

Development of Sports Nation on the Way of Health Management

Beatrix Faragó, Zsolt Szakály, Ágnes Kovácsné Tóth, Csaba Konczos, Norbert Kovács, Zsófia Pápai, Tamás Kertész

Abstract—The future of the nation is the embodiment of a healthy society. A key segment of government policy is the development of health and a health-oriented environment. As a result, sport as an activator of health is an important area for development. In Hungary, sport is a strategic sector with the aim of developing a sports nation. The function of sport in the global society is multifaceted, which is manifested in both social and economic terms. The economic importance of sport is gaining ground in the world, with implications for Central and Eastern Europe. Smaller states, such as Hungary, cannot ignore the economic effects of exploiting the effects of sport. The relationship between physical activity and health is driven by the health economy towards the nation's economic factor. In our research, we analyzed sport as a national strategy sector and its impact on age groups. By presenting the current state of health behavior, we get an idea of the directions where development opportunities require even more intervention. The foundation of the health of a nation is the young age group, whose shaping of health will shape the future generation. Our research was attended by university students from the Faculty of Health and Sports Sciences who will be experts in the field of health in the future. The other group is the elderly, who are a growing social group due to demographic change and are a key segment of the labor market and consumer society. Our study presents the health behavior of the two age groups, their differences, and similarities. The survey also identifies gaps in the development of a health management strategy that national strategies should take into account.

Keywords—Competitiveness, health behavior, health economy, health management, sports nation.

I. INTRODUCTION

BY combining the concepts of athlete nation, health economy and healthy society, we can examine the value of human health. The relation applies to its social and economic appearance. Examining health in the interpretation of human capital also brings us to the economic sphere in which the person appears as an element of capital. The long-term effects of sport are also reflected in the athlete and his environment, which is manifested in the externalities of participation in sport [1]. One area of positive externalities in recreational sports is health, with its multiplier effect on human capital, productivity and declining health costs [2].

Investment in human capital improves individual productivity, including sport, health promotion and education. Health can be used as a production factor for the production of

other goods, which can increase one's sense of usefulness. In Grossman's model, the individual decides how much health benefits he or she wishes to obtain through sport through his or her financial resources [3]. Health affects wages, incomes and labor force participation, which are also a factor in the national economy. For employers, a healthy person appears as a productive factor that results in improved concentration, increased performance, and improved stress tolerance and self-esteem [4]. In the context of sports and quality of life, the decreasing likelihood of developing illness can reduce health care spending and reduce the number of days of illness that provide the company with productive labor. The economic benefits of physical activity can be measured in money. Specifically, it can be demonstrated financially in the savings of the social care system and in health insurance. As the number of years spent in health increases, the labor market utilization of the older age group can increase employment. Health also generates benefits at a young age, as a healthy child can be educated, educated, more productive, and more profitable. This increase in the level of education is also reflected in the increase in age, as longer life expectancy is a motivation for further training at the individual level. Studies on the burden of disease analyze how much loss it causes and how much a disease costs [5]. Economic indicators of health are now measurable financial data, which is also a factor of competitiveness in GDP.

II. SPORT AS NATIONAL STRATEGY SECTOR

There is a close relationship between health and sport, which plays a key role in developing a health-conscious lifestyle. The economic functions of sport also appear at government level as means of health, national identity and competitiveness. In Hungary, sport is a national strategic sector. The transformation of sport into a governmental strategy results from the internal transformation of sport, its importance in domestic and foreign policy, and its social and economic function.

The globalization and professionalization of sport is present not only in competitive sports but also in several areas of leisure sports. Sport as an industry is one of the tools of the innovation economy, opening up new directions in the economic sectors. Sport as industry has become part of the entertainment industry, which is being accessed by the media in the globalization process all over the world. With the mass emergence of recreational sports, the sports economy as a key strategic sector has a positive effect on GDP. The state governance of sport has changed significantly in recent decades, which has also affected financing and infrastructure.

