After recoding the original nine categories of the questionnaire into four categories<sup>4</sup>, it can be seen that the mother’s educational attainment is higher than the father’s in several cases. Between 5% and 6% of respondents have a parent with up to primary education, while 17% of mothers and 29% of fathers hold a vocational or technical school certificate. The proportion of respondents with mothers who have a high school diploma is 37%, and the proportion of respondents with fathers who have a high school diploma is 35%. Mothers with a high school diploma are also found in higher proportions than fathers (40% vs. 31%). When the higher educational attainment of mothers and fathers is taken into account, the pattern indicates a strong transmission of cultural capital among students: less than one-fifth of respondents (18%) have parents who have not graduated from high school, 34% have at least a high school diploma and 47% have at least one parent with a university degree (Table 5).

Table 5: Distribution of respondents by highest level of education of parents (%), N=1521)

	mother	father	parents*
	highest level of education		
<b>up to primary</b>	6%	5%	2%
<b>skilled worker</b>	17%	29%	16%
<b>graduated from high school</b>	37%	35%	34%
<b>graduate</b>	40%	31%	47%
<b>noresponse</b>	<1%	<1%	<1%
<b>overall</b>	100%	100%	100%

\*between the two parents, taking into account the higher education level

<sup>3</sup> In the questionnaire, I used the following categorisation: capital, county seat, city, town, village, and farm.

<sup>4</sup> I used the following categorisation in the questionnaire (category name used in the analysis in brackets): less than primary education (up to 8 grades), primary education (8 grades), vocational school/technical school without graduation (skilled worker), high school (school-leaving certificate), lyceum with graduation (school-leaving certificate), vocational school with graduation (school-leaving certificate), technical school (school-leaving certificate), college (graduated), university (graduated) academic degree (post-graduate).

In addition to the cultural capital measured by the educational attainment of the parents, I also tried to operationalise the economic capital of the students. I assessed their financial situation both subjectively and through the construction of an index of various durable assets. 21% of the students in the survey reported that they were in an excellent financial situation and faced no financial problems at all. The majority of the sample, 59%, consider themselves to be in a good situation, with a regular income at the end of the month. Nearly a fifth of the sample are in a less favourable situation, with their income just covering their expenses. Only 2% consider their financial situation to be particularly bad (Figure 8).

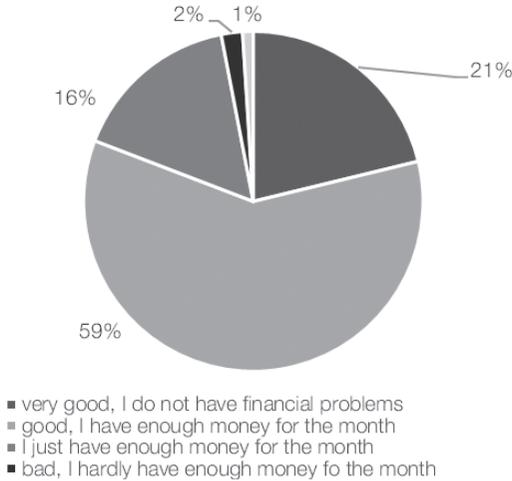


Figure 8: Overall, how would you rate your financial situation? (% , N=1521)

For each asset, it is evident that practically all respondents (or their families) own a desktop computer or laptop, and almost all students own a smartphone. 60% of respondents own a flat screen or smart TV. Forty-six per cent of students own an apartment or house, and 42% own a car. Dishwashers, air conditioners, and game consoles were used by 39%, 26%, and 23% of the sampled students, respectively. Home theatre systems were purchased by 18 per cent of students, and one in twenty (5%) had a holiday home (Figure 9).

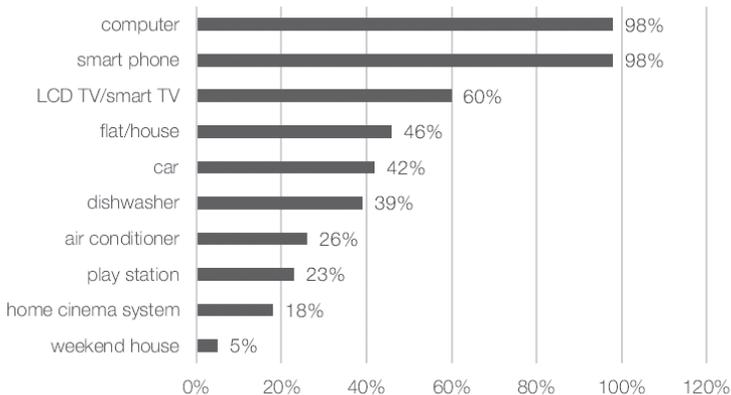


Figure 9: Do you have (at family level)? (% , N=1521)

In constructing the wealth index, I standardised the variables indicating the presence or absence of each asset<sup>5</sup> And then averaged them for each respondent (essentially creating a Z-score index). I divided the cases into four quartiles based on the averages, i.e. four categories of roughly equal size, which thus represent the wealth groups of each respondent. These quartiles can, of course, be renamed and reinterpreted (e.g. highest status, high status, medium status, low status).

In the context of weighting, I have already discussed the distribution of the sample by institution, type of training, branch of study, and faculty (institute). In addition to these characteristics, I have also included the field of study of the students included in the survey in the questionnaire. The answers to the open question have been recoded by discipline. Figure 10 below shows that the relative majority (23%) of the students surveyed are studying in a medical or health science discipline, and 20% are studying in a technical discipline. The proportion of students in the natural sciences is 11%, and the proportion of students in the humanities is 10%. Other relatively significant proportions are in education (8%), sport and economics (7-7%), agricultural sciences (6%) and law and management. The share of students in other disciplines is below the 5% threshold.

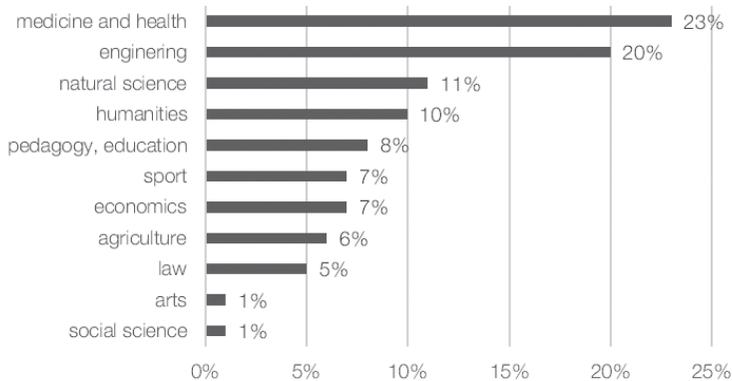


Figure 10: Distribution of respondents by discipline (% , N=1521)

The socio-demographic composition of the students participating in the study does not differ significantly by gender, type of municipality of residence, and subjective wealth status between the two institutions included. However, among the sampled students of the University of Debrecen, 18-23-year-olds are over-represented, while among the students of the University of Nyíregyháza, the proportion of those aged 30 or over is higher. In synchrony with this, a higher proportion of students at the latter institution graduated before 2011. Regarding the educational background of parents, it can be observed that among the students of the University of Debrecen, there is a higher proportion of students with at least one parent who holds a university degree. By wealth quartile, there is also a slight difference between

<sup>5</sup> Standardisation is necessary because not all assets have the same value. If all assets were considered as having/having none and the average of these were used to form an asset index, it would be easy to get biased results (e.g. it could happen that a student who has a smartphone and a student who owns his/her own home would fall into the same asset category - neglecting the other items). Suppose I create a standardised index with a mean of 0 and a standard deviation of 1. In that case, this bias is eliminated (since frequently occurring assets are given a relatively small value, weighted when the index is created, and rarely occurring assets a relatively large value).

the two groups of students: students from the University of Nyíregyháza are in a slightly better financial position (Table 6).

Table 6: Main socio-demographic characteristics of sampled students by institution (% , N=1521)

	University of Debrecen	University of Nyíregyháza	Chi <sup>2</sup>	sig.
CORCOSOPORT			65,414	0,000
18-23 years old	<u>64%</u>	<u>41%</u>		
24-29 years old	24%	24%		
30-39 years old	6%	<u>17%</u>		
at least 40 years old	<u>6%</u>	<u>18%</u>		
YEAR OF VACATION			68,729	0,000
2011 before	<u>17%</u>	<u>44%</u>		
2012-2015	30%	23%		
2016-2018	53%	<u>33%</u>		
PARENTS' EDUCATION			35,178	0,000
up to 8 overall	<u>2%</u>	<u>5%</u>		
skilled worker	<u>15%</u>	<u>27%</u>		
graduated from high school	34%	37%		
graduate	49%	<u>31%</u>		
WEALTH QUARTILES			10,912	0,012
Q1	26%	20%		
Q2	24%	22%		
Q3	<u>24%</u>	<u>35%</u>		
Q4	26%	23%		
OVERALL	100%	100%	-	-

The distribution of students in the two institutions by subject, level of education and faculty has been described earlier. There are also significant differences between the students of the two institutions included in the study by field of study. At the University of Debrecen, students from the fields of medicine and health sciences (25%) and humanities (11%) are over-represented. In contrast, at the University of Nyíregyháza, students from the fields of pedagogy and education (27%) and economics (16%) are over-represented. I have also grouped the majors of the students in the study according to whether they are teaching majors or have some kind of content-related connection to physical education and sports science. In both groups, for the total sample, there are between 12% and 12% of students. However, the proportion of students studying at the University of Nyíregyháza is significantly higher (31%), which is likely due to the institution's training traditions and current training structure. There is no significant difference in the proportion of students from the two institutions in terms of whether their field of study is related to sport or physical education (Table 7).

Table 7: Main study characteristics of the sampled students by institution (% , N=1521)

	University of Debrecen	University of Nyíregyháza	Chi <sup>2</sup>	sig.
FIELD OF SCIENCE			199,211	0,000
pedagogy, education	<u>6%</u>	<u>27%</u>		
medicine and health sciences	<u>25%</u>	<u>0%</u>		
economics	<u>6%</u>	<u>16%</u>		
sports science	8%	5%		
engineering	20%	25%		
arts	<u>1%</u>	<u>6%</u>		
social sciences	1%	1%		
agricultural science	6%	5%		
natural science	11%	12%		
humanities	<u>11%</u>	<u>4%</u>		
law and management	6%	<u>0%</u>		
TEACHING, TEACHING PROFESSION			63,123	0,000
not typical	<u>90%</u>	<u>69%</u>		
Feature	<u>10%</u>	<u>31%</u>		
<i>OVERALL</i>	<i>100%</i>	<i>100%</i>	-	-

### ***Daily physical education and sport***

In addition to the socio-demographic and educational background variables presented earlier, I will also examine the responses to the questionnaire according to other aspects. On the one hand, I will consider the group of respondents who participated in a daily physical education programme in secondary school; on the other hand, I will examine their current level of participation in sports activities. Thirdly, I use the respondents' attitudes towards different values in my analysis.

The legal provisions for everyday physical education are outlined in Act CXC of 2011, which pertains to National Public Education. According to the legislation, daily physical education "shall be organised in the first, fifth and ninth grades of school education in a progressive system from 1 September 2012" (Act CXC of 2011, § 97 (6)). Nearly half of our sample, 51%, reported graduating in 2016, 2017, 2018, or 2019. The questionnaire also included a separate question to measure whether or not the respondent participated in daily physical education during their high school years. The majority of the respondents, 59%, answered that they did and 40% that they did not participate in daily physical education (another 1% did not answer the question). The question of which answer to accept is analytical: how to distinguish between the two groups of students. In deciding this question, it should be taken into account that

- (1) the secondary school could increase the number of hours of physical education per week/day by institutional decision in the past (Meszlényi et al., 2017),
- (2) However, the term "daily physical education" was introduced into the public consciousness by the 2011 law cited above,

(3) but also that those who completed the questionnaire did not necessarily interpret the question according to the definition of general education (for example, whether or not they had physical education lessons every day),

(4) and whether or not all four years of secondary education were taken into account when responding. Taking these dilemmas into account, I made the researcher’s decision to consider respondents who participated in daily physical education as those who did (shown in bold in Table 8 below):

- passed the school-leaving examination between 2016 and 2019, regardless of their answer to the direct question on daily physical education (51%), and
- Those who took their school-leaving exams between 2012 and 2015 said that they had participated in daily physical education during their secondary school years (10%).

Table 8: Cross-sections of respondents’ date of graduation and participation in daily physical education (total, %)

yes		Were you involved in daily physical education during your secondary school years?			
		not	no response	total	
What year did you graduate?	2011 before	10%	10%	<1%	20%
	2012-2015	<b>10%</b>	20%	<1%	29%
	2016-2018	<b>40%</b>	<b>10%</b>	<b>&lt;1%</b>	50%
	no response	-	<1%	-	<1%
	total	59%	40%	1%	100%

In the analysis, I take into account that the questionnaire contained questions linked to the direct question on participation in daily physical education. For these questions, I address the biasing effects of researcher categorisation.

Overall, 60% of respondents have participated in the daily physical education programme introduced in 2012. Based on the main socio-demographic characteristics, we observe a difference in many cases between those who have participated in the daily physical education programme and those who have not (Table 9). Among the former group, the sex ratio is more evenly balanced, but the age group under 24 is in the majority. Among those who participate in daily physical education, a higher proportion live in municipalities, and a lower proportion live in county towns. Overall, this group also has slightly higher levels of parental education, with a lower proportion of parents holding no more than a vocational qualification and a higher proportion of parents possessing a school-leaving certificate. If we examine the educational structure of students in the two groups, we see that a higher proportion of those who received daily physical education attend the University of Debrecen. Most of them are full-time students, and three-quarters of them were enrolled in a bachelor’s degree programme at the time of the survey. The proportion of students not attending daily physical education is higher at the University of Nyíregyháza, with almost half of them being part-time students, and they are more evenly distributed by level of education.

Table 9: Participation in daily physical education in secondary school by socio-demographic and educational characteristics of students (%)

	not involved	participated in	Chi <sup>2</sup>	sig.
GENDER			19,353	0,000
Men	<u>31%</u>	<u>42%</u>		
Women	<u>69%</u>	<u>58%</u>		
AGE GROUP			690,554	0,000
18-23 years old	<u>21%</u>	<u>87%</u>		
24-29 years old	<u>44%</u>	<u>11%</u>		
30-39 years old	<u>16%</u>	<u>1%</u>		
at least 40 years old	<u>19%</u>	<u>&lt;1%</u>		
TYPE OF SETTLEMENT			26,916	0,000
Capital	2%	2%		
county seat	<u>47%</u>	<u>36%</u>		
small town	<u>37%</u>	<u>39%</u>		
municipality	<u>15%</u>	<u>24%</u>		
PARENTS' EDUCATION			24,473	0,000
up to 8 overall	<u>4%</u>	<u>1%</u>		
vocational school, skilled worker	<u>20%</u>	<u>14%</u>		
graduated from high school	<u>31%</u>	<u>37%</u>		
graduate	<u>46%</u>	<u>48%</u>		
INSTITUTE			26,879	0,000
University of Debrecen	<u>84%</u>	<u>92%</u>		
University of Nyíregyháza	<u>16%</u>	<u>8%</u>		
TYPE			268,656	0,000
full-time	<u>55%</u>	<u>92%</u>		
part-time	<u>45%</u>	<u>8%</u>		
LEVEL			202,484	0,000
Bachelor level	<u>46%</u>	<u>75%</u>		
Master level	<u>27%</u>	<u>4%</u>		
undivided training	<u>27%</u>	<u>21%</u>		
FIELD OF SCIENCE			148,059	0,000
pedagogy, education	<u>11%</u>	<u>6%</u>		
medicine and health sciences	<u>32%</u>	<u>17%</u>		
economics	<u>3%</u>	<u>9%</u>		
sports science	<u>2%</u>	<u>11%</u>		
engineering science	<u>16%</u>	<u>23%</u>		
arts	2%	1%		
social sciences	<u>2%</u>	<u>&lt;1%</u>		
agricultural science	<u>8%</u>	<u>5%</u>		
natural science	<u>11%</u>	<u>11%</u>		
humanities	<u>6%</u>	<u>12%</u>		
law and management	<u>7%</u>	<u>4%</u>		
SPORTS STUDIES			64,061	0,000
not typical	<u>96%</u>	<u>82%</u>		
typical	<u>4%</u>	<u>18%</u>		

In terms of disciplines, the proportion of students who did not participate in daily physical education is higher in pedagogy and education, medical and health sciences, and agricultural sciences compared to the participants and lower in economics, sports sciences, engineering, humanities, and law and administration. Both groups are dominated by students who are not typically studying sports science-related subjects; however, there is a significant proportion (18%) of students with a special interest in physical education.

### *Participation rates in daily physical education*

In addition, an important and unavoidable background variable for the sample is which group of respondents is involved in sport and, if so, at what level. I assume that those who lead a more active life will also have more positive and supportive attitudes towards daily physical education. It cannot be determined from this research whether there is a causal relationship, but the possibility of a correlation is worth noting.

Of the students surveyed, 24% said they did not play sports, 17% played competitively, and 59% played sports as a hobby. Among those who participate, individual sports are the most popular: almost three-quarters of students (73%) play individual sports, while a quarter play team sports. Competitive sports are dominated by those participating in national competitions (35%), while a significant proportion also competes in county championships (26%) or local or municipal competitions (27%) (Table 10).

Table 10: Students' current sports activity (%)

	total	What type of sport do you play?		What level of sport do you play?			
		individual sport	team sports	International	national championships, cups	county championships	local (city) competitions
				takes part in			
competitive sport	17%	73%	26%	12%	35%	26%	27%
recreational sport	59%			-	-	-	-
do not do sport	24%	-	-	-	-	-	-

In terms of sporting activity, significant and typical differences can be observed between socio-demographically differentiated groups of students (Table 11, Annex) and those with different educational backgrounds (Table 12, Annex). Among students who do not participate in sports, women (30%), 30-39 year-olds (38%), those living in communes (29%) and those without parents who have completed secondary education (62% and 31%) are over-represented, as are those who subjectively have difficult financial circumstances. There are also high proportions of non-athletes among students in correspondence courses (31%), education (43%), social sciences (90%) and humanities (34%). Competitive sport is most likely to be associated with men (22%), those aged 23 or under (22%), those with a graduate parent (22%), those in very good financial circumstances (28%), those studying science and sport (38% and 50%), those studying sport-related subjects (54%) and those studying teaching (29%). The fact that wealth, age, and type of municipality have less influence on whether one participates in sport, while cultural capital and gender have a significant influence, suggests that participation is more related to cultural patterns linked to gender roles.

# The experience of daily physical education

I have previously shown that 60% of the sample participated in the daily physical education programme introduced in 2012. Among the participating students, there was an overrepresentation of males, younger individuals (this is partly a definitive criterion), people living in communes, and those with parents who had at least completed secondary school. In terms of educational characteristics, one or two of these aspects have a 'knock-on' effect (e.g. the higher proportion of full-time undergraduate students). However, there is also a higher representation of this group of students in some disciplines (e.g. economics, sports science, engineering, humanities) and sports and physical education.

The perception of daily physical education among university students in the North Great Plain is highly polarised. Between 13% and 13% of the participants thought that daily physical education was rather bad or very bad, one-fifth thought it was both good and bad, 19% thought it was rather good, and 23% thought it was very good. A further 12% could not or did not want to say (Figure 11). In terms of school grades, the average rating for the substantive responses is 3.3, slightly better than average.

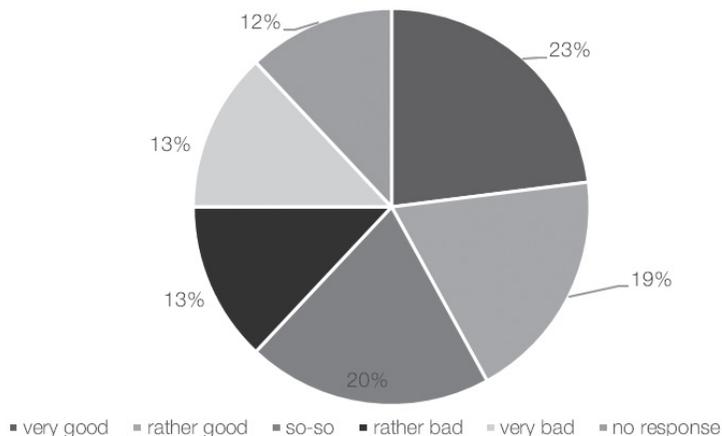


Figure 11: What do you think about the programme that has been developed? (% , N=1521)

## The role of gender and social background

H1 suggests that gender and social background have a significant influence on the perception of daily physical education. I hypothesise that males and student groups with higher social status will have more favourable attitudes towards the program.

The table below presents the perception of daily physical education and its relationship with the respondent's gender. The averages over school grades are 3.5 for men and 3.1 for women, with a significant difference between the two groups. When looking at a more detailed distribution of responses by gender, it can be seen that two evaluation parameters typically differ: 35% of men said the programme was excellent (compared to 20% of women). More than a quarter of women (28%) were unsure about their perception of the programme (compared to 17% of men). When the two sides of the rating scale are combined, an even more striking difference emerges: 33% of women were more (or very) dissatisfied, 28% were uncertain, and 40% were more (or very) satisfied with the provision of daily physical education, compared to 26%, 17% and 57% respectively for men (Table 13).

Table 13: Perception of daily physical education by gender (% and five-point scale averages)

	very bad	rather bad	is-is	rather good	very good	average*
Men	13%	13%	<u>17%</u>	22%	<u>35%</u>	3.5
Women	16%	17%	<u>28%</u>	20%	<u>20%</u>	3.1
OVERALL	15%	15%	23%	21%	26%	3.3

$Chi^2=30.481$  sig=0.000 \* $F=18.632$  sig=0.000

In my research, I operationalised social status through cultural and economic capital indicators. For cultural capital, I use one indicator, namely educational attainment, and I relate it not to the respondent but to the educational attainment of the parents. For economic capital, I use as explanatory variables both quartiles of the material situation and indicators describing the subjective material situation. For both variables, I aggregate the categories with a small number of items. Of course, the status position could have been approximated with much more refined measures, but the data collection possibilities of my research were limited.

Both mothers' and fathers' combined highest educational attainment is significantly associated with perceptions of daily physical education (Table 14). However, the associations are non-linear and very small in magnitude. However, the university-educated children of less educated mothers and fathers had slightly more favourable views of daily physical education than the children of more educated parents. Parents' education and opinions about the programme were also examined using analysis of variance; however, no significant differences in the means of the ratings were observed between the groups.

Table 14: Perception of daily physical education by highest educational level of mother, father and parents, % (N=1521)

	very bad	rather bad	is-is	rather good	very good	Chi <sup>2</sup>	Sig
MOTHER'S EDUCATION						25,109	0,001
no school leaving certificate	13%	15%	21%	<u>14%</u>	<u>37%</u>		
graduated from high school	<u>11%</u>	17%	27%	23%	23%		
graduate	<u>19%</u>	14%	20%	24%	24%		

FATHER'S EDUCATION						18,972	0,015
no school leaving certificate	14%	<u>11%</u>	25%	20%	29%		
graduated from high school	12%	<u>21%</u>	23%	20%	23%		
graduate	18%	13%	20%	24%	25%		
HIGHEST EDUCATION LEVEL OF PARENTS						21,034	,007
no school leaving certificate	16%	11%	25%	15%	<u>33%</u>		
graduated from high school	<u>10%</u>	<u>20%</u>	25%	22%	25%		
graduate	<u>18%</u>	13%	21%	23%	24%		
OVERALL	15%	15%	23%	21%	26%	-	-

There are also significant differences between the subjective wealth of the respondents and the wealth quartiles of the student groups. However, as seen in the case of education, there is no identifiable trend in the structure of the responses, except that those who subjectively reported a relatively poor financial situation have a higher proportion of those who expressed rather unfavourable opinions about daily physical education. The variance analysis of opinions also showed no significant differences between the opinion averages of different wealth groups of students.

Table 15: Perception of daily physical education by subjective wealth and wealth quartile of respondents (% , N=1521)

	<b>very bad</b>	<b>rather bad</b>	<b>is-is</b>	<b>rather good</b>	<b>very good</b>	<b>Chi<sup>2</sup></b>	<b>Sig</b>
SUBJECTIVE FINANCIAL SITUATION						23.935	0,002
very good	15%	<u>9%</u>	<u>34%</u>	<u>14%</u>	28%		
getting on with restrictions	14%	16%	<u>20%</u>	<u>24%</u>	27%		
hardly enough	19%	16%	22%	20%	23%		
WEALTH QUARTILES						45.455	0,000
Q1	<u>20%</u>	13%	18%	24%	24%		
Q2	<u>10%</u>	18%	22%	22%	28%		
Q3	14%	13%	<u>29%</u>	<u>26%</u>	<u>18%</u>		
Q4	14%	17%	22%	<u>12%</u>	<u>35%</u>		
OVERALL	15%	15%	23%	21%	26%	-	-

However, the above cross-tabulations are insufficient to enable me to make a meaningful decision regarding my hypothesis. I used analysis of variance (UNIANOVA) for hypothesis testing. In the first model, I included the ratings of daily physical education as dependent variables<sup>6</sup>, and as explanatory variables variables describing gender, parental education, wealth

<sup>6</sup> There is no consensus in the literature on whether responses to a Likert scale question should be considered as an ordinal or continuous variable. In the analysis, I consider the responses arbitrarily as continuous variables.

quartiles, and subjective financial status. In the model, I examined not only the independent effects of the variables included but also their cross-effects. However, the first model was not successful: the prerequisites for analysis of variance include that the dependent variable follows a normal distribution and that the variance homogeneity test shows the equality of the within-group variance. The first condition is not fulfilled (Kolmogorov-Smirnov  $Z = 4.814$ ,  $P = 0.000$ ), but this is a minor issue, as the database is robust enough not to require this precondition to be met (<http://www.psicothema.com/pdf/4434.pdf>). However, the variance homogeneity test indicates that the variances are significantly different from each other, rendering the model's interpretation redundant (Levene's Test result:  $F = 3.150$ ,  $p = 0.000$ ).

In the above, I have examined social status in three dimensions (parents' education, respondent's wealth and subjective assessment of this). These three dimensions, of course, are imperfect in terms of accurately describing a respondent's exact social status. However, they may help produce an indicator that at least describes their relative position. I aimed to create a more direct and tangible indicator that would more reliably measure and categorise the material situation of students, including its objective and subjective aspects. To do this, I categorised them along the values of the three variables in the table below (Table 16).

Table 16: Social status classification of respondents (N=1521)

		subjective financial situation	wealth quartiles			
			Bottom	2	3	Top
parents' education	university	very good	<del> </del>	<del> </del>	1	1
	graduation		<del> </del>	<del> </del>	2	1
	skilled worker		<del> </del>	<del> </del>	<del> </del>	<del> </del>
	university	gets on well with the schedule	<del> </del>	3	2	2
	graduation		4	3	3	2
	skilled worker		4	4	3	<del> </del>
	university	just coming out, wrong	<del> </del>	<del> </del>	<del> </del>	<del> </del>
	graduation		5	4	<del> </del>	<del> </del>
	skilled worker		5	5	<del> </del>	<del> </del>

Those with the most favourable social status are those who come from a graduate family, belong to the third or fourth wealth quartile and consider their financial situation to be very good. I have also categorised in this group those whose parents have, at most, a university degree but are in the upper quartile in terms of wealth or are also considered to be in a very good financial position ("category 1": favourable status). Slightly less well off are those ("category 2" relatively favourable status) who come from a family with a high school degree and have a very good subjective financial situation but are "only" in the third wealth quartile. Those who come from a family with a high school degree are in a more favourable wealth category, but they must manage their financial balance in everyday life. I have also included in this group those from a family with a high school degree who are in the upper quartile in terms of wealth but also described their financial situation as "medium". In the middle of the hierarchical classification are those from a family with a degree, who are in the second wealth quartile; those from a family with a degree,

who are in the second or third wealth quartile; and those whose parents are professionals but in a more favourable wealth position - while none of them declared themselves to be in an excellent financial position (“3” category middle status). The definition of a less favourable social status is ultimately the inverse of a more favourable social status. Cases in cells crossed out in the table indicate some kind of status inconsistency (e.g. coming from a low-educated family but with an excellent financial situation). I will exclude this latter group from further analysis for the sake of ‘clarity’. The categorisation has thus resulted in an indicator that provides an approximate representation of the social position of the respondents concerning one another according to the included dimensions. 11% of respondents belong to the favourable status group, 18% to the relatively favourable status group, 10% to the medium status group, 22% to the rather unfavourable status group, and 6% to the least favourable status group (the inconsistent group accounts for 32%).

Table 17: Main parameters of the ANOVA model (N=1521)

Source	Type III Sum of Squares	df	Mean square	F	Sig.	Partial Eta Squared
Corrected Model	80,558a	9	8,951	5,074	,000	,072
Intercept	4771,719	1	4771,719	2704,835	,000	,821
gender	32,491	1	32,491	18,418	,000	,030
status	3,746	4	,937	,531	,713	,004
gender * status	35,583	4	8,896	5,042	,001	,033
Error	1037,317	588	1,764			
Total	7431,000	598				
Corrected Total	1117,875	597				
R Squared = .072 (Adjusted R Squared = .058)						

Dependent variable: daily physical education assessment (1-5)

I included gender and social status as independent variables in the second analysis of the variance model (Table 17). The homogeneity of variance thus indicates an analysable model (Levene’s Test result:  $F = 1.431$ ,  $p = 0.171$ ). In the model, gender has an independent effect, but the constructed social status indicator does not ( $p = 0.713$ ). The model thus shows that men have significantly more favourable views on daily physical education than women; however, there is no statistical evidence for any influence of social status. However, the interaction effect of the two variables is significant, indicating that not all status groups are equally influenced by gender in their evaluations. According to the model, the opinions of students with the most favourable status and those of students with medium status do not differ depending on the student’s gender; i.e., the influence of gender is most pronounced in the groups of students with the least favourable status.

However, when evaluating the model, it should not be overlooked that the “explanatory power” is very low, with only 6% of the variance of the dependent variable explained by the two variables included. This suggests that, although opinions on daily physical education are influenced by gender and, through this, by social status, it is far from being the case that these aspects are decisive in determining opinions.

One more thing to consider when evaluating social status. I surveyed university students in higher education, a group that is likely to be more educated and come from a more advantaged economic

background (i.e. higher status) than is typical outside the world of higher education. The effect of social status on the perception of daily physical education is not visible within the group of university students (which is too homogeneous for this) but rather between students at different school levels. In other words, it is worth investigating whether the opinions of university students differ from those of young people who are not at university but belong to the same age group.

To address this question, I conducted an additional survey in the spring of 2019 with students who are not necessarily preparing for higher education. In this case, the cohort of vocational school students who remained in school until graduation served as the control group. I asked a total of 191 students who had graduated from vocational secondary schools in Szabolcs-Szatmár-Bereg County and Hajdú-Bihar County, having completed vocational secondary school or vocational upper secondary school, to fill in a slightly modified version of the questionnaire that I had used with university students. The survey was not based on a representative sample, but it may be sufficient to answer the question formulated above. In total, 177 of the questionnaires from secondary schools proved to be of use. Due to space constraints, I will not provide a detailed description of the sample, nor will I describe the other survey results.<sup>7</sup>

First, I checked whether there was indeed a difference in status between the respondents in the university and the vocational school sample. To achieve this, I created the same variables that describe parental education, wealth, and social status in the secondary school sample as in the university sample.

Table 18 shows the difference in parents' educational attainment by sub-sample. Considering both the father and mother, as well as their highest education level, it is true that university students have more educated parents than students from secondary schools. However, there is no significant difference between the two (three) groups of students in terms of social status.

The perception of daily physical education is more favourable among secondary school students than among university students (Table 19). The difference between upper secondary and upper secondary vocational school students cannot be statistically confirmed. The difference in school grades persists even when considering only the opinions of the youngest age group of university students.

*Table 18: Parents' educational attainment among university students and students in upper secondary education (% , N=1698)*

	<b>skilled worker at most</b>	<b>graduated from high school</b>	<b>graduate</b>	<b>Chi<sup>2</sup></b>	<b>Sig</b>
<b>MOTHER'S EDUCATION</b>				34,030	0,000
university students	<u>23%</u>	37%	40%		
vocational secondary school pupils	41%	37%	<u>22%</u>		
students in upper secondary vocational schools	<u>38%</u>	45%	<u>17%</u>		

<sup>7</sup> Half of the sample studied in Szabolcs-Szatmár-Bereg county, the other half in Hajdú-Bihar county. Two-thirds of the respondents attended vocational secondary schools, and one-third attended vocational upper secondary schools. The majority of respondents (79%) graduated or passed their vocational exams in 2018, with 14% having graduated earlier and 7% later. In the secondary school sample, 43% of the students are boys, and 57% are girls.

FATHER'S EDUCATION				25,364	0,000
university students	<u>34%</u>	35%	<u>31%</u>		
vocational secondary school pupils	<u>53%</u>	29%	<u>18%</u>		
students in upper secondary vocational schools	<u>55%</u>	28%	<u>17%</u>		
HIGHEST EDUCATION LEVEL OF PARENTS				29,025	0,000
university students	<u>18%</u>	35%	<u>47%</u>		
vocational secondary school pupils	<u>33%</u>	36%	<u>31%</u>		
students in upper secondary vocational schools	<u>34%</u>	42%	<u>25%</u>		

Table 19: Perception of daily physical education among university students and students in upper secondary vocational education (%)

	very bad	rather bad	is-is	rather good	very good
university students	<u>15%</u>	15%	23%	<u>21%</u>	26%
vocational high school students	10%	10%	24%	<u>38%</u>	18%
upper secondary vocational school students	6%	9%	16%	<u>46%</u>	24%

$Chi^2=33.023$  Sig=0.000

The above suggests that our initial hypothesis is likely to be wrong, as the group with the less favourable cultural capital was more positive about the programme. If we examine whether there is a difference in the evaluations between university and high school students in the groups with the highest educational attainment of parents, we see that the above correlation (i.e. that the opinions of high school students are more favourable) is repeated for the groups with parents with a background of no more than vocational training and those with a background of a university degree. In essence, the educational background (cultural capital) of the parents does not influence the evaluations. However, the school environment in which the respondent is studying does: university students are more critical of secondary education than those for whom, in most cases, vocational training or the baccalaureate is the last stage of studies.

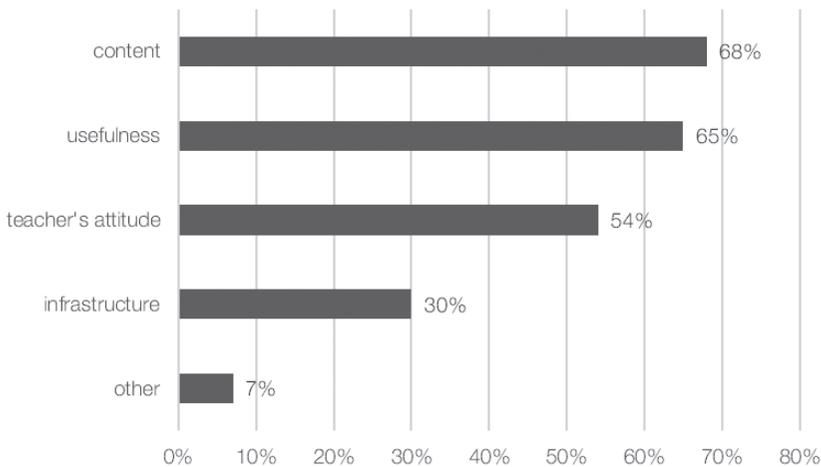
Overall, we can only partially accept our hypothesis (**H1**). Indeed, the gender of the respondent influences evaluations of daily physical education, and the correlation reported in the literature is detectable: men tend to express more favourable opinions. However, the second element of our hypothesis is not proven. Bourdieu's theory of capital does not hold. Parents' education (the respondent's cultural capital), wealth and experience have no significant influence on the perception of everyday physical education. The latter point is not confirmed even when these dimensions are considered together as the effect of a single variable that approximates social status. The gender of the respondent does not, however, cause

differences in the perception of the programme in all social strata: it is mainly in the less favourable strata that men tend to be more favourable than women. The role of economic and cultural capital is not revealed, even if we do not restrict our analysis to university students, because, contrary to my expectation, secondary school students, who otherwise have less cultural capital, have a more favourable opinion of the programme, and this is independent of their parent's education.

## **Explanations for the perception of daily physical education**

In the following, I will show the factors that the students involved in the research used to justify their evaluation of their daily physical education. In the questionnaire, I asked students to indicate whether the variables played a role in their response to four factors, and I also provided them with the opportunity to mention other factors.

Two factors emerged as the most important explanations: the content of daily physical education (i.e., the perception of the practical experience in physical education classes) and the usefulness (i.e., the positive impact of the classes on health). These two factors were cited by 65% to 68% of respondents. The third most common reason was the teacher's attitude, cited by more than half of the students. Three-tenths of the students concerned selected class facilities. Other explanations (more on their content later) were considered important by 7% (Figure 12).



*Figure 12: What factors influenced your opinion (multiple choice) (% , N=1521)*

The choices of factors do not carry the same weight when I examine them in the context of the programme's evaluation. The content elements were highlighted by a much higher proportion of students who had a very poor opinion of the programme compared to the total sample. In contrast, the usefulness was highlighted more by those who, on the other hand, had a very positive opinion of daily physical education. The latter group was also the

most likely to mention the attitude of teachers. The issue of facilities is polarised: it was highlighted more by those who had a very poor opinion of the facilities and by those who had a rather good opinion of the PE. Other aspects were primarily mentioned concerning strong criticisms of the programme (Table 20).

Table 20: Choice of factors influencing the evaluation of daily physical education according to the perception of the programme (% , N=1521)

	very bad	rather bad	is-is	rather good	very good	OVERALL	Chi <sup>2</sup>	Sig
Content	89%	59%	65%	56%	72%	68%	41.616	0,000
usefulness	70%	51%	54%	67%	80%	65%	42.693	0,000
teacher's attitude	57%	43%	45%	56%	65%	54%	21.895	0.000
facilities	41%	26%	27%	20%	35%	30%	18.633	0,001
other	22%	2%	5%	7%	2%	7%	56.661	0,000

In the textual explanations of the other responses, those who were more negative about daily physical education typically expressed two types of opinions. The first concerned the overcrowded timetable: having to stay in ‘unnecessarily’ or taking time away from other, more valuable lessons. Related to this was the standard view that those who want to participate in sports or do more than in school will do so anyway, so increasing the timetable will only make other pupils (who do not want to participate in sports) more uncomfortable. The other typical criticism was related to infrastructural deficiencies: several classes playing sports together in the same gym, with no space or time for showering and cleaning after PE lessons. There were also two other criticisms from those who were generally positive about PE lessons. One argument was that they liked the activity and refreshments between lessons and that they liked to exercise anyway. Another was that PE classes were an excellent community-building activity: everyone had fun, and the classes were a great way to bring the community together.

In the following, I investigated whether knowledge of these explanations, compared to hypothesis H1, would change the perception of the evaluation of daily physical education, specifically whether factors indeed influence aggregate opinion. I chose linear regression analysis as the method of analysis. The dependent variable of the model was. Therefore, the opinions on daily physical education and the explanatory variables included gender, status, indicators of content, usefulness, teacher attitude, facilities, and other responses. All variables except the status indicator were included as dummy variables. The main parameters of the linear regression model are summarised in the table below (Table 21).

In the significant model, gender, perceptions of the usefulness and content of daily physical education, teacher attitude, and other reasons were found to be significant; social status and facilities were not. According to the model, those who explained their opinions based on practical

experience in physical education and other aspects tended to have a more unfavourable opinion of the programme. In contrast, those who highlighted the usefulness of the programme and the attitude of the physical education teacher tended to have more favourable opinions. As observed in the analysis of variance, there was a non-significant effect, with males tending to express more favourable opinions and females more unfavourable ones. In the model, the strongest influencing factors were gender and other reasons, followed by usefulness and teacher attitude, and finally, the perception of the content of the physical education (PE) lessons. However, it should be noted that the explanatory power of the model as a whole is very weak, at only 10% - i.e., there may be many other underlying factors that influenced opinions about the programme.

Table 21: Factors influencing perceptions of daily physical education - linear regression analysis parameters

	<b>R</b>	<b>Adj R<sup>2</sup></b>	<b>Std.Error</b>	<b>Durbin-Watson test</b>	
<b>Model</b>	,112	,104	1,297	1,973	
<hr/>					
	<b>Sum of Squares</b>	<b>df</b>	<b>Mean square</b>	<b>F</b>	<b>Sig.</b>
<b>Regression</b>	121,071	5	24,214	14,385	0,000
<b>Residual</b>	959,973	570	1,683		
<b>Total</b>	1081,044	575			
<hr/>					
	<b>Unstandardised Coefficients</b>		<b>Standardised Coefficients</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
<b>Constans</b>	3,882	,246		15,766	,000
<b>Gender</b>	0.511	0.112	0.184	4.546	,000
<b>Other reasons</b>	-1.071	0.211	-0.205	-5.066	,000
<b>Usefulness</b>	0.431	0.115	0.15	3.749	,000
<b>Teacher's attitude</b>	0.342	0.11	0.124	3.118	,002
<b>Content</b>	-0.274	0.121	-0.091	-2.256	,024

Method: stepwise

Explained variable: what is your opinion about daily physical education?

Explanatory variables included gender (dummy), social status, whether opinion was influenced by the content of daily physical education (dummy), equipment (dummy), teacher's attitude (dummy), usefulness (dummy), other aspects (dummy)

**In my hypothesis H2, I hypothesised** that the factors influencing opinions about daily physical education show a different structure. Depending on the group of satisfaction with the provision of daily physical education: the influence of the teachers' personality and their institutional role function is evident in all opinion groups and shows a positive relationship (i.e. the

teacher's role is both pro and con); the utility dimension is more prominent among those satisfied with the programme; while the content dimension is more likely to determine the opinions of those who are dissatisfied with the provision of daily physical education.

I tested my hypothesis using logistic regression models. I constructed several models: first, I examined the group of students who expressed unfavourable opinions (very bad or rather bad) about daily physical education; then, I examined whether there was a difference in the emphasis of the explanations when the two evaluation categories were considered together. In subsequent models, I used a similar logic to examine students who had favourable opinions about the programme. The explanatory variables in the model were gender, status, and five factors that influenced the responses (content, facilities, teacher attitude, usefulness, and other aspects).

Five aspects significantly explain the negative perceptions of the programme (Table 22). The first is gender: men are less likely to hold fundamentally unfavourable views of the programme. However, those who mentioned the facilities or other aspects of PE classes in their evaluation (e.g. overcrowded timetables, lack of infrastructure) are more likely to have a negative opinion; those who mentioned the attitude of teachers or the usefulness of PE classes are less likely to have a negative opinion. The emphasis on each aspect is nearly the same, but the model exhibits relatively low explanatory power (~9%). There is also a difference in the structure of reasons between those with the most unfavourable opinions and those with slightly more nuanced opinions. Those who think that daily physical education is very bad are more likely to cite shortcomings in the facilities or other aspects (in addition to being more likely to be female). Students with a slightly more nuanced opinion are less likely to cite the content of the class, the teacher's attitude, the class's usefulness, or other aspects.