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The functions of sport also play role in regional development, either as utilization of rehabilitation zones for sport development purposes or as the development and construction of sports infrastructure in order to create a livable society and improve the quality of life. The importance of sport appears in society as basis for healthy lifestyle, as basis for physical and mental activity, and as economic area which, with the emergence of recreational sports, is becoming more widespread in the field of the sports market and sport [6]. At the national level, sport has significant developmental impact, making it strategic sector of government. Government programs set strategic priorities to achieve their goals, these are national strategic sectors. The government's major programs and objectives appear in ideology, communication, financing, or even in the structure of institutional systems. The priorities of a government strategy are that it is defined based in non-permanent, government cycles, which are decided by government discretion. The strategy should be proportionate to the objectives of other sectors, and sanctions should be applied for deviations. The development of sport as strategic sector serves the public good, the public interest, education and health. In addition to governmental goals, the non-governmental nature of sport remains. The decline in sport in the 1990s was the first step in the process of becoming a national strategic sector. The identity-enhancing function of sport [7], in 2010 the victory orientation of politics, the international appreciation of sport, its appearance in the information revolution and innovation necessitated turning to sport and exploiting its effectiveness. The sport began its 'life' as amateur sport, a civilian, self-regulated social segment. Post-industrial society, performance-oriented, and the priority of economic development have also brought the business character of sport. Recognizing the complex effectiveness of sport, government policy has made significant investments in the development of sport. With the support of the state, sport has allowed the generation of healthier, more active sports people to grow [8]. Sport is supported directly and indirectly (by sports organizations) [9]. There are many levels of athletic support for the athlete nation, which can be achieved through a scholarship scheme [10]. Talent management is significant at national and organizational levels. In the field of sports, talent management is implemented through scholarship programs and later in civil life as corporate talent management, which is already being implemented through the use of athlete competences. Companies look for talent, treat it as part of their culture, and develop talent management strategies [11]. In developed western states, sports finance is distributed between the state, the business community, and households. In this division, 70% of state aid is used for leisure sports. Between 1% and 1.5% of the central budget is spent on sport in developed western European countries. In Hungary and in the countries of Central and Eastern Europe, this structure is less prominent, but since 2010, with the government treating sport as a strategic priority, much of the funding comes from public funds [12]. The aim is to reduce public funding for sport and to put it on a commercial footing, which has a significant impact on recreational sport, with more business

and household funding. By emphasizing sport, government strategy also indirectly improves health, as a healthy member of the nation is less dependent on the health care system, relies less on it, and is actively involved in economic processes as an efficient member of the workforce and consumer.

III. RELATIONSHIP BETWEEN SPORTS DEVELOPMENT AND HEALTH

Government strategies support the strategic development of healthy lifestyles, but health behaviors require individual action and action. The term health promotion was first spelled out by Canadian health minister Marc Lalonde in his report, the Lalonde Report [13]. The new approach resulted in a new strategic direction, based on a multisectoral approach to health. Lalonde reported on the basis of the EU Charter for Health Promotion, the Ottawa Charter [14]. According to the document, health promotion is a process in which people are able to control, manage and improve health determinants. The goal of health promotion is to represent health, to increase people's health potential and to utilize health promotion. Its tools, the development of individual abilities, the strengthening of community actions, the creation of a health-promoting environment, the reorganization of health care, and the development of health-promoting policies. The beginning of health education can be called the period when health was not manifested in the absence of disease but in the focus on the individual lifestyle. An integral part of this is the development of educational programs that promote individuals' health behaviors. It is necessary to recognize people's sense of responsibility for their health [15]. The necessity of health promotion programs is supported by the fact that the health parameters of young people have been decreasing year by year, its measurement and examination is extremely important. Everyday physical education is one of the solution strategies where young people are given the opportunity to exercise and exercise every day [16]. However, the development of health behaviors requires proper communication and individual encouragement. Health education informs and motivates, which depends on systematic planning and voluntary commitment to change. Areas of health include environmental health, physical health, intellectual health and mental health. The transfer of health education is the responsibility of professionals with deep, scientific knowledge in the field. Health education professionals provide the information and skills needed to make quality health decisions to improve health [15]. The WHO [17] (Health Promotion Glossary), has made recommendations for the development of health strategies that address the specific and community needs of health education and implement health education programs, research on health education, and communicate and support health. When defining health promotion and health education, it is important to distinguish between the two areas. Health education and health promotion are closely linked, yet differ in their methods and purpose. Health promotion has an impact on the environment, includes political actions, researches the basis of a healthy lifestyle, creates directions, tries to restore the

balance of social inequalities, and treats health and social well-being on the same level. It strives to develop health-promoting public life as a result of health-oriented health policies. Health promotion aims to increase individual knowledge and encourages the development of competencies in its application. The emphasis is on improving health and well-being. Health education is interpreted as an individual lifestyle and process, it is important that it is managed by a specialist, in which individual responsibility is strongly enforced. The method of health education is the use of communication, the use of conscious learning tools, which increases the knowledge and application of health. Health education is a complex activity that develops life skills and, in addition to individual development, increases the health of the community. The diversity of health education means a holistic interpretation, proficiency and recognition of health. Health as a part of lifestyle not only manifests itself in physical well-being, but also in mental, psychic and mental well-being [18]. In this context, the concept of health literacy, which can be attributed to skills, stands for: "health literacy is the ability to access, understand, evaluate and communicate the information needed to promote health in life" [19].