Three aspects increase the odds of positive opinions: gender (men are more likely to hold more positive opinions), teacher attitude, and perception of the lesson's usefulness (Table 23). The latter two aspects are more strongly weighted than the other opinion-determining aspects. The explanatory power of the model is not very high (~15%), but it is acceptable. If we also look at the nuances of the favourable ratings, we can see that, essentially, the same reasoning underlies the more "extreme" opinions. The explanatory power of the model is very low (6%) for students who are less strident.

Table 22: Factors influencing the negative perceptions of those who perceive daily physical education negatively, parameters of binary logistic regression models (N=1521)

Dependent variable:	very bad				rather bad				unfavourable (very and somewhat bad together)			
	B	Forest	Sig	Exp (B)	B	Forest	Sig	Exp (B)	B	Forest	Sig	Exp (B)
<b>your opinion on daily physical education</b>												
<b>gender (male)</b>	-9,33	9,594	,002	,393	,008	,001	,975	1,008	-,507	6,269	,012	,602
<b>status</b>	,046	,190	,663	1,047	,227	5,251	,022	1,255	,148	3,719	,054	1,160
<b>content (marked)</b>	1,670	16,299	,000	5,310	-,625	6,227	,013	,535	,334	2,339	,126	1,397
<b>equipment (marked)</b>	,333	1,315	,251	1,395	,168	,418	,518	1,183	,457	4,878	,027	1,579
<b>teaching attitude (nominated)</b>	-,097	,127	,721	,907	-,715	8,769	,003	,489	-,434	4,996	,025	,648
<b>usefulness (nominated)</b>	,144	,260	,610	1,155	-,959	15,629	,000	,383	-,460	5,489	,019	,631
<b>other (ticked)</b>	2,914	44,316	,000	18,436	-2,591	7,133	,008	,075	1,128	10,993	,001	3,089
<b>Constans</b>	-3,411	37,185	,000	,033	-,932	4,812	,028	,394	-1,024	8,604	,003	,359
<b>Chi<sup>2</sup></b>	68.807 (Sig=.000)				42.116 (Sig=.000)				35.631 (Sig=.000)			
<b>Naglerke R<sup>2</sup></b>	,201				,119				,085			

Table 23: Factors influencing respondents' views on the importance of daily physical education, parameters of binary logistic regression models (N=1521)

Dependent variable:	very good			rather good			favourable (very and rather good together)					
	your opinion on daily physical education											
	B	Forest	Sig	Exp (B)	B	Forest	Sig	Exp (B)	B	Forest	Sig	Exp (B)
gender (male)	,698	10,734	,001	2,009	,227	1,087	,297	1,255	,731	15,108	,000	2,077
status	-,043	,264	,607	,958	,095	1,205	,272	1,099	,041	,317	,573	1,042
content (marked)	,224	,845	,358	1,251	-,580	6,708	,010	,560	-,311	2,347	,126	,733
equipment (marked)	,031	,019	,891	1,032	-,728	8,290	,004	,483	-,443	4,702	,030	,642
teaching attitude (nominated)	,690	9,762	,002	1,994	,424	3,822	,051	1,528	,847	20,128	,000	2,332
usefulness (nominated)	1,299	24,959	,000	3,664	,062	,078	,779	1,064	,924	22,170	,000	2,520
other (ticked)	-1,289	5,858	,016	,276	-,236	,329	,566	,790	-,892	6,228	,013	,410
Constans	-2,751	44,122	,000	,064	-1,335	11,910	,001	,263	-1,215	13,103	,000	,297
Chi <sup>2</sup>	68.263 (Sig=.000)			22.512 (Sig=.002)			67,609 (Sig=.000)					
Naglerke R <sup>2</sup>	,166			,059			,148					

Overall, I can only partially confirm **my hypothesis (H2)**. I have confirmed that there are different rationales behind the perception of daily physical education, which differ from one opinion group to another. I hypothesised that the teacher's personality and the impact of the teacher's attitude would be important explanatory factors for both the satisfied and the dissatisfied: those dissatisfied with the programme would be dissatisfied with the teacher, and those satisfied with the programme would be satisfied with the teacher. Among the latter, there is indeed a perceived correlation, but for the dissatisfied, it is not a significant factor for those who express strong, judgmental opinions. I had assumed that the usefulness of the PE lessons would be a more prominent explanatory factor among those who were satisfied with the programme and the criticisms of the content among those who were dissatisfied with the programme: in the former group, my assumption was confirmed, but in the latter group this reasoning is only typical among those who are strongly critical. At the same time, there is one other aspect that can significantly influence the opinion of those dissatisfied with daily physical education: the perception of the conditions in which the physical education lessons are held.

## **Health awareness of students**

In the following section, we will examine how the study participants perceive their health, mental state, physical condition and fitness levels. The research also included social background variables (Eitle & Eitle, 2002) and the effect of mediating variables such as self-assessed health and subjective well-being, which may have a positive impact on academic performance later on (Castelli et al., 2007), and sport has a repercussion effect on these (Baltataescu & Kovács, 2012; 2013). To the extent that these positive attitudes, personality traits and values, which are also associated with sport, are perpetuated as a transfer effect of physical activity, they may also provide benefits in both personal and academic life and later in the labour market, which can be put to use outside the world of sport. This, in turn, can lead to prosperity beyond the university walls, and regular sporting activity can make students happier and more satisfied, not only directly but also indirectly, through higher lifestyle indicators.

## **Subjective health of students**

Overall, respondents consider themselves to be in rather good health: nearly a quarter (24%) are in very good health, and 52% are in rather good health - at least by their admission. Nearly one in four respondents (21%) reported being in average health, while 3% reported being in rather poor health (Figure 13).

Matching these responses to school grades, the average for the overall student sample is 3.95. Typically, those in better financial circumstances consider themselves to be in better health.

The differences in study characteristics are that those studying in the fields of medicine and health, as well as sports science and law, are also in better health or at least have a more favourable perception of their health. Not surprisingly, those who participate in sports have more favourable assessments, especially if they engage in competitive sporting activities.

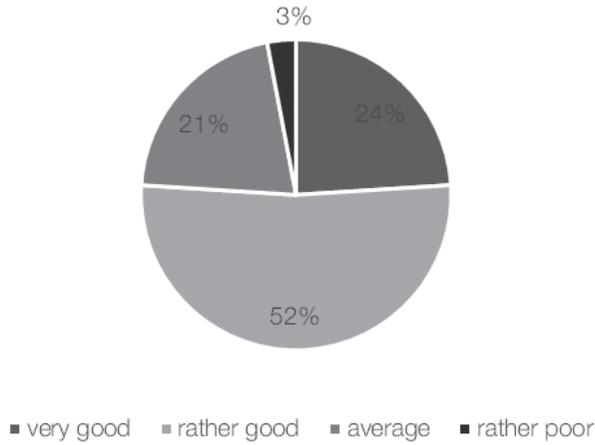


Figure 13: How would you rate your health? (% , N=1521)

### Students' mental health

Health depends not only on physical fitness but also on mental health, which is why I included questions in the questionnaire that sought to measure the mental or psychological well-being of respondents. As with health, the majority of students were either rather (49%) or very (22%) satisfied with their lives (Figure 14) and rather (50%) or very happy (14%) (Figure 15).

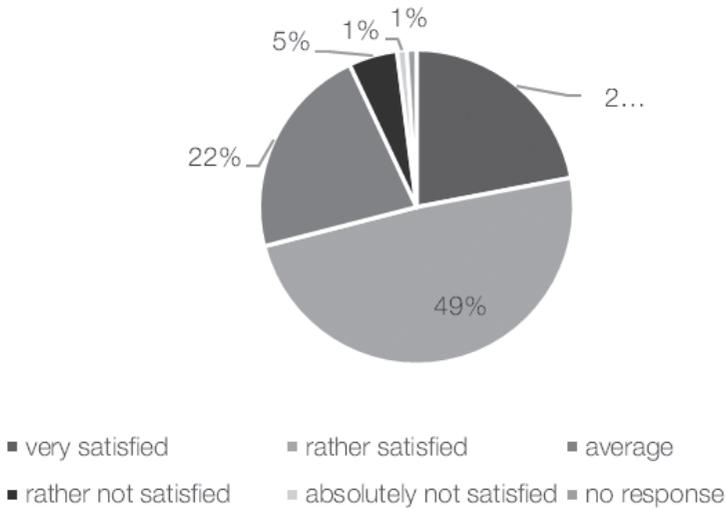


Figure 14: How satisfied are you with your life? (% , N=1521)

On both questions, between 5 and 7% are either rather or very dissatisfied or unhappy.

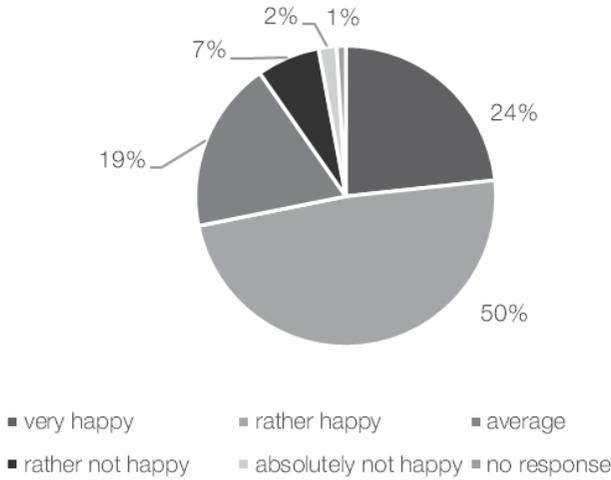


Figure 15: How happy do you consider yourself to be? (% , N=1521)

On a five-point scale corresponding to school grades, the sample average for both questions is 3.9. As with health status, essentially the same background variables are significant for these questions: wealth, the pursuit of sports studies and sports activity. The wealthier one is (or considers oneself to be in a balanced financial situation), the more likely one is to be satisfied and happier. Additionally, those who are active in sports and/or study sport-related studies are more satisfied and happier compared to other students (Table 24).

Table 24: How satisfied are you with your life, and how happy do you consider yourself to be? - by socio-demographic, academic and sporting activity characteristics of students (averages on a 5-point scale)

	Satisfaction	Happiness	F	sig.
	average	average		
SUBJECTIVE WEALTH SITUATION			(e) 81,535 (b) 58,511	(e) 0,000 (b) 0,000
very good, I have no financial problems	4,32	4,22		
good, I will be on schedule by the end of the month	3,86	3,93		
I'll just be out by the end of the month	3,53	3,47		
bad, I find it hard to get by in a month	2,65	2,79		
WEALTH QUANTILES			(e) 31,820 (b) 16,568	(e) 0,000 (b) 0,001
Q1	3,59	3,66		
Q2	3,84	3,94		
Q3	3,90	3,86		
Q4	4,17	4,09		

SPORTS STUDIES			(e) 13,864	(e) 0,000
not typical	3,84	3,86	(b) 11,811	(b) 0,001
typical	4,09	4,10		
SPORT ACTIVITY			(e) 19,667	(e) 0,000
competitive sport	4,12	4,13	(b) 20,188	(b) 0,000
recreational sport	3,87	3,90		
do not do sport	3,70	3,68		
OVERALL	3,88	3,89	-	-

(e): satisfaction (b): Happiness

We get a more nuanced and less positive picture of mental health when we ask about certain mental states. Most respondents reported feeling happy and cheerful (83%) and active and lively (59%) often or always during the two weeks preceding the survey. Only a relative majority (47%) felt calm and relaxed, and only a minority of the sample (26%) felt rested on waking up. The proportion of respondents who never felt rested on waking up during the period covered by the question was very high at 13% (Table 25).

Table 25: In the last two weeks, have you felt...? (% and means on a 5-point scale)

	Never	Some-times	Less often	Often	Always	NV	average
Happy, cheerful	<1%	6%	11%	71%	12%	0%	3,88
Active, lively	2%	9%	29%	48%	11%	<1%	3,57
Calm, relaxed	2%	15%	36%	41%	6%	1%	3,34
Wake up feeling rested	13%	25%	37%	22%	4%	<1%	2,80

Table 26: State of mind (In the last two weeks, have you felt...) - by socio-demographic, academic and sporting activity characteristics of students (averages on a 5-point scale)

	Happy, cheerful		Active, lively		Calm, relaxed		Wake up feeling rested		
	average	F	sig,	average	F	sig,	average	F	sig,
AGE GROUP		-	-		10,949	0,000		18,407	0,000
18-23 years old	*			3,47			2,65		
24-29 years old	*			3,62			2,89		
30-39 years old	*			3,65			3,24		
at least 40 years old	*			3,95			3,13		
SUBJECTIVE WEALTH SITUATION		14,535	0,000		16,510	0,000		31,244	0,000
very good, I have no financial problems	4,06			3,82			3,59		3,01
good, I'll be on schedule by the end of the month	3,85			3,56			3,36		2,79
I'll just be out by the end of the month	3,70			3,34			3,05		2,61
bad, I find it hard to get by in a month	4,01			3,19			2,52		2,14
SPORTS STUDIES		9,063	0,003		33,997	0,000		7,882	0,000
not typical	3,86			3,52			3,32		*
typical	4,02			3,92			3,51		*
SPORT ACTIVITY		9,497	0,000		22,716	0,000		7,181	0,000
competitive sport	4,04			3,78			3,42		2,77
recreational sport	3,85			3,60			3,38		2,87
do not do sport	3,81			3,32			3,20		2,65
OVERALL	3,88	-	-	3,57	-	-	3,34	-	2,80

\* not significant ( $p > 0.05$ )

Typically, older and wealthier people reported slightly more favourable mental tendencies than other respondents. As before, those involved in sports and those studying sport-related subjects also painted a more positive picture of their own lives (Table 26).

Principal component analysis allows us to reduce the content of mental state variables into a single measure (Table 27). The new variable retained 55% of the information content of the original variables, with an index mean of 3.6 points on a five-point scale.

Table 27: Mental parameters

	Municipalities
In the last two weeks, have you felt happy and cheerful?	,727
How happy do you consider yourself?	,775
Have you felt active, lively, active, lively in the last two weeks?	,777
Have you felt relaxed, calm, relaxed in the last two weeks?	,745
How satisfied are you with your life?	,748
In the last two weeks, have you felt rested when you woke up?	,676

Information retention rate: 55%

Table 28: Main components of mental health status - by socio-demographic, educational and sporting activity characteristics of students (averages on a five-point scale)

		Mental health status average	F	sig.
SUBJECTIVE WEALTH SITUATION			54,781	0,000
	very good, I have no financial problems	3,85		
	good, I'll be on schedule by the end of the month	3,58		
	I'll just be out by the end of the month	3,28		
	bad, I find it hard to get by in a month	3,89		
WEALTH QUARTILES			21,998	0,000
	Q1	3,38		
	Q2	3,56		
	Q3	3,60		
	Q4	3,75		
SPORTS STUDIES			19,377	0,000
	not typical	3,55		
	typical	3,77		
SPORT ACTIVITY			19,427	0,000
	competitive sport	3,72		
	recreational sport	3,59		
	do not do sport	3,41		
OVERALL		3,57	-	-

In light of the above, it is not surprising that the composite indicator reveals significant differences between the student groups in two factors: wealth and sporting activity. The wealthier someone is and the more likely they are to consider themselves in a balanced income situation, the higher their mental health score tends to be. Furthermore, the more actively one participates in sports, especially at a competitive level, the more balanced one's mental health is (Table 28).

***Students' subjective physical and fitness status***

10% of the university students surveyed consider their fitness level to be very good, while one-third consider it rather good (Figure 16). The relative majority of the sample (40%) "falls in the middle", i.e. reports neither good nor bad fitness. 12% reported a rather poor fitness level, 4% a very poor fitness level, and 1% no response.

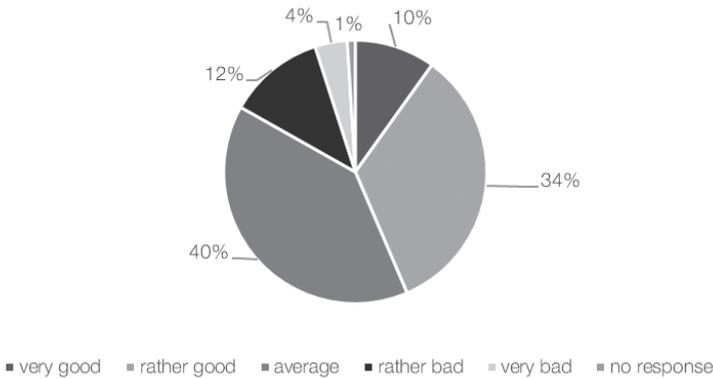


Figure 16: How would you rate your fitness level? (% of N=1521)

and 4% a very poor fitness level. The overall sample average for school grades is 3.3.

Men, those living in more urban areas, those with parents who have higher education, and those with more wealth tended to report better fitness than the rest of the student sample. Surprisingly, age had no significant effect on this question, with older respondents, on average, rating their physical fitness at the same level as younger respondents. Study characteristics have a significant influence on the fitness status of individuals involved in sport-related studies (4.0). The most significant difference - again, of course, not surprisingly - is in terms of whether or not one plays sport, and if one does play sport, whether or not it is competitive: the latter reported a much more favourable fitness status (Table 29).

Table 29: Fitness status - by socio-demographic, educational and sporting activity characteristics of students (averages on a five-point scale)

	fitness status	F	sig.
	average		
NO		58,011	0,000
Men	3,58		
Women	3,20		

SETTLEMENT TYPE		10,512	0,000
Capital	3,64		
county seat	3,42		
small town	3,38		
municipality	3,08		
PARENTS' SCHOOLING		4,567	0,003
up to 8 overall	2,86		
skilled worker	3,31		
graduated from high school	3,28		
graduate	3,41		
SUBJECTIVE WEALTH SITUATION		12,537	0,000
very good, I have no financial problems	3,55		
good, I'll be on schedule by the end of the month	3,35		
just got out at the end of the month	3,09		
bad, I find it hard to get by in a month	2,99		
WEALTH QUARTILES		7,427	0,000
Q1	3,23		
Q2	3,28		
Q3	3,31		
Q4	3,53		
SPORTS STUDIES		119,162	0,000
not typical	3,24		
Feature	4,02		
SPORT ACTIVITY		282,471	0,000
competitive sport	4,04		
recreational sport	3,46		
do not do sport	2,54		
OVERALL	3,34	-	-

I examined whether mental health or physical fitness had a greater impact on the overall health status. The test was conducted by establishing a linear regression model. The validity of the model is compromised by the fact that the explained variable (health status) is an ordinal

scale variable. However, the results can still be taken into account with some reservations. As we have seen above, certain socio-demographic, educational, and sports activity variables also influence mental and physical fitness status, so I have extended the set of explanatory variables in the model to include these groups of variables. The nominal explanatory variables were transformed into dummy variables and included in the model (Table 29).

*Table 30: Factors influencing perceptions of health status - linear regression analysis parameters*

	R	Adj R <sup>2</sup>	Std.Error	Durbin-Watson test	
Model	0,569	0,324	0,630	1,949	
	Sum of Squares	df	Mean square	F	Sig.
Regression	270,187	5	54,037	136,003	0,000
Residual	563,959	1419	0,397		
Total	834,146	1424			
	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
Constans	1,505	,162	-	9,314	,000
Mental state	,382	,030	,319	12,800	,000
Fitness status	,264	,019	,329	13,596	,000
Subjective financial situation	-,091	,026	-,082	-3,548	,000
Individual autonomy	,005	,001	,077	3,429	,001
Sports studies	-,146	,052	-,064	-2,825	,005

*Method: stepwise*

*Explained variable: how would you rate your health?*

*Explanatory variables included: perception of fitness status, principal component of mental health status, gender (dummy), age, type of municipality, parental education, subjective perception of wealth, wealth quartiles, institution (dummy), grade (dummy), type of education (dummy), sport studies (dummy), participation in daily physical education (dummy), sport activity (dummy), material value dimension, traditional value dimension, individual autonomy value dimension*

The model's explanatory power is 33%, and the Durbin-Watson test indicates a good fit (1.949). Out of the nearly twenty explanatory variables included, only five showed significant influence: mental health status, physical fitness status, subjective financial status, the value dimension of individual autonomy and the profession related to sports activity. The results show that mental health and fitness have the most decisive influence (Beta = .319 and .329),

followed by the other three explanatory variables, which have almost equal influence. The more favourable the mental state (well-being) and fitness of students, the more favourable their experience of their health will be. More favourable health status is also positively influenced by values related to individual autonomy and perceptions of a more favourable financial situation.<sup>8</sup> . Those who study sports tend to have a more negative perception of their health. As we saw earlier (Table 30), the two-dimensional comparison showed the opposite. The reason for this discrepancy is that there are no respondents among students who are studying sport-related studies who consider their fitness to be very poor; thus, the responses of respondents who are not studying sport-related studies and who are in poor fitness ‘dwarf’ the average for their group.

## **The link between daily physical education and health awareness**

The next chapter will discuss the relationship between participation in and perceptions of daily physical education and students’ health behaviours. As the dissertation has a limited scope, only the most relevant indicators are examined. I measured several indicators of health behaviour using the dimensions presented in the previous chapters: subjective physical and mental health, sports activity, preventive health behaviours (physical activity, nutrition), and risk factors (smoking, alcohol consumption, drug experimentation, and stress factors).

Before presenting my results in detail, I would like to point out two interpretive limitations. The first is a general social science methodological problem, namely that causal relationships are not, or only very difficult to measure using the conventional research method, which is the one used in my dissertation. In the questionnaire survey (in addition to the methodological difficulties of online data collection), I used random sampling to select the group of students to be included in the study, but this is not the same as the random selection method. If I were to find out beyond doubt whether daily physical education is the cause of greater physical activity and healthier behaviour, I would have had to select a group of students that was sufficiently representative of the age group under study much earlier than the measurement time horizon and follow the life course of this group, or - for example, by using an experimental method - to split the sample into two groups according to who participates in the educational programme and who does not. This is not possible in the context of such a study. In a random sample, even one as carefully selected as this, it is never possible to know exactly (and I do not think we have any prior knowledge of this) what the attitudes and characteristics of the groups being compared are in terms of sporting and health awareness. So, we cannot say whether participation in the programme or the opinion of the programme influences the characteristics described at the time of measurement. For these reasons, I will treat causal relationships and effects as ‘synonyms’ for cooccurrences, i.e. I will attempt to describe which health behaviour factors are descriptive of specific characteristics and which are less descriptive of others. The second analytical limitation concerns the fact that the educational programme under examination is always applicable to all age groups younger than a given age since its introduction is compulsory for all during their secondary school studies.

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<sup>8</sup> The negative sign in the model is due to the inverse categorisation of the background variable describing subjective material well-being (low values indicate a more favourable perception).

On the other hand, specific characteristics of sporting activity and health behaviour are, as has also been shown above, in many cases, a function of age. However, it is not possible to completely separate the ‘impact’ of age from the ‘impact’ of the programme. This analytical difficulty cannot be resolved. I can only refine it by examining age influence in a more detailed breakdown - assuming that if age has a role in the aspects under study, it exhibits some linearity. These two methodological constraints must, in any case, be taken into account when interpreting the data.

### ***The link between daily physical education and sporting activity***

In the previous chapters, I have attempted to operationalise the phenomenon of whether someone is ‘on the move’ and to what extent they lead an active lifestyle. One of these indicators relates to sporting activity: 17% of the students surveyed play sports competitively, 59% play sports as a hobby, and 24% do not participate in sports at all. Using these characteristics and the frequency of activity, I have created a six-point ‘physical activity scale’, with the lowest value indicating a sedentary lifestyle and the highest value indicating a competitive lifestyle, with at least weekly activity. The mean of the scale across the entire student sample was 4.1 (hypothetical mean 3.5), meaning that the sample as a whole is more likely to lead an active lifestyle than not.

The primary question in this chapter is how participation in daily physical education is related to activity characteristics and how much this relationship is influenced by the sporting and activity environment in which the student resides (or partly originates from).

The relationship between participation in daily physical education and physical activity is somewhat contradictory (Figure 17). On the one hand, there is no difference between the groups of students who participate in the programme and those who do not: both subgroups have between 23 and 24% of students who do not participate in sports. However, the proportion of those who participate in the programme who play sport competitively is currently twice as high, and the proportion who play sport as a hobby is lower. In other words, if there is any correlation, it is most likely to be at the level of activity.

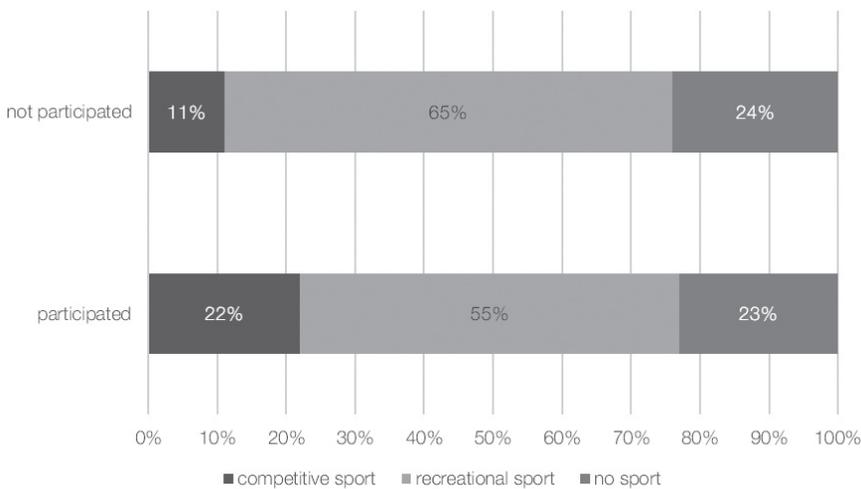


Figure 17: Physical activity by whether the respondent participated in daily physical education in secondary school (%; N=1521,  $\chi^2=31.099$ ; Sig=0.000)

Across the whole sample, the proportion of competitive and recreational athletes decreases with age (Table 31), while the proportion of non-athletes is high (44%) in only one age group (30-39-year-olds). However, the effect of age does not show a significant effect within the group for whom daily physical education was compulsory (18-21 year-olds), but only for those older than this age group.

However, in this group, there is no significant effect of daily participation in physical education.<sup>9</sup> : among those aged 22 or over, the same proportion of competitive and recreational athletes and non-athletes are present if they have had physical education every day.

Table 31: Sports activity by age (%)

	<b>play sport competitively</b>	<b>play sport as a hobby</b>	<b>do not play sport</b>
18 years old*	34%	51%	14%
19 years old*	26%	<u>52%</u>	23%
20 years old*	30%	<u>43%</u>	27%
21 years old*	19%	55%	26%
18-21 years old*	25%	50%	25%
22 years old	16%	<u>66%</u>	18%
23 years old	16%	61%	22%
24 years old	11%	<u>69%</u>	19%
25-26 years old	17%	66%	17%
27-28 years old	10%	62%	28%
29-30 years old	6%	<u>86%</u>	<u>8%</u>
31-39 years old	8%	<u>48%</u>	<u>44%</u>
at least 40 years old	6%	<u>69%</u>	25%
Over 22 years old	13%	64%	23%
OVERALL	17%	59%	24%

\*Compulsory daily physical education for the age group

$Chi^2=102.621$  Sig=0.000

The physical activity scale shows the same correlations (Table 32, Appendix). First, there is no significant difference in the scale means between students who participated in the programme and those who did not ( $F = 2.493$ ,  $P = .115$ ). On the other hand, the effect of age on the overall sample is significant. However, the activity rate typically declines significantly in the

<sup>9</sup> The members of this group typically attended secondary schools where sports and physical education were given special attention or where daily physical education had been introduced earlier.

30-39 age group, and the differences among those under 21 are not significant ( $F = 1.083$ ,  $P = .356$ ). Thirdly, among those aged 22 and over, participation in daily physical education has no significant effect on physical activity levels ( $F = 0.000$ ,  $P = .992$ ). All this suggests that the effect of daily physical education alone on physical activity levels is not evident, i.e. there is no apparent influence of this factor in this group of students. (Whether this result is specific to this group of students, who are of higher status and higher cultural capital than the “average”, will be discussed when we examine H6.)

In the following, I will examine whether opinions about daily physical education are associated with lifestyle activity characteristics. Of course, the nature of the relationship may be trivial on the one hand: someone who likes to exercise or has a good impression of daily physical education is not surprisingly characterised by higher activity levels even after the secondary school years. On the other hand, it is not, since what I am checking here is whether the extra physical activity in the school context itself creates a demand for an active lifestyle later on. Suppose the activity levels of those who are dissatisfied with the programme are similar to those of those who are satisfied. In that case, the programme of daily physical education must be considered to be effective. If, on the other hand, the activity levels of the dissatisfied are lower, the secondary school programme is a nuisance for students who dislike physical activity and offers no short-term benefits. However, in the context of this research, I cannot control for the proportion of people who have taken up physical education in primary or secondary school, so regardless of the outcome measured, there may be a meaningful outcome of the programme.<sup>10</sup>

A typical correlation across the entire sample is that there is a lower proportion of competitive athletes—and to some extent, also of recreational athletes—who are more dissatisfied with their daily physical education and a higher proportion of those who do not participate in any sport at all. However, those who were satisfied with their daily physical education also had higher activity levels (Table 33). The correlation is also evident in the age group of those aged 21 years or less who had compulsory daily physical education (Table 34). For those older than this age, this relationship is also apparent, especially for the ‘extreme’ categories (satisfied and engaging in sports; dissatisfied and not engaging in sports).

*Table 33: Physical activity by opinion group on daily physical education among those who participated in the programme (%)*

	<b>play sport competitively</b>	<b>play sport as a hobby</b>	<b>do not play sport</b>
very bad	<u>14%</u>	54%	<u>32%</u>
rather bad	15%	<u>41%</u>	<u>44%</u>
is-is	<u>15%</u>	58%	27%
rather good	25%	62%	<u>12%</u>
very good	<u>30%</u>	58%	<u>12%</u>
OVERALL	17%	59%	24%

$Chi^2=74.351$  Sig=0.000

<sup>10</sup> In order to answer this, in addition to the methodological problem mentioned at the beginning of this chapter, we should at least know what proportion of people liked to exercise (satisfaction with physical education) at „entry” (primary or secondary school).

Table 34: Sporting activity by age and opinion group about daily physical education among those who participated in the programme (%)

	18-21 years old			at least 22 years old		
	play sport competitively	play sport as a hobby	do not play sport	play sport competitively	play sport as a hobby	do not play sport
very bad	20%	47%	33%	0%	70%	30%
rather bad	13%	38%	50%	19%	48%	33%
is-is	22%	44%	34%	4%	81%	15%
rather good	35%	54%	12%	4%	87%	9%
very good	26%	65%	9%	37%	48%	15%
OVERALL	25%	50%	25%	17%	66%	18%
Chi <sup>2</sup>	66,381			63,015		
Sig	0,000			0,000		

If we look at the mean scores on the physical activity scale rather than sports activity, we find the same relationship (Table 36). Whether we examine the entire sample or the age breakdown, satisfaction with daily physical activity and a sedentary lifestyle are correlated: those who are dissatisfied tend to have a more sedentary lifestyle. However, one more thing can be seen from the table below: the relationship between the two indicators is not linear, so it is more likely that those who are explicitly satisfied with the programme are characterised by high levels of activity (especially among those aged 22 and over). Students who have made or expressed criticisms of the programme are currently showing average or lower levels of activity. This suggests that daily physical education may have been more beneficial for students who were already keen on sports and that it did not have a significant short-term impact on the activity levels of those who were not keen on physical activity during their (primary and/or) secondary school years.

Table 36: Physical Activity Scale by age and opinion group on daily physical education among those who participated in the programme (means on a six-point scale)

	OVERALL	18-21 years old	at least 22 years old
very bad	3,9	3,9	3,7
rather bad	3,7	3,6	3,9
is-is	3,9	3,8	4,0
rather good	4,5	4,9	3,9
very good	4,6	4,7	4,5
OVERALL	4,1	4,3	4,1
F	12,745	13,946	0,000
Sig	0,000	2,936	0,020

## The social pattern of sport

As the student population under study lives in a disadvantaged region, the socio-demographic characteristics of the student population cannot be ignored when characterising the factors influencing physical activity. In the next section, I will seek answers to the question of the effects of sport on different social levels within student groups.

Attending sporting events and going on excursions and hikes are typically a social activity. This is evident in the fact that only 7% of respondents reported participating in such activities alone. In comparison, 76% do so within some social circle (17% stated that they do not participate in such events). The social circle comprises a mix of friends and acquaintances from university, as well as individuals who are not part of the school circle. However, it is more typical for students to prefer attending these activities with people they have met before (Figure 18) if they are looking for this kind of recreation.

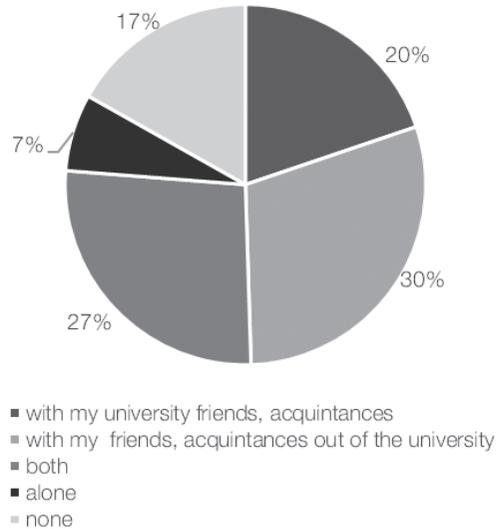


Figure 18: With whom do you usually go to sporting events, excursions, and hiking trips? (% , N=1521)

The question arises as to what social patterns are followed by those who engage in sporting activities. Those who play sports are more likely to be involved in sports among close family members and acquaintances. More than seven-tenths of the students surveyed reported that a fellow student regularly participates in some form of sports activity. Almost two-thirds of respondents (63%) have a best friend who (also) plays sports, so the peer group effect is very marked. Around one in two students indicated that a distant family member (53%), a brother or sister (49%), or a teacher (51%) plays sport. Between one-third and one-third of the sample identified their partner (35%) or both/all parents (31%) as being involved in sport (Figure 19).

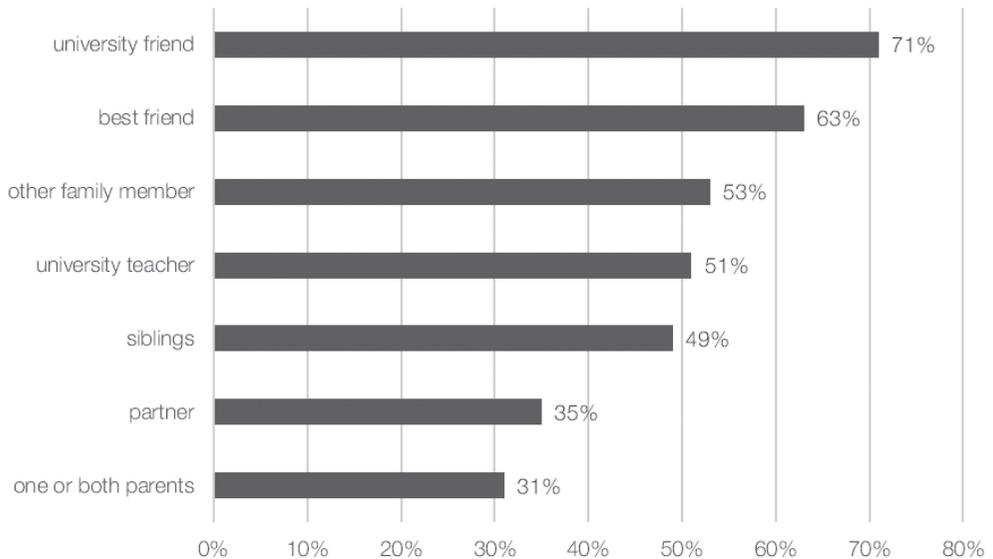


Figure 19: Who plays sport in your neighbourhood (% , N=1521)

If we take into account the number of different influences on the respondent's environment<sup>11</sup> Concerning sports, on average, three types of persons or groups were mentioned (Table 36). This average is strongly influenced by the age of the respondent (younger people reported more impacts, older people less), the urbanisation of their place of residence (more impacts in cities), the education of the parents (higher educated people reported more impacts) and the subjective financial situation of the respondent (the more favourable financial situation is associated with more impacts).

Table 36: Sport-related impact groups - by main socio-demographic characteristics of students (averages and %)

	Impact			family effect			contemporary impact		
	ave- rage	F	sig	%	Chi2	sig	%	Chi2	sig
AGE GROUP		13.034	0,000		41,919	0,000		-	-
18-23 years old	3,2			80%			*		
24-29 years old	3,0			77%			*		
30-39 years old	2,7			80%			*		
at least 40 years old	2,3			51%			*		

<sup>11</sup> Summarise the number of „yes” answers to the above question (excluding the answers for the university lecturer).

TYPE OF SETTLEMENT		9,732	0,000		20,736	0,000		-	-
Capital	3,7			<u>97%</u>			*		
county seat	3,1			76%			*		
small town	3,1			<u>83%</u>			*		
municipality	2,7			<u>72%</u>			*		
PARENTS' EDUCATION		19,984	0,000		60,606	0,000		-	-
up to primary	2,2			<u>52%</u>			*		
skilled worker	2,6			<u>67%</u>			*		
graduated from high school	2,9			<u>73%</u>			*		
graduate	3,3			<u>86%</u>			*		
SUBJECTIVE WEALTH SITUATION		17,651	0,000		31,994	0,000		-	-
very good, I have no financial problems	3,2			81%			*		
good, I will be on schedule by the end of the month	3,1			<u>80%</u>			*		
I will be out by the end of the month	2,7			<u>70%</u>			*		
bad, I find it hard to get by in a month	1,7			<u>43%</u>			*		
OVERALL	3,0	-	-	78%	-	-	92%	-	-

Among the educational characteristics of the respondents, it is most noteworthy that those whose degree is related in some way to sport or physical education reported more environmental impacts (Table 37). Broken down further, if we distinguish between the effects from the family sample (i.e. counting the sporting activity of parent(s), siblings, and other family members) and the effects from the peer group (i.e. counting the sporting activity of their partner, friend, university peers), we can see that peer effects are slightly more dominant (92% of students reported at least one such effect) than the sample from the family (78%). For socio-demographic characteristics, the differences outlined earlier are entirely due to differences in family background. Differences in educational characteristics are reflected in both family and peer effects.

Table 37: Sport-related impact groups - by main training characteristics of students (averages and %)

	Impact			family effect			contemporary effect		
	average	F	sig	%	Chi2	sig	%	Chi2	sig
TYPE		37,377	0,000		11,226	0,001		19,472	0,000
full-time	3,1			80%			93%		
part-time	2,6			71%			86%		
FIELD OF SCIENCE		11,714	0,000		39,333	0,000		61,979	0,000
pedagogy, education	2,3			69%			78%		
medicine and health sciences	3,2			79%			91%		
economics	3,3			86%			92%		
sports science	3,8			86%			99%		
engineering science	2,8			79%			89%		
arts	2,8			67%			86%		
social sciences	1,7			36%			100%		
agricultural science	2,8			63%			91%		
natural science	3,3			82%			100%		
humanities	3,0			75%			97%		
law and management	2,6			80%			90%		
SPORTS STUDIES		77,003	0,000		6,594	0,010		16,903	0,000
not typical	2,9			77%			91%		
typical	3,8			85%			100%		
OVERALL	3,0	-	-	78%	-	-	92%	-	-

As we have seen earlier, nearly a quarter of students do not participate in sports, 59% do so as a hobby, and 17% participate in local or major competitions. However, a larger proportion of the sample than these proportions are those who, although at different frequencies, do some intensive physical activity for at least 45 minutes (outside of the compulsory PE course). Of course, the question overlaps with the question on sports, but it nevertheless includes a larger range of students in the ‘sports’ and ‘physical activity’ groups. Almost three in ten students engage in at least 45 minutes of physical activity at least three times a week, and a further 28% do so one or two times a week. A

fifth of respondents do some form of physical activity at least once a month. A similar proportion of respondents do only one or two physical activities per year or never (Figure 20).

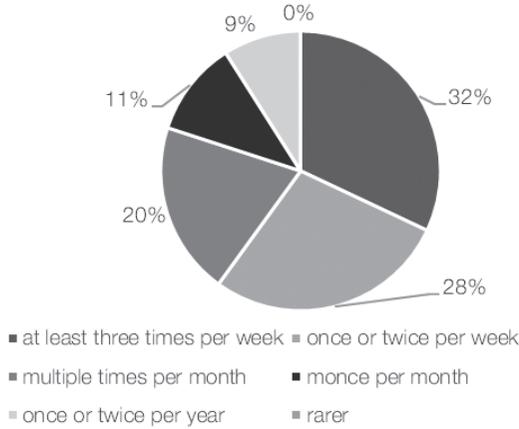


Figure 20: In addition to the compulsory physical education course, how often have you recently done an intensive sports activity lasting at least 45 minutes? (% , N=1521)

Not surprisingly, a higher proportion of competitive athletes are those who exercise more frequently for 45 minutes or more, while a lower proportion are those who do not exercise or exercise at a lower frequency. Among those who participate in sports as a hobby, 34-35% exercise at least three times a week for nearly an hour or two. Approximately 23% exercise several times a month, and 8% exercise less often (Figure 21).

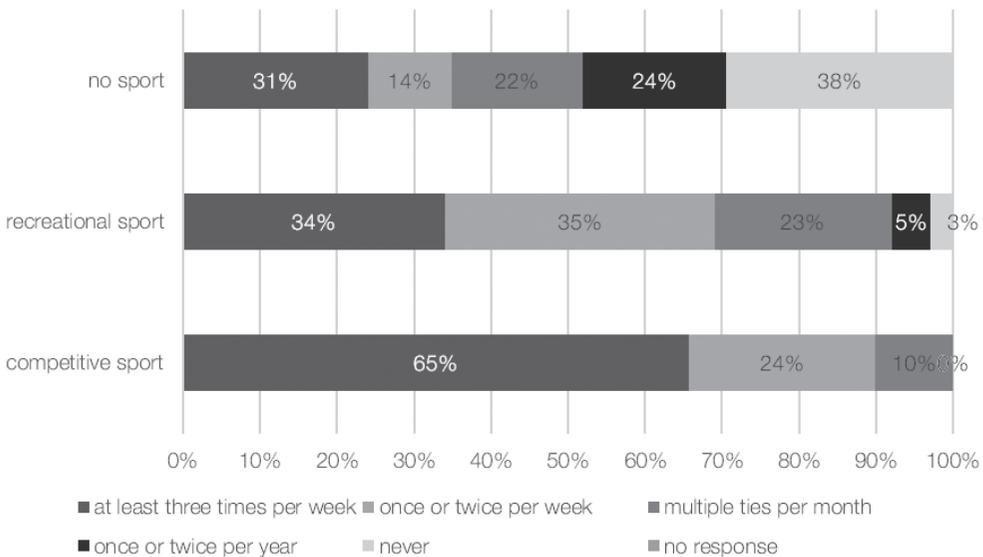


Figure 21: How often have you recently done an intensive sporting activity lasting at least 45 minutes outside a compulsory PE course, depending on whether you do sport (% , N=1521)

Sports activity is influenced by broadly the same background characteristics as I have shown earlier when analysing the level of sports activity. These influencing factors can be illustrated by constructing a scale of the variables level of sporting activity and frequency of sporting activity, with high values indicating frequent, competitive sporting activity and low values indicating virtually no sporting activity. The distribution of the scale and the observed frequencies in the sample are presented in the table below (Table 38).