IV. HEALTH AWARENESS OF SPORTS EXPERTS

Earlier research into the health outcomes, fitness scores, and mental health correlates of physical activity among students in higher education has shown how well students have different fitness backgrounds in higher education [20], [21]. Weaker attitudes towards physical activity do not imply a strong identity. Athletes who are more active in physical activity have significantly higher muscle mass compared to non-athletes. Not much importance is attached to this fact at a young age, although over time, the health of less active students deteriorates much more rapidly than those who engage in physical activity [22]-[24]. In tertiary education, the vast majority of students do not exercise [25]. The intensity, extent and regularity of physical activity are essential for maintaining health. Regularity, when paired 1-2 times a week, requires adequate physical activity for adaptation. Between mental health and physical indicators, better outcomes include positive or more positive vision, and poorer results include negative or more negative vision. In terms of mental health, the Beck Depression Questionnaire [26], [25] showed an average lower score for the physically active than the (physically) hypoactive. Regularly active subjects also scored significantly higher on the Self-Efficacy questionnaire [27]. Interestingly, women are more sensitive to the related attitudes and relationships of mental and physical activity. Among Hungarian students, smoking and alcohol consumption are a dangerous risk factor [28]. In Hungary, the number of adult smokers and college students is high, which is not related to physical activity. Risk behaviors are characterized by the fact that they do not have an immediate effect but appear as a negative effect depending on their regularity and elapsed time. The same is the other direction in terms of physical activity, with time and regularity effectively influencing the process. There is no direct impact on performance through alcohol and

smoking, but it does have a detrimental effect over time. Its first manifestation is manifested in the attitude of behavior, which resembles adults. In addition to family socialization, the primary media for influencing student health awareness include the institutional, educational, and school settings. When designing educational programs, it is important to see the problems that occur at low levels of health awareness. The relationship between mental freshness and physical condition shows a more nuanced picture. It is important to teach health awareness in health education, although in some trainings this field does not appear at the theoretical or practical level, which reduces the importance of developing health behaviors. Awareness of education and scientific results, as well as continuous awareness of healthy lifestyles are essential aspects in the development of health awareness. The biggest problem in developing a healthy lifestyle is finding and developing a method. This is helped by the training, the transfer of broad knowledge, on the basis of which individual health promotion can be developed [21].

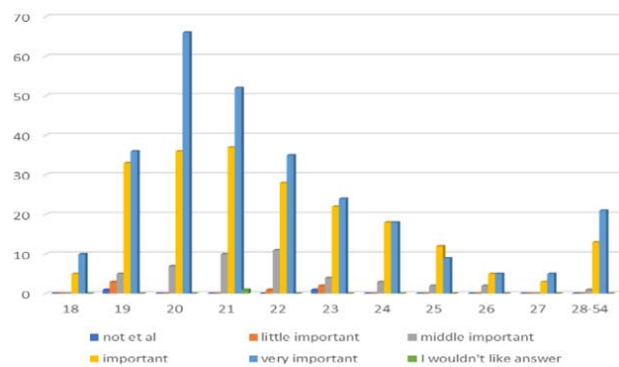


Fig. 1 Importance of healthy nutrition for health, students/ person/ age N=548

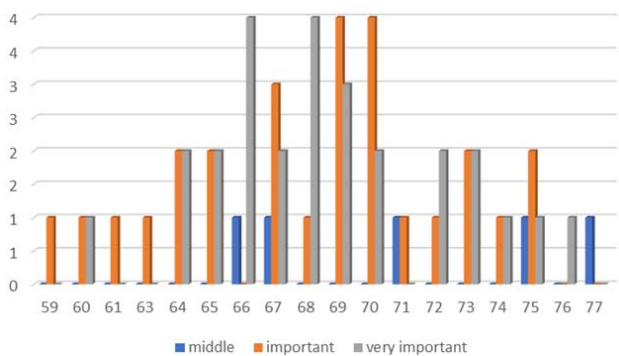


Fig. 2 Importance of healthy nutrition for health, elderly/person/age

V. HEALTH BEHAVIOR RESEARCH IN GROUP OF UNIVERSITY STUDENTS AND OF SENIOR GROUP

The relationship between health promotion and health economy gets meaning based on the appearance of health awareness. The survey of health behavior and health awareness forms the basis of the national health image and makes the quality of life visible. In our survey, we assessed