Table 38: Physical activity scale design and distribution

level of sporting activity	frequency of sporting activity	scale score	frequency
play sport competitively	at least once a week	6	15%
play sport competitively	less often than once a week	5	42%
sports as a hobby	at least once a week	5	
sports as a hobby	several times a month	4	14%
sports as a hobby	a few times a year, never	3	9%
do not do sport	at least once a week	3	
do not do sport	several times a month	2	5%
do not do sport	a few times a year, never	1	15%
OVERALL			100%

The mean of the scale across the whole sample is 4.1. Men, people from large cities, people with a university degree, and those from more advantaged financial backgrounds are characterised by higher levels of physical activity (Table 39).

Table 39: Physical activity scale - by socio-demographic background characteristics (means on a six-point scale)

	physical activity scale	F	sig
GENDER		102.89	0,000
Men	4.6		
Women	3.8		
AGE GROUP		9.221	0,000
18-23 years old	4.2		
24-29 years old	4.2		
30-39 years old	3.4		
at least 40 years old	3.9		
TYPE OF SETTLEMENT		9.158	0,000
Capital	4.9		
county seat	4.3		
small town	4		
municipality	3.8		

PARENTS' EDUCATION		17.6	0,000
up to priary	2.9		
skilled worker	4		
graduated from high school	3.8		
graduate	4.4		
SUBJECTIVE WEALTH SITUATION		8.512	0,000
very good, I have no financial problems	4.3		
good, I will be on schedule by the end of the month	4.1		
I'm just coming out at the end of the month	4		
bad, I find it hard to get by in a month	3		
OVERALL	4.1	-	-

Among the educational characteristics, students whose degree is in some way related to sports and physical education (5.4) stand out the most (*Table 40*).

*Table 40: Physical activity scale - by training characteristics  
(means on a six-point scale)*

	physical activity scale	F	sig
INSTITUTE		4.378	0.037
University of Debrecen	4.1		
University of Nyíregyháza	3.9		
TYPE		26.632	0,000
full-time	4.2		
part-time	3.7		
FIELD OF SCIENCE		19.939	0,000
pedagogy, education	3.4		
medicine and health sciences	4		
economics	4		
sports science	5.3		
engineering science	4		
arts	3.7		
social sciences	1.4		
agricultural science	4.3		
natural science	4.8		
humanities	3.7		
law and management	4		

SPORTS STUDIES		152.434	0,000
not typical	3.9		
typical	5.4		
TEACHING, TEACHING PROFESSION		13.348	0,000
not typical	4		
typical	4.5		
OVERALL		-	-

By highlighting the smallest averages on the scale, it is possible to identify the groups that are characterised by sedentary lifestyles: women, 30-39-year-olds; people living in communes; people with low-educated parents; people with low economic status; people working in the arts, social sciences and humanities (Table 41).

Table 41: Factors affecting the physical activity scale - parameters for linear regression analysis

	R	Adj R <sup>2</sup>	Std.Error		
Model	0,313	0,095	1,528		
	Sum of Squares	df	Mean square	F	Sig.
Regression	366,435	5	73,287	31,390	0,000
Residual	3371,604	1444	2,335		
Total	3738,039	1449			
	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
No	,801	,083	,242	9,627	,000
Type of settlement	-,204	,052	-,100	-3,895	,000
Parents' education	,138	,054	,068	2,569	,010
Subjective financial situation	-,185	,059	-,080	-3,135	,002
Age	-,016	,006	-,066	-2,550	,011

Method: stepwise

Explained variable: physical activity scale

Explanatory variables included gender (dummy), age, type of settlement, parents' education, subjective perception of wealth<sup>12</sup>, wealth quartiles, material value dimension, traditional value dimension, individual autonomy value dimension

<sup>12</sup> The negative sign in the model is due to the inverse categorisation of the background variable describing subjective material well-being (low values indicate a more favourable perception).

It is also notable that the socio-demographic effects described above account for only 10 per cent of the total variance of the scale, indicating a significant degree of speculation about other reasons why a student participates in or does not participate in sport. In the following, we examine the explanations provided by the students included in the study for these questions.

## Motivations for Student Inactivity

Those who reported not exercising and those with a distinctly sedentary lifestyle (scoring one on the activity scale) have essentially the same response structure regarding why they do not engage in this area of their life (Figure 22). The most common avoidance response was that they did not have the time (80% and 86%, respectively). A third of the groups concerned are not interested in sport (33% and 32%), and a quarter to three-tenths have no money for this activity (28% and 26%). Almost the same proportion chose not to participate in sports (24% and 22%). Around a fifth of the sample reported that their health did not allow them to participate in sports (17% and 20%).

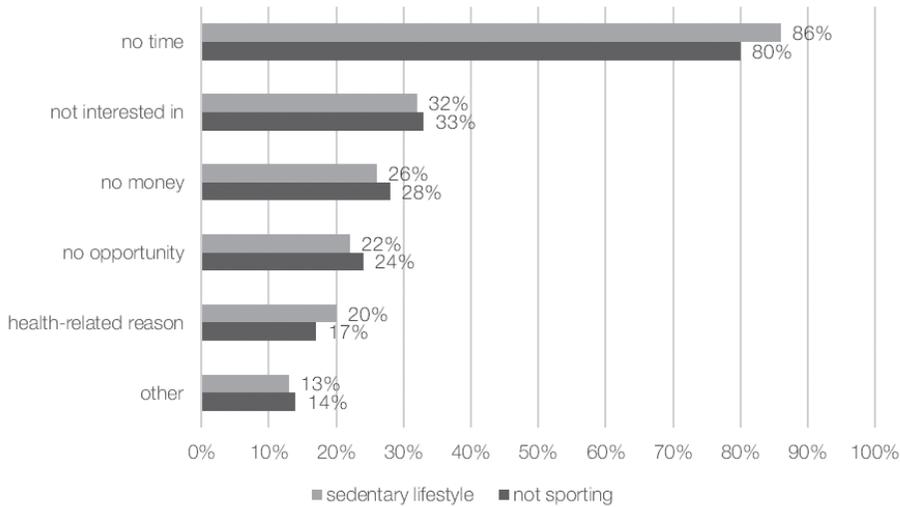


Figure 22: What is the reason for not exercising - among those who do not exercise and those who lead a sedentary lifestyle (% , N=1521)

Different socio-demographic groups have varying levels of education about why they do not participate in sports (Table 42). Men are more likely to say that they are not interested in sports or that they lack the opportunity to play sports. Women, on the other hand, are more likely to say that they have neither the time nor the money for sport. Older students tended to highlight a lack of time, while younger students tended to highlight a lack of interest and money. Health reasons were cited partly by the youngest (“injured”) and partly by the oldest (“too old for it”). According to the survey data, the effect of the slope of the settlement also has an impact on interest in sport, with those living in less urbanised settlements being more likely to cite this. The influence of parental education yields a surprising result, with higher proportions of people from more educated (especially

graduate) families stating that they cannot afford sports (although this group of students is the most financially well-off and, as we have seen, the group with the highest levels of sporting activity). The discrepancy may be resolved by the fact that this is a value choice, that the children of non-sports graduates “regret” the financial expenditure on sport, or at least prefer to spend it on other things. We also see interesting correlations by wealth. On the one hand, the extent to which the lack of financial resources is cited decreases linearly with the wealth of the student group.

On the other hand, when examining the subjective financial situation, the proportion of those who report the most disadvantaged situation is relatively low. This is a coping mechanism: they are uncomfortable with the idea of not having money, so they prefer to cite another reason (in our case, not being interested in sports). In any case, the differences in the education of parents and the differences between students grouped according to their financial situation suggest that, although I asked about a seemingly concrete, “objective” fact, there are more complex reasons behind the answers. Previous national and international research has consistently demonstrated higher levels of sporting activity among individuals of higher social status, who have more available financial resources, more health-conscious values, and a greater cultural habit of engaging in sport (e.g., Bourdieu, 1984; Witshire, 2019). Nagy et al. (2018) also found that young people with higher socio-economic status have more favourable fitness indicators

Table 42: Why don't you do sport? among those who do not do sport, by socio-demographic background characteristics (%)

	<b>not interested in</b>	<b>no time for it</b>	<b>no possibility</b>	<b>you do not have the money</b>	<b>for health reasons</b>	<b>other</b>
<b>GENDER</b>						
Men	<u>55%</u>	<u>64%</u>	<u>35%</u>	<u>15%</u>	*	*
Women	<u>28%</u>	<u>84%</u>	<u>21%</u>	<u>32%</u>	*	*
<b>AGE GROUP</b>						
18-23 years old	33%	<u>75%</u>	*	30%	<u>22%</u>	*
24-29 years old	<u>44%</u>	84%	*	<u>41%</u>	<u>4%</u>	*
30-39 years old	22%	<u>95%</u>	*	<u>7%</u>	<u>2%</u>	*
at least 40 years old	<u>16%</u>	<u>97%</u>	*	18%	<u>35%</u>	*
<b>TYPE OF SETTLEMENT</b>						
Capital	-	*	*	*	*	*
county seat	<u>22%</u>	*	*	*	*	*
small town	36%	*	*	*	*	*
municipality	<u>41%</u>	*	*	*	*	*

PARENTS' EDUCATION						
up to primary	52%	*	*	<u>6%</u>	*	*
skilled worker	23%	*	*	<u>16%</u>	*	*
graduated from high school	33%	*	*	26%	*	*
graduate	36%	*	*	<u>40%</u>	*	*
SUBJECTIVE WEALTH SITUATION						
very good, I have no financial problems	40%	*	*	<u>8%</u>	*	*
good, I will be on schedule by the end of the month	36%	*	*	27%	*	*
I'm just coming out at the end of the month	<u>19%</u>	*	*	<u>60%</u>	*	*
bad, I find it hard to get by in a month	46%	*	*	26%	*	*
WEALTH QUANTILES						
Q1	37%	76%	*	<u>47%</u>	*	*
Q2	33%	72%	*	31%	*	*
Q3	<u>19%</u>	<u>92%</u>	*	<u>19%</u>	*	*
Q4	<u>43%</u>	81%	*	<u>15%</u>	*	*
OVERALL	33%	80%	24%	28%	17%	14%

\*not significant ( $p > 0.05$ )

Non-sporting full-time students were more likely to cite a lack of interest and lack of funds, while correspondence students were more likely to cite a lack of time. Those studying on a part-time course (typically in fields such as medicine, law, and teaching) cited a lack of time and money as reasons. By field of study, it is typical that humanities students are less interested in sports; medical, social sciences, agriculture, natural sciences and law students lack time; humanities and medical students lack money; and science and law students are in good health to be able to participate in sport regularly (Table 43). For students in teacher training, the teaching profession, by its very nature, requires healthier, more exemplary behaviour, including regular physical activity. In a recent study by Kovács and Nagy (2021), 67.3% of the student teachers surveyed participated in sports at least as a hobby, which reflects the high frequency of sporting activity shown in the study's results. In addition, the results of a previous study of teacher education students also showed that a higher proportion of teacher education students participate in sports compared to their kindergarten and teacher education counterparts. Furthermore, sports participation may also be an important aspect of students' embeddedness in the institution (Kovács, 2015, 2020), which is usually high among teacher education students.

Table 43: Why do you not do sport - among those who do not do sport, by training background characteristics (%)

	not interested in	no time for it	no possibility	you do not have the money	for health reasons	other
TYPE						
full-time	<u>37%</u>	<u>76%</u>	<u>28%</u>	<u>36%</u>	*	*
part-time	<u>24%</u>	<u>89%</u>	<u>14%</u>	<u>10%</u>	*	*
LEVEL						
Bachelor level	*	79%	<u>29%</u>	<u>21%</u>	*	*
Master level	*	<u>60%</u>	<u>4%</u>	32%	*	*
undivided	*	<u>96%</u>	16%	<u>59%</u>	*	*
FIELD OF SCIENCE						
pedagogy, education	28%	83%	_	<u>24%</u>	12%	*
medicine and health sciences	33%	<u>94%</u>	*	38%	10%	*
economics	45%	78%	*	34%	8%	*
sports science	12%	74%	*	36%	14%	*
engineering	37%	<u>72%</u>	*	25%	22%	*
arts	42%	83%	*	16%	10%	*
social sciences	<u>3%</u>	100%	*	<u>3%</u>	26%	*
agricultural science	22%	94%	*	21%	6%	*
natural science	<u>4%</u>	94%	*	9%	<u>79%</u>	*
humanities	58%	<u>51%</u>	*	<u>41%</u>	10%	*
law and management	<u>4%</u>	94%	*	<u>4%</u>	<u>40%</u>	*
OVERALL	33%	80%	24%	28%	17%	14%

\*not significant ( $p > 0.05$ )

### **Factors for active, health-promoting behaviour**

From the perspective of preventive health behaviour, the level and frequency of physical activity are the most important factors in our topic, so I would like to focus on these aspects. I was looking for motivational factors for student sports.

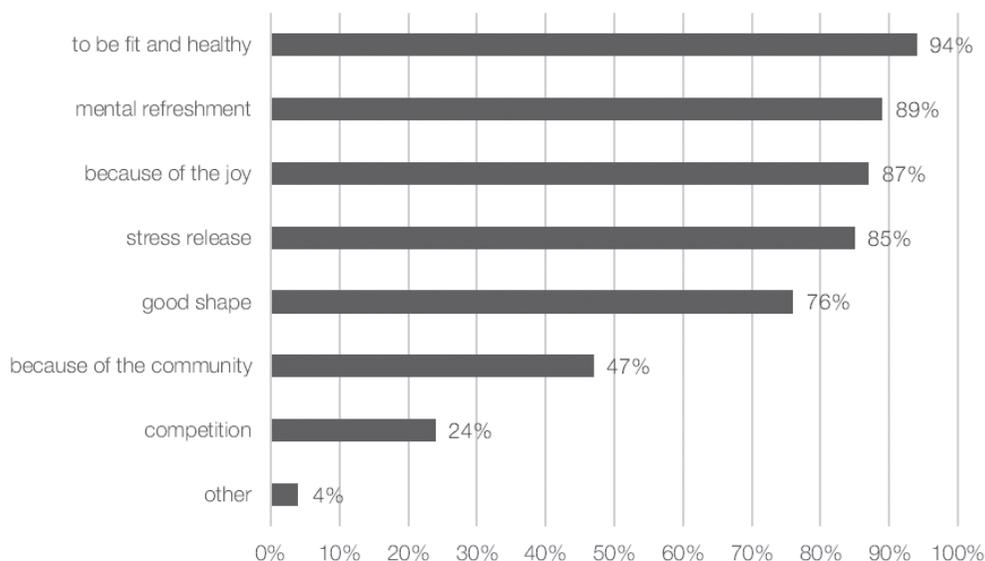


Figure 23: Why do you think it is important to do sport - among those who do (% , N=1521)

There was less variation in the reasons given for taking part in sport (among those who said they did), with almost all (94%) of the students concerned saying they wanted to be fit and healthy through sport, but a considerable number also said they looked for/saw sport as a mental refreshment (89%), a source of pleasure (87%) or a way to combat stress (85%). Three-quarters of the students concerned (76%) believed that their sporting activity helped them to look good. Just under half (47%) of respondents participate in sports for the community, while just under a quarter (24%) do it for the competition. The relatively low proportion of the latter two aspects is not surprising, given that the majority of students who participate in sports play individual or non-competitive sports (Figure 23).

While female students who play sports are motivated more by the desire to overcome stress, men are motivated more by the spirit of competition (and thus the search for a source of stress?). The age breakdown reveals that older people are less concerned about the impact of sports on their health, fitness, and appearance and are less likely to participate in competitive sporting activities. The latter motivational factor becomes stronger the more urbanised the municipality in which the student is interviewed.

The differences in the student groups based on parents' education levels suggest that children of parents with a university degree value the health factor slightly less, and children of parents with no more than primary school education value the competition factor slightly more when playing sports. Among the wealth groups, they are distinguished based on both subjective and objective criteria. However, they exhibit significant differences in several aspects: the. The most apparent difference is in the search for a competitive factor: those in a better financial situation are more likely to seek this factor through regular physical activity. In contrast, those in a less favourable situation are less likely to do so (Table 44).

Background characteristics on training represent minor differences in the structure of responses. Among these differences, the opinions of students in sports-related courses are particularly noteworthy. These students, in addition to selecting all aspects in higher proportions than

students in non-sports-related courses, tend to seek a significantly higher proportion of social experiences and competition in sports. Essentially, the exact correlation emerges between hobbies and competitive sports (Table 45).

Table 44: Why do you think it is important to do sport - among those who do, by socio-demographic background characteristics (%)

	be fit and healthy	look good	be mentally refreshed	to combat stress	brings pleasure	for the community	racing	other
<b>GENDER</b>								
Men	*	*	*	<u>78%</u>	*	*	<u>29%</u>	*
Women	*	*	*	<u>85%</u>	*	*	<u>19%</u>	*
<b>AGE GROUP</b>								
18-23 years old	<u>90%</u>	<u>74%</u>	*	*	*	*	<u>28%</u>	*
24-29 years old	<u>95%</u>	<u>77%</u>	*	*	*	*	<u>18%</u>	*
30-39 years old	<u>97%</u>	<u>80%</u>	*	*	*	*	<u>14%</u>	*
at least 40 years old	<u>82%</u>	<u>62%</u>	*	*	*	*	<u>12%</u>	*
<b>TYPE OF SETTLEMENT</b>								
Capital	*	*	*	*	*	*	<u>37%</u>	<u>11%</u>
county seat	*	*	*	*	*	*	<u>24%</u>	<u>6%</u>
small town	*	*	*	*	*	*	<u>28%</u>	<u>3%</u>
municipality	*	*	*	*	*	*	<u>12%</u>	<u>1%</u>
<b>PARENTS' EDUCATION</b>								
up to primary	<u>98%</u>	<u>75%</u>	*	*	*	*	<u>41%</u>	*
skilled worker	<u>96%</u>	<u>76%</u>	*	*	*	*	<u>22%</u>	*
graduated from high school	<u>93%</u>	<u>68%</u>	*	*	*	*	<u>19%</u>	*
graduate	<u>88%</u>	<u>77%</u>	*	*	*	*	<u>26%</u>	*
<b>SUBJECTIVE WEALTH SITUATION</b>								
very good, I have no financial problems	<u>92%</u>	*	<u>85%</u>	<u>78%</u>	<u>90%</u>	<u>54%</u>	<u>28%</u>	*
good, I'll be on schedule by the end of the month	<u>91%</u>	*	<u>87%</u>	<u>82%</u>	<u>83%</u>	<u>42%</u>	<u>24%</u>	*
I'm just coming out at the end of the month	<u>94%</u>	*	<u>90%</u>	<u>91%</u>	<u>87%</u>	<u>43%</u>	<u>15%</u>	*
bad, I find it hard to get by in a month	<u>65%</u>	*	<u>63%</u>	<u>61%</u>	<u>64%</u>	<u>47%</u>	<u>22%</u>	*
<b>WEALTH QUARTILES</b>								
Q1	<u>86%</u>	<u>71%</u>	<u>83%</u>	*	*	<u>38%</u>	<u>16%</u>	*
Q2	<u>91%</u>	<u>76%</u>	<u>83%</u>	*	*	<u>50%</u>	<u>23%</u>	*

Q3	93%	<u>69%</u>	<u>91%</u>	*	*	48%	22%	*
Q4	<u>95%</u>	<u>80%</u>	88%	*	*	46%	<u>32%</u>	*
OVERALL	94%	76%	89%	85%	87%	47%	24%	4%

\*not significant ( $p>0.05$ )

Table 45: Why do you think it is important to do sport - among those who do sport, by training background characteristics and sport activity (%)

	be fit and healthy	look good	be mentally refreshed	to combat stress	brings pleasure	for the community	racing	other
LEVEL								
Bachelor level	92%	75%	<u>83%</u>	80%	<u>83%</u>	*	*	*
Master level	<u>82%</u>	<u>59%</u>	90%	81%	84%	*	*	*
undivided	<u>95%</u>	<u>79%</u>	<u>93%</u>	<u>88%</u>	<u>90%</u>	*	*	*
FIELD OF SCIENCE								
pedagogy, education	88%	71%	80%	80%	80%	<u>30%</u>	<u>12%</u>	1%
medicine and health sciences	<u>96%</u>	76%	<u>91%</u>	<u>86%</u>	<u>90%</u>	42%	<u>13%</u>	<u>1%</u>
economics	97%	83%	86%	78%	85%	49%	30%	3%
sports science	<u>97%</u>	79%	89%	88%	<u>94%</u>	<u>71%</u>	<u>52%</u>	7%
engineeringe	<u>86%</u>	<u>63%</u>	83%	<u>76%</u>	<u>78%</u>	45%	22%	<u>7%</u>
arts	97%	68%	86%	76%	84%	31%	12%	7%
social sciences	77%	23%	100%	100%	77%	77%	58%	0%
agricultural science	89%	68%	88%	82%	87%	53%	<u>13%</u>	5%
natural science	<u>87%</u>	<u>82%</u>	88%	81%	84%	44%	<u>34%</u>	2%
humanities	94%	78%	88%	89%	89%	41%	18%	7%
law and management	89%	80%	<u>72%</u>	81%	<u>72%</u>	<u>30%</u>	20%	3%
SPORTS STUDIES								
not typical	<u>90%</u>	<u>73%</u>	85%	81%	<u>83%</u>	<u>39%</u>	<u>17%</u>	*
typical	<u>99%</u>	<u>81%</u>	<u>92%</u>	<u>90%</u>	<u>97%</u>	<u>78%</u>	<u>57%</u>	*
TEACHING, TEACHING PROFESSION								
not typical	*	*	*	*	84%	<u>42%</u>	<u>21%</u>	*
typical	*	*	*	*	<u>93%</u>	<u>64%</u>	<u>35%</u>	*
SPORT ACTIVITY								
competitive	*	*	<u>93%</u>	<u>91%</u>	<u>98%</u>	<u>80%</u>	<u>67%</u>	*
recreational	*	*	<u>84%</u>	<u>80%</u>	<u>81%</u>	<u>35%</u>	<u>10%</u>	*
OVERALL	94%	76%	89%	85%	87%	47%	24%	4%

\*not significant ( $p>0.05$ )

### ***The relationship between sporting activity and the environment***

Above, I have shown the independent impact of daily physical education. However, school and school PE lessons are only one form of a model medium for physical activity. What I consider more important is the physical activity environment, whether sedentary or sedentary and the contemporary influences on physical activity.