the health awareness and fitness of university students as young and old. In our study, we evaluated 548 (N = 548) university students aged 18-54 and 59 (N = 59) aged 59-77 with respect to their health behavior. The survey was conducted by questionnaire survey method. The location of the study in Hungary is the city of Győr, which represents an economically high level. The survey was conducted by researchers of the Széchenyi István University Faculty of Health and Sport Sciences. The analysis of the questionnaires was evaluated by SPSS statistical method. In the analysis, we assessed the results by age group, thereby making visible the differences between each age group. The questions in the questionnaire measured health awareness, health behavior, which measured the application of determinants of health behavior, and judgments of one's own fitness status. In the first question, we examined the perception of health-relevant factors by age groups to the question "How important do you think the following factors are to your health?" (Figs. 1, 2). Healthy eating appears to be of high importance in the student group, which did not show any other proportion in the elderly.

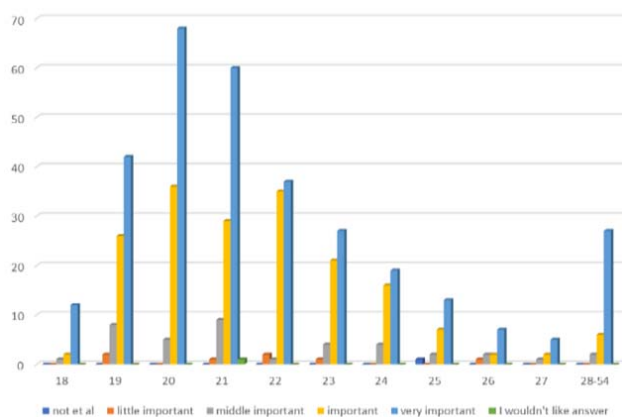


Fig. 2 Importance of fluid intake by students/person/age, N = 548

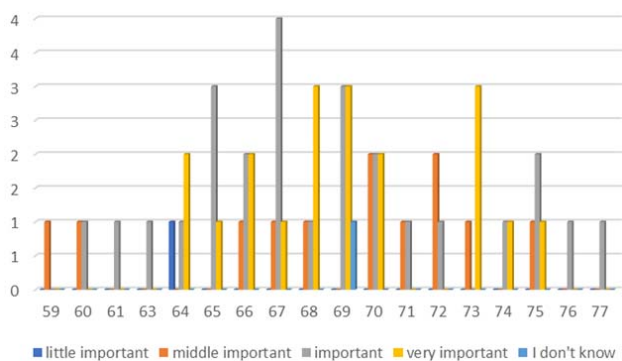


Fig. 3 Importance of fluid intake by elderly/person/age, N = 59

Harmful passions are a major issue in health prevention, especially among young people at risk. Knowledge of the health risks of harmful addictions is strongly reflected in the survey, which strongly indicates both knowledge of the health risks and its harmful effects (Figs. 5, 6).

The importance of physical activity in young people was

changing. Although its importance was high, the responses of exercise considered moderately important appeared. In the elderly this proportion appeared more balanced (Figs. 7, 8).

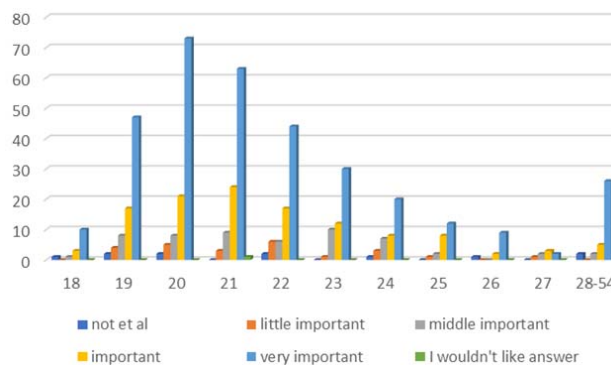


Fig. 5 Importance of avoiding harmful passion by students/person/age

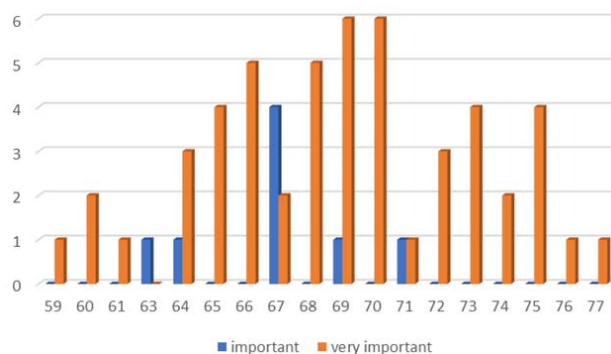


Fig. 4 Importance of avoiding harmful passion by elderly/person/age

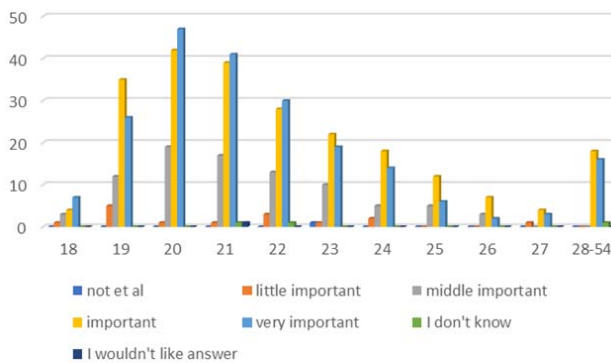


Fig. 5 The importance of more than 30 minutes of exercise by students/person/age

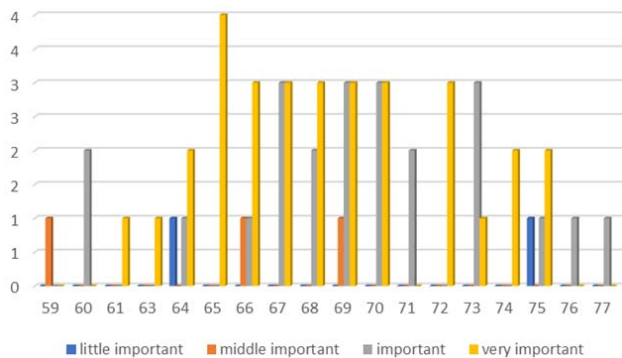


Fig. 6 The importance of more than 30 minutes of exercise by elderly/person/age

In addition to examining health behaviors, it is important to assess your health image. If health awareness is already at an adequate level, how much of its application is reflected in lifestyle? Further questions measure one's own judgment of health, fitness. Figs. 9 and 10 show weekly physical activity for the two age groups. It can be said that both patterns train several times a week, representing a key segment for the elderly. The student group, on the other hand, expects more suitable physical activity per week as they are studying health and sports science.

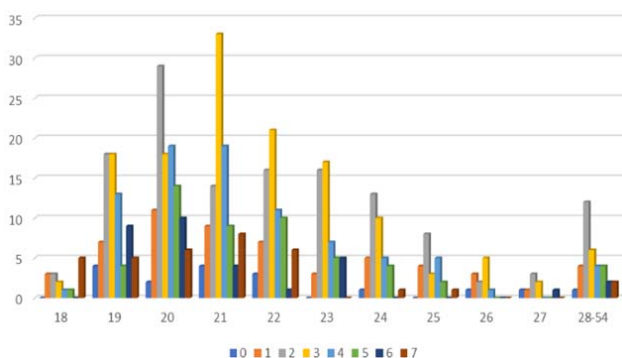


Fig. 7 Weekly physical activity by students/person/age

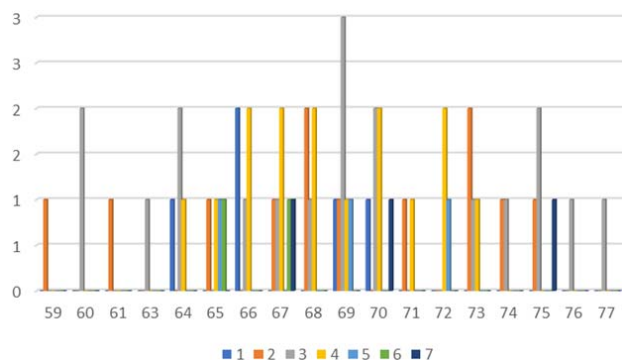


Fig. 8 Weekly physical activity by elderly/person/age

Health awareness implies action. It does not come naturally; it is important to realize it consciously. In the question below,

we examined the extent of this. In terms of health behavior and prevention, students no longer see the health picture that appeared in health conscious thinking earlier. In the student group, average activity was shown, while in the older age group, average and above average prevention was highlighted (Figs. 11, 12).