The role of physical activity in maintaining health makes it important to ask why we exercise. Based on an analysis of the literature, it is not possible to provide a definitive answer, as several different goals contribute to the motivation to exercise (Berki, 2020). Research indicates that some individuals exercise for their health, while others exercise to improve their performance (Ádám et al., 2018). The different motivational factors also depend on age, social status and the role of the environment (Butt et al., 2011). In addition to these, friends and family are the most influential factors in developing an active and healthy attitude (Atkin et al., 2015).

**My hypothesis (H3)** is that the effect of sample tax agents on sports participation is more significant than whether a person participates in daily physical education. The latter aspect can only amplify the effect of socialisation agents.

It has been shown earlier that I measured the impact of a total of seven possible social influences in the questionnaire. On average, 3.0 “sports - influence” was felt by the students, and in most cases, it is more a peer influence than a family influence.

The relationship between the interviewee’s sporting activity characteristics and the influences of their social environment confirmed my suspicion. Those who play sports competitively reported a greater impact compared to those who play sports as a hobby, and the average impact of the latter was higher than that of those who do not play sports at all. The survey suggests that these differences are partly due to the prevalence of family influences and partly due to peer effects, as differences in both dimensions are apparent between the different groups of athletes.

*Table 46: Sport-related impact groups - by students’ sporting activity (averages on a 7-point scale and %)*

	<b>Impact (average)</b>	<b>family effect (%)</b>	<b>contemporary - effect (%)</b>
competitive sport	3,9	89%	99%
recreational sport	3,0	78%	93%
do not do sport	2,3	68%	84%
OVERALL	3,0	78%	92%
F/Chi <sup>2</sup>	117,709	36,796	43,385
Sig.	0,000	0,000	0,000

The physical activity scale indicates a similar relationship. The more sport-related peer influences a person has, the higher their activity level ( $r = 0.364$ ,  $p < 0.000$ ). In addition, both the family dimension (physical activity scale mean 4.3, where there is a family effect; 3.8, where there is not) and the peer dimension (physical activity scale mean 4.3, where there is a family effect; 3.2, where there is not) appear to be important. Among 18-21-year-olds (i.e. those who were compulsorily enrolled in a daily physical education programme), the family effect is significant: if there is a family pattern, they are more likely to participate in sports - competitively.

Among those aged 22 or over, the effect of this sampling agent is only apparent. Although the proportion of athletes (including competitive athletes) is higher among all 22-year-olds and older in the family sample, this relationship no longer holds when daily physical education is included in the model; the family effect persists only when there is no participation in daily physical education (Table 47). However, when examining the effect of peer group, we reach different conclusions: regardless of participation in daily physical education and age group, it is evident that if there is a peer effect, it is associated with a higher frequency of students participating in sports (Table 48).

Table 47: Sports activity by family effect, participation in daily physical education and age groups (%)

		18-21 years old			at least 22 years old		
in daily physical education	family effect	play sport competitively	play sport as a hobby	do not play sport	play sport competitively	play sport as a hobby	do not play sport
were involved in	is	28%	48%	23%	17%	66%	16%
	none	11%	59%	30%	14%	64%	21%
	total <sup>1 2</sup>	25%	50%	25%	17%	66%	18%
were not involved	is	-	-	-	15%	69%	17%
	none	-	-	-	6%	58%	37%
	total <sup>3</sup>	-	-	-	12%	66%	22%
total	is	28%	48%	23%	16%	68%	17%
	none	11%	59%	30%	8%	60%	32%
	total <sup>4 5</sup>	25%	50%	25%	17%	66%	18%

<sup>1</sup>Chi<sup>2</sup>=13.660 Sig=0.001 <sup>2</sup>Chi<sup>2</sup>=1.105 Sig=0.575 <sup>3</sup>Chi<sup>2</sup>=27.411 Sig=0.000 <sup>4</sup>Chi<sup>2</sup>=13.660 Sig=0.000 <sup>5</sup>Chi<sup>2</sup>=25.490 Sig=0.000

Table 48: Sport activity coefficient, participation in daily physical education and by age group (%)

		18-21 years old			at least 22 years old		
in daily physical education	contemporary effect	play sport competitively	play sport as a hobby	do not play sport	play sport competitively	play sport as a hobby	do not play sport
were involved in	is	26%	51%	23%	18%	66%	16%
	none	8%	44%	47%	3%	66%	31%
	total <sup>1 2</sup>	25%	50%	25%	17%	66%	18%
were not involved	is	-	-	-	13%	67%	20%
	none	-	-	-	0%	54%	46%
	total <sup>3</sup>	-	-	-	12%	66%	22%
total	is	26%	51%	23%	15%	67%	19%
	none	8%	44%	47%	1%	60%	39%
	total <sup>4 5</sup>	25%	50%	25%	17%	66%	18%

<sup>1</sup>Chi<sup>2</sup>=12.555 Sig=0.002 <sup>2</sup>Chi<sup>2</sup>=7.721 Sig=0.021 <sup>3</sup>Chi<sup>2</sup>=20.718 Sig=0.000 <sup>4</sup>Chi<sup>2</sup>=12.555 Sig=0.002 <sup>5</sup>Chi<sup>2</sup>=25.515 Sig=0.000

I used linear regression analysis to examine whether participation in daily physical education had a significant effect on the physical activity index, in addition to the effects of family and peers. I included the two effect variables in their original four-valued form (0 if there was no effect; 3 if the respondent reported three effects) and included age as an explanatory variable. Two models were constructed: the first (Table 46) for respondents aged 21 or younger (i.e., those for whom participation in daily physical education was compulsory), and the second (Table 49) for respondents aged 22 or older, examining the physical activity index.

Table 49: Factors influencing physical activity index - linear regression analysis parameters, 18-21 year-olds

	<b>R<sup>2</sup></b>	<b>Adj R<sup>2</sup></b>	<b>Std.Error</b>	<b>Durbin-Watson test</b>	
<b>Model</b>	,154	,151	1,525	1,752	
	<b>Sum of Squares</b>	<b>df</b>	<b>Mean square</b>	<b>F</b>	<b>Sig.</b>
Regression	244,383	2	122,191	52,531	0,000
Residual	1347,034	579	2,326		
Total	1591,417	581			
	<b>Unstandardised Coefficients</b>		<b>Standardised Coefficients</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
Constans	2,770	,160	-	17,316	0,000
Family Impact	0,194	0,066	,115	2,940	0,000
Contemporary effect	0,694	0,077	,354	9,013	0,000

Method: stepwise

Explained variable: physical activity index

Explanatory variables included family effect, peer effect, age

Table 50: Factors influencing physical activity index - parameters for linear regression analysis, aged 22 years and over

	<b>R<sup>2</sup></b>	<b>Adj R<sup>2</sup></b>	<b>Std.Error</b>	<b>Durbin-Watson test</b>	
<b>Model</b>	,180	,178	1,448	1,795	
	<b>Sum of Squares</b>	<b>df</b>	<b>Mean square</b>	<b>F</b>	<b>Sig.</b>
<b>Regression</b>	420,444	2	210,222	100,306	0,000
<b>Residual</b>	1912,393	912	2,096		
<b>Total</b>	2332,836	914			
	<b>Unstandardised Coefficients</b>		<b>Standardised Coefficients</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
<b>Constans</b>	2,823	,098	-	28,912	0,000
<b>Family Impact</b>	0,293	0,052	,177	5,652	0,000
<b>Contemporary effect</b>	0,568	0,052	,339	10,857	0,000

Method: stepwise. Explained variable: physical activity index

Explanatory variables included family effect, peer effect, whether or not they participated in daily physical education (dummy), age

Both models were significantly well-fitted, and the explained fraction was weak to moderate. The findings for both models are essentially the same: both the family effect and the peer effect have significant explanatory power, with the latter having roughly twice the explanatory power of the family effect. The cohort effect has a decisive impact on young people's relationships with their families, the development of alternative behaviours and gender relations (Rétsági, 2015b). The influence and role of peers and friends increase, and friendship becomes more important than anything else, and thus also an aspect that influences leisure time (Kövesdi, 2015). In the second model, participation in daily physical education did not prove to be significant (and age was not significant in either model).

Overall, **my hypothesis H3** is accepted. I examined the impact of daily physical education on activity in two ways. I have attempted to measure the influence of family and peer sport-related influences on both the frequency of sports activity and the level of physical activity, while controlling for age and participation in daily physical education. My results show that the likelihood of a (current) sedentary lifestyle is increased if this is a typical behaviour in one's family and peer group. However, this association is not, or only complementarily, influenced by participation in daily physical education. In the age group where participation in daily physical education was not compulsory, the role of family influence was confirmed by joining the programme (voluntary or institutional). Otherwise, there is no detectable role of daily physical education on the activity indicators.

## **The relationship between daily physical education and health behaviour factors**

### ***Risk factors for health behaviour (smoking, alcohol, drugs)***

Almost three-quarters (74%) of the students surveyed said they did not smoke at all. 16% were occasional smokers, and one in ten regular smokers (the latter group smokes at least one pack a week).

Higher proportions of smokers are found among men, younger age groups, children of more educated parents and those in the most advantaged financial situations. Typically, the proportion of smokers is lower among students studying teaching and teacher training, while the proportion of smokers among students studying sports-related subjects is the same as among other students (no significant difference between them).

18% of respondents do not drink alcohol at all, 76% drink occasionally and 6% drink regularly. Nearly two in three respondents (64%) think the amount they drink is relatively small, while nearly a fifth of the sample (19%) think they drink a lot (rarely or occasionally). The proportion of those who never drink alcohol is higher among those aged 30 or over, children of low-educated parents and those from more favourable financial backgrounds (*Table 51, Annex*). In this approach, there are also greater differences between students' educational backgrounds: at the University of Nyíregyháza, the proportion of abstinent students is higher among those with part-time studies, those with a background in education and pedagogy, social sciences and law. There is no difference between men and women in the sample in terms of how often they drink, but men tend to drink more by their admission. As mentioned above, members of the under-30s age group are more likely to drink than older people, but this is typically more occasional - although those who drink heavily on these occasions are over-represented in these cohorts. Not only are abstinence rates lower for children of more highly

educated parents, but they also tend to drink more regularly and more heavily. Consistent with stereotypical beliefs, higher proportions of regular drinkers are found among those studying arts and humanities and higher proportions of heavy drinkers among those studying engineering (Table 52, Annex).

13% of respondents admitted to having tried drugs before. Among men, not only smoking and alcohol consumption show worse data, but also drug use. At least among the male students surveyed, almost twice as many have tried drugs in the past. Among 24-29-year-olds, those with less favourable financial circumstances and full-time students have a higher proportion who have tried.

It is perhaps somewhat surprising that there is no significant difference between students who play sports competitively or as a hobby and those who do not play sports in terms of their smoking habits. However, the proportion of regular smokers among those who compete is low. However, this group of students has the lowest proportion of non-drinkers, and if they do drink (typically occasionally), they are over-represented among those who drink heavily. Attitudinal groups do not show a correlation with smoking, but alcohol consumption and drug experimentation do (Table 53, Annex). Typically, those with more materialistic values and those with more individual autonomy have a higher proportion of regular alcohol consumers, and in the former group, also of heavy drinkers. These two groups also have higher rates of having tried drugs.

After standardisation, the indicators describing the quantitative and frequency characteristics of smoking, alcohol consumption and drug testing were reduced to a single indicator.<sup>13</sup> This suggests that men, younger people and those with higher education levels are more likely to have risk factors (Table 54).

Among the educational characteristics, there is also a dimension that causes significant differences: students at the University of Debrecen, including full-time students, part-time students, and students in economics and arts, have a high risk of exposure to risk factors (Table 55).

Table 54: Risk index by socio-demographic background characteristics of students (averages)

	<b>risk index</b>	<b>F</b>	<b>sig</b>
GENDER		30.985	0.000
Men	0.12		
Women	-0.07		
AGE GROUP		22.454	0.000
18-23 years old	0.07		
24-29 years old	0.03		
30-39 years old	-0.30		
at least 40 years old	-0.36		
PARENTS' EDUCATION		10.897	0.000
up to primary	-0.40		
skilled worker	-0.16		
graduated from high school	0.00		
graduate	0.07		

<sup>13</sup> The data reduction is the same as the procedure described for constructing the wealth index. The average of the constructed index is zero, with high positive values indicating a high prevalence of health risk factors and low values indicating a low prevalence of risk factors.

Table 55: Risk index by educational background characteristics of students (averages)

	risk index	F	sig
INSTITUTE		4.882	0.027
University of Debrecen	0.01		
University of Nyíregyháza	-0.11		
TYPE		67.375	0.000
full-time	0.08		
part-time	-0.26		
LEVEL		6.102	0.000
Bachelor level	0.01		
Master's level	-0.15		
Undivided	0.05		
FIELD OF SCIENCE		4.105	0.000
pedagogy, education	-0.22		
medicine and health sciences	0.03		
economics	0.17		
sports science	0.00		
engineering	0.10		
arts	0.11		
social sciences	-0.49		
agricultural science	-0.08		
natural science	-0.09		
humanities	0.04		
law and management	-0.11		
TEACHING, TEACHING PROFESSION		20.867	0.000
not typical	0.03		
typical	-0.21		
OVERALL	0.00	-	-

### *Frequency of entertainment*

14% of the students surveyed go out at least once a week, and a quarter go out at least once a month. A further 31% go out less often, and 30% hardly ever (Figure 24). Unsurprisingly, the question is mainly related to the gender and age of the respondent: men and younger people go out more often. There is an interesting correlation between the respondents' field of study and their frequency of going out. Among students involved in sports and physical education, those who participate relatively frequently are overrepresented (Table 56).

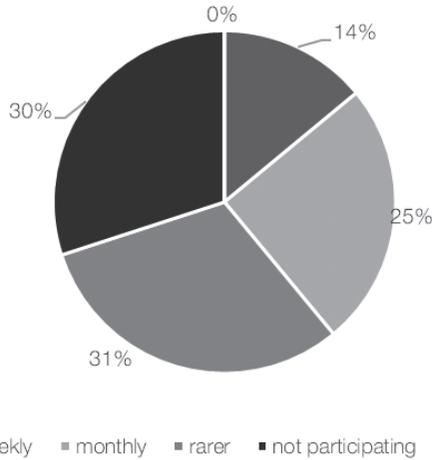


Figure 24: How often do you go out partying (nightclubs, alcohol included) (% , N=1521)

Table 56: How often do you go out partying - by gender, age and whether you study sport (%)

	at least weekly	monthly	less frequently	not involved	NV	Chi <sup>2</sup>	sig
<b>GENDER</b>						82.284	0,000
Men	21%	32%	23%	24%	<1%		
Women	10%	21%	36%	34%	<1%		
<b>AGE GROUP</b>						1.8793	0,000
18-23 years old	19%	30%	29%	23%	<1%		
24-29 years old	9%	26%	36%	30%	0%		
30-39 years old	4%	5%	35%	57%	0%		
at least 40 years old	0%	5%	29%	66%	0%		
<b>SPORTS STUDIES</b>						19.709	0,000
not typical	13%	24%	32%	31%	<1%		
typical	20%	33%	23%	24%	<1%		
<b>OVERALL</b>	14%	25%	31%	30%	<1%	-	-

### Stress factors

Stress is also a factor that can be detrimental to health. In my research, I also attempted to measure the prevalence of various stress-related causes. The results indicate that time management issues are the primary source of stress, with 71% of respondents reporting this problem. For nearly four-tenths of respondents, financial problems and learning difficulties were stressful, and for a third of respondents, being alone and lacking a partner were stressful. Adjusting to university life is a psychological challenge for an additional 17 per cent of respondents. Ten per cent reported other sources of stress. Significantly, 94% of respondents indicated that they experienced something, meaning that, in total, just over one in twenty students live a stress-free life.

The prevalence of stress factors primarily depends on the socio-demographic characteristics of students. Time management problems are disproportionately represented among women and students from matriculated parental homes. Financial problems are more prevalent among older people and those with low incomes. Learning difficulties are also more likely to affect women, those in a less favourable income situation and younger people. Being alone is most difficult for men and those under 30, and for the latter, adjusting to university life poses a bigger challenge. Overall, stress is more likely to affect children from lower socioeconomic status families, and in line with this, those in less favourable financial circumstances (Table 57).

Table 57: What are the biggest causes of stress for you - by socio-demographic background characteristics of students (%)

	time-man- agement problems	loneliness, lack of a partner	integ- ration into university life	learning difficulties	problems of a mate- rial nature	other	no stress factor
<b>GENDER</b>							
Men	62%	41%	*	33%	34%	*	8%
Women	77%	29%	*	40%	41%	*	5%
<b>AGE GROUP</b>							
18-23 years old		36%	21%	39%	34%	*	*
24-29 years old		38%	15%	43%	44%	*	*
30-39 years old		12%	5%	20%	44%	*	*
at least 40 years old		14%	0%	16%	48%	*	*
<b>PARENTS' EDUCATION</b>							
up to primary	48%	*	19%	50%	67%	*	2%
skilled worker	72%	*	7%	31%	45%	*	2%
graduated from high school	76%	*	16%	40%	42%	*	6%
graduate	68%	*	21%	37%	32%	*	8%
<b>SUBJECTIVE WEALTH SITUATION</b>							
very good, I have no financial problems	*	*	*	27%	7%	*	7%
good, I'll be on schedule by the end of the month	*	*	*	39%	38%	*	6%
I'm just coming out at the end of the month	*	*	*	39%	71%	*	3%
bad, I find it hard to get by in a month	*	*	*	64%	95%	*	0%
<b>WEALTH QUANTILES</b>							
Q1	*	*	*	40%	53%	*	*
Q2	*	*	*	45%	40%	*	*
Q3	*	*	*	35%	32%	*	*
Q4	*	*	*	29%	27%	*	*
OVERALL	71%	33%	17%	37%	38%	10%	6%

In the previous chapters, I have identified several factors related to health behaviour. Some of these factors relate to the physical and mental state of the student, including their perception of their health and mental well-being, their level of physical fitness, and their level of stress. The other part was about the student's lifestyle characteristics: how regularly they smoke or drink (alcohol), how much they drink (alcohol), whether they have tried any drugs, and whether they eat healthily or not.

**My fourth hypothesis (H4)** concerns the relationship between daily physical education and health behaviours. My hypothesis is, on the one hand, that participants in daily physical education will exhibit more favourable health behaviours (H4a) and, on the other hand, that these relationships will be observed primarily among students (H4b) who were generally satisfied with their daily physical education. When testing the hypothesis, we should also consider that for the youngest age group in the sample (under 21), participation in the programme was compulsory, and that a real comparison can only be made between the older age group. However, age has a strong influence on health behaviour factors.

My results show that daily physical education is not, or only marginally, associated with health behaviour. I expected that there would be significant differences between participation and between groups based on age and participation, but this did not materialise. The (mostly non-significant) associations are summarised in the table below. Essentially, only one dimension of the relationship is worth interpreting: the risk index (i.e. that related to smoking, alcohol consumption, and drug experimentation) is higher (i.e. higher risk, higher prevalence) in the group of students who participated in daily physical education. However, in my opinion, it is not that those who participated in daily physical education classes are more likely to engage in health risk behaviours, but that these activities are closely related to age (higher risk of younger age groups, more opportunities for older people to try drugs) and to (full-time) university lifestyle.

Table 58: Health behaviour factors by participation in daily physical education (means and %\*)

	health status	mental state	fitness status	stress work-load	risk index	proportion of people eating healthily**
	average	average	average	average	average	%
were involved in	3,94	3,57	3,37	2,10	<i>0,04</i>	57%
were not involved	3,96	3,59	3,28	1,99	<i>-0,07</i>	55%
up to 21 years old (participated)	3,96	3,62	3,38	2,08	<i>0,04</i>	55%
at least 22 years old (not participating)	3,94	3,57	3,28	1,98	<i>-0,06</i>	56%
at least 22 years old (participated)	3,92	3,48	3,37	2,12	<i>0,06</i>	53%
OVERALL	3,94	3,57	3,34	2,05	0,00	55%

\*significant relationships are indicated by italics ( $p < 0.05$ )

\*\*according to the respondent's self-declaration

Among those aged 21 years and under, opinions about daily physical activity show a significant relationship with health status, fitness status and the proportion of people who eat healthily (Table 59). More favourable health status and higher proportions of healthy eaters are more prevalent where there is a stronger opinion about the programme, regardless of whether this opinion is favourable or unfavourable. Sport, health, and health consciousness are linked: those who prioritise the latter two are more responsive to their sport-related life events and, thus, more critical and opinionated. In this case, it is also worth noting the background of students who hold strong opinions about health. Those who commit themselves to healthy behaviour, based on concrete, conscious arguments, have more information about health and health awareness. This information is based on both information gathering and personal experience. This experience also contributes to optimising dietary habits and to developing and maintaining better health. However, this can contribute to a positive change in attitudes towards sport and sport-related activities rather than a positive shift in attitudes towards everyday physical activity. For fitness status, as with my hypothesis, the more positive the response to the programme, the better the fitness status. For those aged 22 and over who participated in the programme, most aspects show a significant correlation, but no meaningful trend beyond statistical differences emerges in any of the cases.

Table 59: Health behavioural factors by age group and perception of daily physical education among those who participated in the programme (means and %\*)

		average	health status	mental state	fitness status	stress workload	risk index	proportion of people eating healthily**
			average	average	average	average	%	
up to 21 years old (participated)	very bad		<i>3.91</i>	3.65	<i>3.04</i>	2.06	-0.03	63%
	rather bad		3.77	3.78	<i>3.21</i>	2.00	0.18	59%
	so-so		3.80	3.57	<i>3.18</i>	2.26	0.04	43%
	rather good		<i>3.94</i>	3.57	<i>3.46</i>	2.10	0.07	54%
	very good		4.25	3.63	<i>3.80</i>	1.94	0.00	61%
	OVERALL		3.95	3.63	3.37	2.07	0.05	55%
at least 22 years old (participated)	very bad		3.91	3.16	<i>3.03</i>	<i>1.52</i>	0.23	43%
	rather bad		<i>3.84</i>	<i>3.48</i>	<i>3.58</i>	<i>1.99</i>	0.04	54%
	so-so		3.84	3.67	<i>3.25</i>	2.02	-0.05	45%
	rather good		<i>3.84</i>	<i>3.54</i>	<i>3.05</i>	2.29	-0.03	63%
	very good		4.16	3.53	<i>3.72</i>	<i>2.19</i>	-0.02	49%
	OVERALL		3.95	3.51	3.38	2.05	0.01	50%

\*significant relationships are indicated by italics ( $p < 0.05$ )

\*\*according to the respondent

However, before I finally reject my hypothesis, it is worth one more try. The individual health behavioural characteristics or risk factors are not independent of each other; therefore, the differen-

ces between groups shown in the tables above do not accurately reflect the actual impact of each dimension. However, let us build a model that reveals a relationship between these characteristics, risk factors, and specific socio-demographic parameters. The structure of this relationship (i.e., which factors have a real effect and which differences between the effects of the substantive factors are fundamental) may vary depending on whether the person participated in daily physical education. In my general model, I, therefore, assume that the respondent's health behaviour determines physical-mental well-being, the risk factors associated with his/her health behaviour, his/her level of physical activity, whether he/she participates in competitive sports, whether he/she has a family or peer role model for physical activity, whether he/she is interested in sports, whether he/she eats a healthy diet, and the main socio-demographic parameters (gender, age, status).

To test the general model, we need to create an indicator that reflects the respondent's physical and mental well-being. This composite indicator was created by "aggregating" the indicators of health, mental state, fitness and stress load using principal component analysis. The constructed principal component retains 51% of the information content of the four variables incorporated.

Table 60: Physical well-being - parameters of the principal component analysis

Values	Municipalities	Amount of information retained
Health condition	,588	51%
Mental state	,622	
Fitness status	,493	
Stress workload	,339	

The general model is analysed using linear regression analysis, where the dependent variable is physical-mental well-being, and the explanatory variables are as mentioned above. In total, five variables show significant effects: physical activity index, social status, healthy diet, age effect and age. According to the model, physical activity has the most decisive influence: the more physically active a person is, the better their physical and mental well-being. Social status and a healthy diet have almost the same influence: the higher one's status and the healthier one's diet (according to oneself), the more positive one's mental and physical well-being. Whether the respondent has been influenced by peers about sport (if so, this has a positive effect on physical and mental well-being) and their age (age is also positively correlated with the index) have a more minor but significant effect, by an "order of magnitude". The most surprising of the non-significant omitted variables is the case of the risk index - this may be explained by the fact that this dimension does not yet have a negative impact at this age and therefore does not affect our well-being (indeed, its "beneficial" effects [e.g. stress relief] are not visible). The model explains about 30% of the variance of the dependent variable.

Table 61: Factors influencing physical well-being - parameters for linear regression analysis, general model

	R	Adj R <sup>2</sup>	Std.Error	Durbin-Watson test	
Model	,553	,302	0,841	1,972	
	Sum of Squares	df	Mean square	F	Sig.
Regression	311,087	5	62,217	87,984	0,000
Residual	705,784	998	,707		
Total	1016,871	1003			

	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
Constans	-1,104	,168	-	-6,194	0,000
physical activity index	,209	,018	,336	11,410	0,000
social status	-,176	,021	-,223	-8,268	0,000
healthy eating	,416	,055	,205	7,521	0,000
peer effect	,111	,032	,101	3,503	0,000
age	,013	,005	,074	2,734	0,006

Method: stepwise

Explained variable: physical and mental well-being (principal component)

Explanatory variables included risk index, physical activity index, family effect, peer effect, healthy diet (dummy), competitive sport (dummy), sport science studies (dummy), gender (dummy), age, social status<sup>14</sup>

I also tested this general model in three subgroups of the sample. The first group consists of people aged 21 years or less (who participated in compulsory daily physical education), the second of people aged 22 years or more who did not participate in the programme, and the third of people aged 22 years or more who reported having participated in daily physical education. The difference with the general model is that in the first and third groups, I have included the evaluations of the programme as explanatory variables (in the general model and the second group, this would not have made sense due to the lack of responses). All three linear regression models were statistically significant, and the explained variance was at least as high as that of the general model. Table 61 presents the key parameters of the three models.

There are both similarities and differences between the three subgroups. Physical activity, social status, and healthy eating are important explanatory variables in all three subgroups. Additionally, while healthy eating is more pronounced among non-programme participants aged 22 or over, social status is more pronounced among programme participants aged 22 or over. Among those aged 22 years or less, the peer effect has no significant influence, but (instead) the family socialisation environment is detectable. Another important factor is whether or not the person is engaged in studies related to sport and physical education (if so, this contributes positively to physical and mental well-being). In the 22-year-old age group and older, four variables differ according to whether the person has participated in daily physical education. If not, the role of age and competitive sport becomes more important; if yes, these variables have no influence, but the age effect becomes a more important factor, and the sex of the respondent is a significant factor (women have a less positive effect on physical and mental well-being). The differences in the older age group suggest that if one has not participated in the programme, a sedentary lifestyle tends to contribute to physical and mental health at a level comparable to that of competitive athletes. Instead, lifestyle characteristics seem to be more valued. For those who have participated, there is a greater emphasis on a sedentary lifestyle, especially when it takes the form of a community. The community effect is of particular interest for women: only in this subgroup is it true that women who report a contemporary effect have better physical

<sup>14</sup> The negative sign in the model is due to the inverse categorisation of the background variable describing social status (low values indicate more favourable status).

and mental well-being than those who do not. In other words, participation in daily physical education - if sport remains a community experience for them - is a more important model for women in terms of their later life choices.

Table 62: Factors influencing physical and mental well-being - parameters of linear regression analysis in three subgroups, key parameters of the models

	18-21 years old	at least 22 years old, not having participated in the programme	at least 22 years old, have participated in the programme
Adj R <sup>2</sup>	,302	,351	,346
Sig.	0,000	,000	,000
	<b>Beta</b>		
physical activity index	,296	,300	,360
social status	-,207	-,140	-,264
healthy eating	,182	,338	,166
family effect	,149	*	*
sports studies	,097	*	*
age	*	,163	*
peer effect	*	*	,183
not	*	*	-,152
competitive sports	*	,125	*

\*not significant ( $p > 0.05$ )

Method: stepwise

Explained variable: physical and mental well-being (principal component)

Explanatory variables included risk index, physical activity index, family effect, peer effect, healthy diet (dummy), competitive sport (dummy), sport science studies (dummy), gender (dummy), age, social status, perception of daily physical education (for subgroups 1 and 3)

Summarising the above, I reject **my initial hypotheses (H4)**. I was unable to support Grossman's (1972, 1999, 2004) hypothesis, which posits that formal schooling, as an investment in knowledge capital, has a positive effect on health capital. Participation in daily physical education (as an investment in knowledge capital) does not in itself lead to more favourable health behaviours, even if participants have a fundamentally positive perception of the programme. This does not mean, however, that daily physical education plays no influential role. The analysis showed that while for non-participants, a sedentary lifestyle contributes less to their physical-mental balance, complementary lifestyle features contribute more; for programme participants, the physical activity 'element' remains an important influencing factor in this respect. This influence, especially when combined with the social experience of sport, is more important for women.



# Summary

According to the WHO, a healthier world requires more physically active people (WHO, 2018). The crisis of sport and health as a value category is an intergenerational problem. This may indirectly affect the value preferences of the younger generation, which is important for the future of society. Perényi's (2010) research shows that sporting activities are associated with a specific set of values that play a decisive role in the 'value socialisation' of young university students.

The question arises whether a healthy lifestyle, physical activity as a lifestyle, and health capital investment can be profitable among the value preferences of the new intellectuals growing up. In the future, promoting an active lifestyle will play a crucial role in shaping the physical and mental well-being of future societies, as well as in the interests of national economic savings. This will be achieved by addressing illnesses resulting from physical inactivity and preventing them in all age groups. The first step in this process is the implementation of physical education in public education. Daily physical education can lay the foundations for a lifelong, activity-rich lifestyle. The values of this programme can only be realised in the long term if, at certain stages of life (e.g. after graduation), when a lifestyle that marginalises sporting activities is at a particular stage, there is a supply base to continue to maintain an activity-rich lifestyle that meets different needs (Bodnár & Perényi, 2015). It is essential to understand the values of stakeholders and students, as well as the factors that play the most significant role in guiding their decisions and actions (Moravec, 2018, 2019).

The research problem was to investigate the role of daily physical education, particularly concerning students' health awareness and health behaviour, which was examined as a non-study outcome factor (Kovács, 2015; Kovács et al., 2016). The novelty of this research lies in its examination of the impact of value transfer beyond the precise boundaries of sport on the lifestyle of students who regularly participate in sporting activities and those who are physically inactive, in light of the role of daily physical education. It does not focus on the specific site of delivery, public education, but on the life space of young people moving on from it, higher education. The area I am studying has not yet been studied from this perspective in this age group, so perhaps a 'first-hand' insight can be given into whether the role of the new implementation process in the lives of students from disadvantaged regions can be demonstrated in terms of health awareness.

The theoretical background of the study is multifaceted, but taking into account the given geographical and socio-economic context and the lagging nature of the region, it was inevitable to rethink the so-called "iceberg concept" (OECD, 2012) of dropout, school failure and health-related outcomes, in which I sought to answer the question: is there a demonstrable role of daily physical education in the development of this outcome indicator?

The Alfréd Hajós Plan (2012) of the Hungarian university and college system has set a priority goal to encourage currently inactive students to engage in lifelong voluntary sport. The National Higher Education Act (2011) also calls for the creation of opportunities for regular

physical activity and sport in higher education institutions to improve healthy lifestyles and quality of life (National Sports Strategy, 2007). The responsibility of higher education in shaping health and quality of life is also significant because it is the last pedagogical arena where young people have the opportunity to engage in organised, weekly physical activity (Kovács et al., 2018). These research directions and findings effectively highlight the role of daily physical education, a relevant research area that extends beyond primary and secondary education to higher education. This has not been explored to date, and the research, therefore, has a niche role to play. The study raises a new question: Can the implementation process within the educational system, specifically daily physical education, be a significant influencing factor in health promotion? The novelty of my research lies in the fact that the study of the implementation of the educational policy intervention in our country (as the only one in Europe), the implementation of daily physical education, does not focus on the specific implementation site, public education, but on the life-space of the young people who go on from there, higher education. It examines the impact of this program in students' health awareness. The study aims to present a comprehensive picture that goes beyond the combined presentation of micro, meso, and macro factors, due to the interdisciplinary (sociological, psychological, pedagogical) perspective employed in examining these factors.

In my thesis, I set out to study a region of our country with the highest proportion of disadvantaged students. The universities in this region, which I have studied, must also play a role in helping the lagging regions to catch up. The target group of the study was the students of the two major higher education centres of the Northern Great Plain region, the University of Debrecen and the University of Nyíregyháza, which is one of the most vulnerable groups of students in Hungary in terms of dropout rates (academic and non-academic performance). I conducted a representative survey involving these two institutions, with 1521 participants, primarily to investigate the extent to which the introduction of daily physical education has changed the health behaviour and attitudes towards physical activity of students entering higher education.

The questionnaire consisted of five major blocks. In the first block, the socio-demographic data of the respondent were queried. The second block of questions focuses on general health-related attitudes (self-assessed health and fitness, well-being, health-related values, family sports history, sports event attendance). The third block of questions focuses on health behaviour, including the type and level of sports participation, lack of sports participation, and possible reasons for not participating, factors behind sports participation, leisure habits, sleep patterns, and dietary habits. The fourth block of questions focuses on health awareness (self-rated health awareness, self-monitoring, experiences of change). The fifth block of questions aims to examine health promotion (the presence of daily physical education in the respondent's life and attitudes towards it, and health promotion opportunities provided by the university).

**In my first hypothesis (H1)**, I hypothesised that gender and social background would have a significant influence on the perception of daily physical education, with men and groups of students with higher social status (better cultural and economic capital) having more favourable attitudes towards daily physical education. Previous research findings (Fintor, 2019; Hamar & Karsai, 2008; Keresztes, 2015; Szemes et al., 2016) indicate that gender and social background have a significant impact on perceptions of physical education. I can only partially accept the hypothesis (**H1**) based on these findings. Indeed, the gender of the respondent influences the evaluation of daily physical education, and the correlation reported in the literature is evident:

men express more favourable opinions. However, the second element of the hypothesis has not been proven. Bourdieu's theory of capital does not hold for our sample. Our results for the student population we studied show that parental education (the respondent's cultural capital), wealth, and perceptions of wealth have no significant influence on the perception of daily physical education. The latter point is not confirmed even when these dimensions are considered together as the effect of a single variable that approximates social status. The gender of the respondent does not, however, cause differences in the perception of the programme across all social strata: it is mainly in the less favourable strata that men tend to be more favourable than women. Gender differentiation is more pronounced in lower socio-economic groups, and this is also likely to be the case in sports. It is important to stress. However, gender also plays a significant role in shaping attitudes towards sports: boys tend to have more positive attitudes towards sports (often due to the competitive nature of the sport being a fundamental characteristic), and these differences in attitudes are more pronounced in lower socioeconomic groups. The role of economic and cultural capital does not emerge even if we restrict our analysis to university students, because, contrary to my expectation, secondary school students with otherwise lower cultural capital have more favourable attitudes towards daily physical education, and this is independent of parental education.

**In my second hypothesis (H2)**, I hypothesised that (in addition to the above factors) opinions about daily physical education are determined by attitudes towards the attitude of the secondary school physical education teacher, the positive impact (usefulness) of the programme on health, and the practical experience (content) of physical education lessons. The results show that my hypothesis was partially confirmed in this case. It has been confirmed that there are different rationales behind the perception of daily physical education, which vary among opinion groups. I hypothesised that the teacher's personality and the impact of the teacher's attitude would be an important explanatory factor for both the satisfied and the dissatisfied: those dissatisfied with the programme would be dissatisfied with the teacher, and those satisfied with the programme would be satisfied with the teacher. Among the satisfied, there is indeed a perceived correlation, but for the dissatisfied, those who express strong, judgmental opinions, this is not a relevant consideration. This fact is only partially consistent with an earlier study. In this study, we gained insight into the sporting life of Hungarian minority institutions in Hungary and beyond its borders (Kovács & Moravec, 2019), demonstrating that, as in public education, physical education teachers also play a significant role in higher education. Although the personal relationship between students and teachers is increasingly disappearing as higher education becomes more and more mass, we can see that an exemplary, empathetic PE teacher who respects and helps his or her students can have a significant impact on students in terms of teaching them to play sports regularly. In another study (Moravec et al., 2020), we investigated the institutional resources that can influence students' sporting habits. Our results on recreational sports show that personal factors play a significant role in shaping students' sports socialisation. The personal example of the instructor is necessary even under the best infrastructural conditions (Kovács & Moravec, 2019).

In some cases, this commitment may compensate for the lack of infrastructure. This aligns with Hamar and Karsai's (2008) studies, which demonstrate that *the teacher also plays a significant role in shaping attitudes within the school*. In our second hypothesis, we also hypothesised that the usefulness of PE lessons would be a more pronounced explanatory factor among those satisfied with the programme and criticisms of the content among those dissatisfied with the prog-

ramme: in the former group, our hypothesis was fulfilled, while in the latter group, this reasoning is only prevalent among those who are strongly critical. At the same time, there is one other aspect that can significantly influence the opinion of those dissatisfied with daily physical education: the perception of the conditions of the physical education lessons. Typical criticisms related to infrastructural deficiencies include the practice of several classes playing sports together in one gym, as well as a lack of space and time for showering and cleaning up after PE lessons. On the other side (those who were satisfied with the programme), the PE classes were seen as an excellent community-building activity: everyone had fun and the community came together. This finding aligns with my previous focus group studies, in which students highlighted the sports infrastructure of the educational institution, the attitude of teachers, and the community-building power of daily physical education classes in secondary schools as the most important values (Moravec, 2019). Overall, we can refer to one of the most important findings of the research on subject popularity, which highlights the decisive role of the teacher's personality. This can be measured and demonstrated separately for each subject (e.g., Csapó, 2000; Svraha & Ádám, 2018; Fintor, 2019), and is also true for the subject of physical education, where the implementation of daily physical education has been implemented. However, in terms of liking and satisfaction, the issues of infrastructure deficiencies and academic overload should be highlighted, which push the evaluation in a negative direction. However, the teacher's personality is a cornerstone that can compensate for these difficulties. On this basis, students who are more closely associated with their PE teacher, who have a more positive perception of them and their personality, i.e. who "like" them, may also express greater satisfaction with the daily PE lessons themselves, even involuntarily associating PE with the PE teacher.

**In my third hypothesis (H3)**, I hypothesised that the effect of daily physical education on students' sporting activity would be negligible or not noticeable at all when the effects of other sample agents (such as family and peers) are considered. The present hypothesis is accepted. I hypothesised that sports activity rates would be higher when coming from a 'sporting' environment and that daily physical education (as a school socialisation, modelling environment) would only have a contributing effect on this effect (Ács et al., 2011; Kósa, 2006). My results show that although the likelihood of a physically active lifestyle is increased if this is typical behaviour in one's family or peer group, this association is not or only complementarily influenced by participation in daily physical education. In the age group where participation in daily physical education was not compulsory, participation in the programme (voluntary or institutional) confirmed the role of family influence. In the socialisation of young people, self-education and education play an equally valuable role by incorporating experiences and knowledge gained in timely socialisation venues (Rétsági, 2015b). The role of peer groups, alongside family members, in socialisation has also been valorised (Somlai, 1997). Friends are becoming model donors, and it is therefore important to determine whether sport, as a leisure activity of value, appears in these cohort groups (Földesiné et al., 2010). This is a recurrent, detectable, developmental psychological feature of the study group's age, as at this age, the value system and behaviour of young people (in both academic and non-academic contexts) are already predominantly influenced by their peers. Of course, the role of the family as the primary socialisation arena remains dominant, with the value system experienced in early childhood and specific to the family serving as a model for the young person's value system. However, the opening up to peers in prepuberty is completed mainly by adolescence and young adulthood. It is primarily this focus that places the student-scholar.

**In my fourth hypothesis (H4)**, I hypothesised that students who participated in daily physical education would have more favourable health behaviours (H4a) and that these associations would be observed primarily among students who were satisfied with their daily physical education (H4b). The risk index (i.e., related to smoking, alcohol consumption, and drug experimentation) is higher (i.e., higher risk, higher prevalence) in the group of students who participated in daily physical education. However, in my opinion, it is not that those who participated in daily physical education classes are more likely to engage in health risk behaviours, but that these activities are closely related to age (higher risk of younger age groups, more opportunities for older people to try drugs) and to the (full-time) university lifestyle. The cohort effect is a determinant of young people's relationships with their families, as well as the development of alternative behaviours and gender relations (Rétsági, 2015b).

I reject the hypothesis that participation in daily physical education does not in itself lead to more favourable health behaviours, even if the participants have a fundamentally positive opinion of the programme. This does not mean, however, that daily physical education plays no influential role. Physical activity has the most decisive influence: the more physically active a person is, the better their physical and mental well-being. Social status and a healthy diet have almost the same influence: the higher one's status and the healthier one's diet (according to oneself), the more positive one's mental and physical well-being. Whether the respondent is influenced by peers about sports (if so, this has a positive effect on physical and mental well-being) and how old they are has a more minor but significant effect. The analysis showed that, while for non-participants in the programme, a sedentary lifestyle contributes less to their physical and mental balance, and complementary lifestyle characteristics contribute more, for programme participants, the 'element' of physical activity remains an important influencing factor in this respect. This influence, especially when combined with the social experience of sport, is more important for women. Participating in sports as a member of a community offers numerous benefits for the individual, contributing to enhanced psychological well-being, social and emotional development, and overall student well-being. It can positively shape social skills, appearance, and academic performance, and help individuals secure positions in a team (Taliaferro et al., 2010; Kovács, 2014). Overall, for those not participating in the programme, a sedentary lifestyle contributes less, and additional lifestyle features more, to their physical-mental balance, while for those participating in the programme, the 'element' of physical activity remains an important influencing factor in this respect. We cannot overlook the fact that sustained physical activity, even if not consciously, becomes part of everyday life and personality. Thus, despite attitudes towards the programme often remaining negative, positive experiences and values associated with sport itself can be maintained in the long term. However, without experience in sports, the ability to enjoy and love sports cannot be developed, so in this case, a commitment to a sedentary lifestyle may be the preferred path. Awareness of the positive experiences gained through the programme, combined with its development, can help turn the values acquired into intrinsic motivation.

To summarise our results, despite the positive trend, the physical activity levels of young people are still low on average. In the case of our qualitative pre-study sample, the increasing school workload, additional commitments related to further studies, and the lack of financial resources have also compelled some students to take on student work in addition to their studies, which reduces the time available for both sports and academic pursuits. Nowadays, opportunities to participate in sports are also influenced by financial and social circumstances

(Borraccino et al., 2009). For example, people from socially disadvantaged backgrounds often lack the financial means to participate in sports through clubs. Free school sports clubs could alleviate this problem.

On the other hand, it is clear that the primary motivation for activity in young people's lives is mainly fun and social interaction rather than achievement (Perényi, 2014); therefore, in addition to competitive sports, opportunities for mass sports should be increased. Support for peer physical activity can be crucial, as the example of peers, parents, and teachers can have a positive impact on young people's attitudes towards physical activity (Bauman et al., 2012). Berki (2020), examining both team and individual athletes, finds that belonging can be a key factor in engagement in sports, as individual athletes tend to seek alternative activities earlier due to a lack of a sense of belonging, which can lead to dropout from sports.

The results of the research can be interpreted within the framework of the **OECD (2012) (Figure 3), which** was presented earlier as the theoretical background of the study, and my **Iceberg model (Figure 4), which** was developed based on the **experience of daily physical education**. In the case of educational institutions, providing students with an environment that supports physical activity can reduce the dropout rate associated with age. The students I study represent two higher education institutions in the disadvantaged region of the Northern Lowland, which is prone to dropout (Polónyi, 2018). In interpreting my research findings, I would like to offer suggestions for avoiding dropout based on the so-called Iceberg concept of recovery levels for low achievement and school failure (OECD, 2012), which involves interpreting achievement in a non-academic (health) domain. (I have already illustrated the concepts with a diagram in the theoretical background). The structure of the models and the way they are built on each other could help professionals involved in education and sports policy management refine the implementation process and eliminate the problems identified by taking into account the root causes of attitudes towards physical education.

Based on the **two Iceberg model** representations, at **Level 1, education and sports policies** can have both positive and negative effects on performance through education-related policies and laws. Education policies fundamentally determine the way institutions, including higher education institutions, operate and function. Sport policies and measures also have an impact on the world of education. In the present case, **the introduction of compulsory physical education** primarily applies to primary and secondary education, as it is at these levels that the regulation is binding. However, the experience gained during this period is still present at the individual level. The impact of a higher proportion of sporting activity at the primary and secondary level can be felt during the years of higher education, both positively and negatively (either through the continuation of sporting activity and a healthier lifestyle or through the absence of sporting activity and a healthier lifestyle, which is reflected at the individual level). Although the aim of the dissertation was not to specifically investigate this level, it is clear that the education and sports policy level provided a strong basis for the dissertation's hypotheses, as it allowed the research questions to be formulated and the hypotheses to be developed. Some researchers (Edvy, 2021) also consider the uniform legal introduction of compulsory physical education in higher education to be essential, adapting to the specific possibilities of each institution.

Moving on from this level to **the level of 2. School factors / Contextual institutional factors** can shape the picture in terms of institutional profile (structure and resources - e.g. sports infrastructure development in both public and higher education, building relationships

with local sports organisations, sports facilities, and also in terms of pedagogical profile, habits and practices, e.g. relaxing overcrowded timetables, increasing the prestige of teaching. Recent findings suggest that the minimum activity level recommended by international guidelines is not sufficient to reduce inactivity (Trájer et al., 2021). It would therefore be important to run recreational sports circles organised in school settings, whose main aim is not to compete but to promote health and to satisfy the need for recreational, experience-oriented physical activity that encourages active leisure. Such programmes can help to promote an experiential approach to sport (Szabó & Brokovits, 2014). In our country, the proportion of regular sportsmen and women entering higher education is drastically decreasing (Perényi, 2011; 2013; Pfau, 2017), and this can be traced to the change in leisure time sporting habits and the increase in health risk factors, which is why institutional programmes that help students to coordinate their study and sports activities are important (Müller et al., 2018). Although daily physical education (at the theoretical level) provides an opportunity to increase the frequency and intensity of physical activity and thus to develop and deepen a health-conscious lifestyle, the results suggest that the introduction of daily physical education alone is not sufficient to increase young people's health awareness and sufficiently reduce the prevalence of health risk behaviours among them, while maintaining a higher level of physical activity. This is because individual behaviour is not shaped by institutional factors alone but by a combination of other individual and environmental factors, which are at higher levels of the Iceberg model. In the present research, I have not focused on the specific sport and health promotion policies and guidelines of the HEI. However, the role of sport infrastructure as an institutional-level variable has been examined. It is a fundamental fact that the institutional context is essential for the implementation of physical education and that it provides an opportunity to increase the level of sport embeddedness in higher education settings (in the absence of the introduction of physical education). In combination with other factors at higher levels of the model (such as friends, peers, and institutional environment), this value system can be exploited to the full, as the community-building role of PE can be demonstrated, given that it is often not practised within the walls of institutions but in the form of leisure-time physical activity among friends.

**The level of Background/ Individual Factors 3** (difficult to observe as individual social factors) requires a complex approach in terms of the experience of daily physical education. Although Fintor's (2016) research in primary schools in the North Great Plain region showed that the vast majority of students welcomed its introduction and that parents, teachers and heads of institutions saw the need for its introduction (Urbinné, 2018), the enthusiasm of students decreased with age and the activity of parents and heads of institutions decreased due to the problems encountered (lack of space, overcrowding, increase in the number of hours of PE teachers). To strengthen families, promote health, and provide positive experiences and opportunities, leisure sports could be offered outside of school, primarily in natural settings (such as parks and forests) and in sports, community, and recreational facilities. There is evidence from the literature that a new theory of the relationship between higher education and parents is emerging (Wartman & Savage, 2008). Family social capital in parental care is also a determinant in the higher education years (Pusztai, 2016). International literature advocates for the organisation of multi-generational higher education institutional programmes to prevent student dropout (Wartman & Savage, 2015; Pusztai, 2018). This would allow young people to have informal, active social experiences with family and peers in informal spaces, which could later counterbalance the compulsory nature of the programme within the school walls. It is

important to note that elements of this level are evident in the issues examined in the research. The role of the family as a micro-level factor, as well as the role of past experiences, is also evident in the results. The research has addressed the hypothesis that daily physical education, as an experience of sport (personal experience), can serve as a strong background factor for current health behaviours. However, it can be seen that the experience of daily physical education alone is not sufficient to maintain a long-term health-conscious lifestyle, as other factors may override these experiences, and their role is not or hardly noticeable when the influence of other modelling agents (such as family and peers) is considered. In addition, experiences that tend in a negative direction (e.g. the persona of the PE teacher, behaviour, evaluation philosophies, etc.) may further inhibit the active pursuit of health consciousness. Therefore, implementation should also take into account the fact that the actors at the aforementioned institutional level can have a significant impact on the individual, both at this level and at higher levels.

Suppose positive experiences, patterns and attitudes are developed at the previous stages. In that case, there is a chance that at the **Behaviour 4 / Health Consciousness level**, the student will commit to health consciousness (accumulating health capital) and not deviate (wasting health capital). This level covers visible and measurable areas (and current specificities), so the hypotheses and results of my research fit well with this level. While the previous background level provided a reasonable basis for exploring the past roots of basic attitudes towards PE, the present level focused on current attitudes towards physical activity in higher education (when PE can be registered as a past event), allowing the exploration of current health behaviours, the characteristics of which point to similar trends to the research findings of the previous period before the introduction of PE. It can be seen that although the background level is below the surface and integrates areas that are more difficult to grasp, its impact is difficult to override.

In summary, we can say that the interdependent, combined effect of systemic levels from the bottom up is also valid for health-related achievements (Kovács, 2015), as well as for potential school failure and, ultimately, dropout (OECD, 2012). This final achievement then has an impact on the individual and their personality at the micro level, and affects lower levels (family, school) at the meso level, and ultimately impacts society at the macro level.

The ongoing restructuring of the structural system of sports and the impact of the series of measures taken at the government level to increase the funding of sports on the physical activity of young people is not (yet) evident from the research samples. The role of the 21st National Sports Strategy, the 2004 Sports Act and its amendment in 2011, the 2012 Sports Development Guidelines of the MOB and the daily physical education introduced in 2012 under the 2011 Act CXC on Public Education in Hungary, which is relevant for our main topic, cannot yet be detected in the health behaviour of young people. This fact and the emerging problem were illustrated in the context of other theories, beyond the OECD Iceberg model. According to the Getzels-Thelen social model, the youth socialisation (individual dimension, values) of today's parents is not in parallel with the formal goals (institutional dimensions, values) prescribed by today's society. Thus, almost unconsciously ('underwater part of the iceberg'), they pass on to their children a health culture and 'health value' that was previously anchored in their society. Education policy may be expected to improve physical activity and, hence, the health of the population; however, in our study sample, it can be said that daily physical education can only bring about a change in attitude among young people just growing up. The primary question addressed in this research is whether daily physical education can be considered an

‘added value’ in students’ lifestyles. It can be concluded that this role only appears if the core values brought from the family as the primary socialisation arena are geared towards a healthy lifestyle. Daily physical education can only represent a change of attitude for young people just growing up. Changing attitudes and value preferences has a profound social and cultural history and needs to take place over several generations to have an impact.

Based on the iceberg model presented and the research results, and considering the role of the spillover effect of capital, we can formulate the following social goals to be achieved. The health-conscious behaviour of students living in disadvantaged spatial contexts can lead to health capital accumulation (Ács et al., 2016; Gabnai et al., 2019), physical culture literacy can represent cultural capital (Bourdieu, 1991), and unemployment can be reduced by increasing schooling and knowledge capital (Pusztai, 2015a; Róbert, 2018). In addition, investing in health and cultural capital can even reduce the determinants of poverty (OECD-WHO, 2003; Szerdahelyi, 2020). Sport cannot be independent of the global societal situation and its health, as the health of society can be measured by the cultural processes that permeate its structure (Fromm, 2010).

Young people need to manage the health capital they were born with. It is up to the individual’s health consciousness to decide whether they prefer “investment” (e.g., increasing education) or “waste” (e.g., risk-taking behaviours). Investments pay off not only in better health but also in access to other goods (income, work, etc.) and their benefits, such as leisure. To create these health investments, it is essential to have a clear vision, as health choices are long-term processes (Grossman, 2004). Perhaps the new implementation process can help to shape this vision since “the subject of physical education is now .... is a field of education that, together with other fields of education (subjects), seeks to find solutions to some of the global problems of our time” (Gombocz & Hamar, 2014, p. 102).



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# Annex

## Annex 1: Tables

Table 11: Sports activity by socio-demographic characteristics of students (%)

	play sport competitively	sports as a hobby	do not do sport	Chi <sup>2</sup>	sig.
GENDER				59,706	0,000
Men	<u>22%</u>	<u>65%</u>	<u>13%</u>		
Women	<u>15%</u>	<u>55%</u>	<u>30%</u>		
AGE GROUP				48,193	0,000
18-23 years old	<u>22%</u>	<u>55%</u>	23%		
24-29 years old	<u>13%</u>	<u>67%</u>	20%		
30-39 years old	<u>7%</u>	55%	<u>38%</u>		
at least 40 years old	<u>7%</u>	<u>69%</u>	25%		
YEAR OF GRADUATION FROM HIGH SCHOOL				56,695	0,000
2011 before	<u>6%</u>	<u>64%</u>	<u>30%</u>		
2012-2015	15%	<u>65%</u>	<u>20%</u>		
2016-2018	<u>23%</u>	<u>53%</u>	24%		
TYPE OF SETTLEMENT				33,092	0,000
Capital	20%	<u>78%</u>	<u>2%</u>		
county seat	19%	61%	<u>20%</u>		
Small town	<u>20%</u>	<u>54%</u>	26%		
Municipality	<u>10%</u>	61%	<u>29%</u>		
PARENTS' EDUCATION				68,927	0,000
up to primary	15%	<u>23%</u>	<u>62%</u>		
skilled worker	<u>13%</u>	<u>66%</u>	21%		
graduated from high school	<u>13%</u>	56%	<u>31%</u>		
graduate	<u>22%</u>	60%	<u>18%</u>		

SUBJECTIVE FINANCIAL SITUATION				35,655	0,000
very good	<u>28%</u>	<u>51%</u>	21%		
with a timetable comes out	<u>16%</u>	61%	23%		
just coming out	12%	64%	24%		
bad, hard to get out	<u>5%</u>	58%	<u>37%</u>		
WEALTH QUANTILES				28,976	0,000
Q1	<u>13%</u>	61%	26%		
Q2	20%	58%	22%		
Q3	<u>13%</u>	<u>66%</u>	21%		
Q4	<u>23%</u>	<u>51%</u>	26%		
OVERALL	17%	59%	24%	-	-

Table 12: Sport activity by student's study characteristics (%)

	play sport competitively	sports as a hobby	do not do sport	Chi <sup>2</sup>	sig.
TYPE				21,182	0,000
full-time	<u>19%</u>	59%	<u>22%</u>		
part-time	<u>11%</u>	58%	<u>31%</u>		
FORM				16,204	0,000
Bachelor training	17%	<u>56%</u>	<u>27%</u>		
Master's training	19%	60%	21%		
undivided	18%	<u>65%</u>	<u>17%</u>		
FIELD OF SCIENCE				255,224	0,000
pedagogy, education	<u>7%</u>	51%	<u>43%</u>		
medicine and health sciences	<u>10%</u>	<u>68%</u>	23%		
economics	19%	53%	28%		
sports science	<u>50%</u>	<u>45%</u>	<u>5%</u>		
engineering science	<u>12%</u>	63%	25%		
arts	5%	66%	30%		
social sciences	2%	<u>8%</u>	<u>90%</u>		
agricultural science	19%	62%	19%		
natural science	<u>38%</u>	56%	<u>7%</u>		
humanities	13%	53%	<u>34%</u>		
law and management	13%	65%	22%		
SPORTS STUDIES					
not typical	<u>12%</u>	<u>61%</u>	<u>27%</u>		
typical	54%	<u>41%</u>	<u>4%</u>		
TEACHING, TEACHING PROFESSION				22,616	0,000
not typical	<u>16%</u>	60%	<u>25%</u>		
typical	<u>29%</u>	54%	<u>17%</u>		
OVERALL	17%	59%	24%	-	-

Table 40: How would you rate your health - by socio-demographic, educational and sporting activity characteristics of students (averages on a 5-point scale)

	average	F	sig.		
SUBJECTIVE WEALTH SITUATION		27,239	0,000		
very good, I have no financial problems	4,26				
good, I'll be on schedule by the end of the month	3,91				
I'll just be out by the end of the month	3,78				
bad, I find it hard to get by in a month	3,56				
WEALTH QUARTILES		13,410	0,000		
Q1	3,79				
Q2	3,97				
Q3	3,92				
Q4	4,13				
FIELD OF SCIENCE		4,535	0,000		
pedagogy, education	3,90				
medicine and health sciences	4,08				
economics	3,89				
sports science	4,08				
engineering	3,84				
arts	3,74				
social sciences	3,42				
agricultural science	4,03				
natural science	3,98				
humanities	3,77				
law and management	4,14				
SPORTS STUDIES				8,112	0,004
not typical	3,93				
typical	4,10				
SPORT ACTIVITY		52,614	0,000		
competitive	4,27				
recreation	3,97				
no sport	3,66				
OVERALL	3,95	-	-		

Table 51: Smoking, alcohol and drug(s) use - by socio-demographic background characteristics of students (%)

	smoking				alcohol consumption				drugs have you tried	
	no smoking	occasional smoker	regular smoker	does not drink alcohol	frequency			volume		
					occasional consumption	regularly consumes	a few	much		
<b>GENDER</b>										
Men	70%	19%	11%	*	*	*	*	56%	29%	18%
Women	76%	14%	10%	*	*	*	*	69%	13%	10%
<b>AGE GROUP</b>										
18-23 years old	72%	17%	11%	13%	81%	7%	7%	64%	23%	12%
24-29 years old	74%	20%	7%	15%	81%	4%	4%	66%	19%	18%
30-39 years old	74%	5%	22%	41%	55%	4%	4%	58%	1%	8%
at least 40 years old	88%	7%	5%	40%	53%	7%	7%	59%	1%	13%
<b>PARENTS' EDUCATION</b>										
up to primary	93%	2%	5%	30%	70%	0%	0%	70%	0%	*
skilled worker	77%	13%	10%	27%	70%	3%	3%	60%	13%	*
graduated from high school	73%	13%	13%	17%	78%	5%	5%	64%	18%	*
graduate	72%	19%	8%	14%	77%	9%	9%	64%	22%	*
<b>WEALTH QUANTILES</b>										
Q1	75%	16%	9%	13%	79%	7%	7%	70%	17%	20%
Q2	74%	22%	4%	15%	81%	4%	4%	58%	28%	14%
Q3	77%	11%	12%	20%	76%	4%	4%	68%	13%	7%
Q4	70%	15%	15%	22%	69%	9%	9%	60%	18%	12%
OVERALL	74%	16%	10%	18%	76%	6%	6%	64%	19%	13%

\* not significant ( $p > 0.05$ )

Table 52: Smoking, alcohol and drug(s) use - by educational background characteristics of students (%)

	smoking			alcohol consumption				drugs	
	no smoking	occasional smoker	regular smoker	does not drink alcohol	frequency		volume		
					occasional consumption	regularly consumes	a few	much	
INSTITUTE									
University of Debrecen	74%	17%	10%	17%	77%	6%	64%	19%	*
University of Nyíregyháza	74%	10%	15%	24%	70%	6%	64%	12%	*
TYPE									
full-time	72%	18%	10%	13%	81%	6%	64%	23%	14%
part-time	80%	9%	11%	33%	61%	6%	63%	5%	9%
FORM									
Bachelor training	69%	17%	13%	*	*	*	*	*	*
Master's training	86%	8%	5%	*	*	*	*	*	*
undivided	79%	17%	4%	*	*	*	*	*	*
FIELD OF SCIENCE									
pedagogy, education	78%	11%	12%	26%	72%	2%	68%	6%	*
medicine and health sciences	77%	17%	6%	14%	80%	6%	67%	19%	*
economics	65%	14%	21%	12%	80%	8%	66%	22%	*
sports science	73%	14%	13%	22%	69%	9%	57%	21%	*
engineering science	67%	20%	13%	12%	86%	2%	60%	28%	*
arts	61%	23%	15%	22%	63%	15%	67%	11%	*
social sciences	78%	2%	20%	50%	50%	0%	50%	0%	*
agricultural science	82%	11%	7%	22%	69%	9%	59%	19%	*
natural science	81%	18%	1%	19%	75%	7%	68%	14%	*

humanities	74%	15%	11%	17%	69%	13%	66%	16%	*
law and management	70%	14%	16%	29%	65%	6%	60%	12%	*
<b>TEACHING, TEACHING PROFESSION</b>									
not typical	72%	17%	11%	*	*	*	63%	20%	14%
typical	87%	8%	5%	*	*	*	68%	10%	7%
OVERALL	74%	16%	10%	18%	76%	6%	64%	19%	13%

\* *not significant (p>0.05)*

Table 53: Smoking, alcohol and drug(s) use - by other background characteristics of students (%)

	smoking				alcohol consumption				drugs	
	no smoking	occasional smoker	regular smoker	does not drink alcohol	frequency		volume		have you tried	
					occasional consumption	regularly consumes	a few	much		
<b>SPORT ACTIVITY</b>										
competitive	75%	19%	6%	7%	87%	6%	63%	30%	10%	
recreation	74%	16%	10%	19%	74%	7%	64%	17%	15%	
no sport	72%	14%	14%	22%	73%	4%	65%	13%	10%	
<b>ATTITUDE GROUPS</b>										
rather materialistic	*	*	*	22%	67%	11%	46%	33%	25%	
rather traditionalists	*	*	*	20%	78%	2%	73%	7%	8%	
rather autonomous	*	*	*	16%	65%	20%	64%	20%	21%	
everyone else	*	*	*	17%	79%	5%	63%	20%	13%	
OVERALL	74%	16%	10%	18%	76%	6%	64%	19%	13%	

\* *not significant (p>*