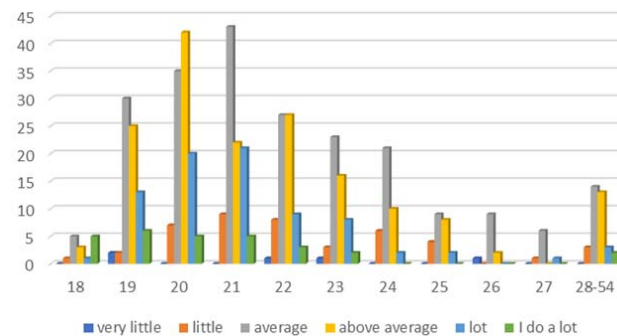


Fig. 9 How much do you do to protect your health? students/person/age

Young people's perception of fitness was in the medium to good category, which did not differ from that of the elderly. This result is not the best, given the age characteristics, as the fitness level of young people should be very good. On the other hand, from the perspective of the elderly, this result is positive, as they are in active aging (Figs. 13, 14).

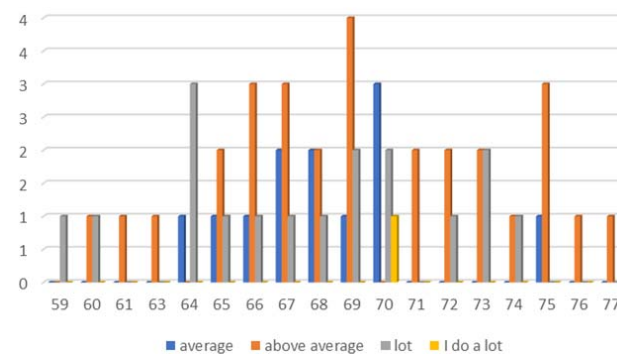


Fig. 10 How much do you do to protect your health? elderly/person/age

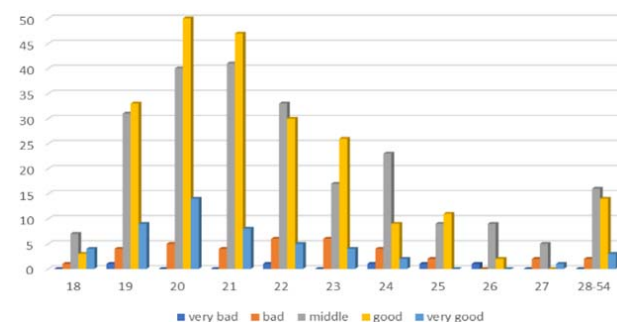


Fig. 11 How do you feel about your fitness? students/person/age

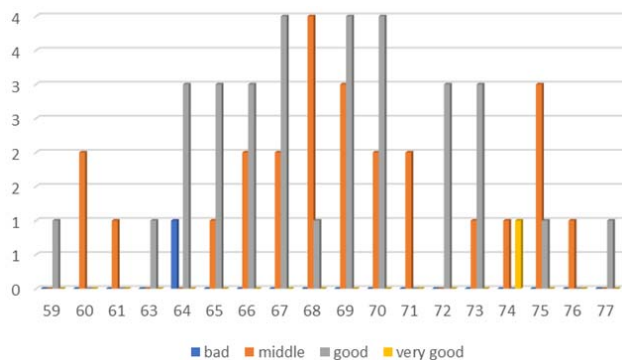


Fig. 12 How do you feel about your fitness? students/person/age

According to the health image survey, the health image of young people does not show strong health behavior or health awareness. On the other hand, a positive picture could be obtained of the examined group of the elderly. Although the older age group is not a representative sample, they will be at the same level as graduate students in terms of education. The group of young people will become professionals in the future field of health and sports science, which will require the education sector to do a great deal to improve their health image.

VI. CONCLUSION

Based on the results of the survey, it can be said that health awareness appears in both the student and senior age groups, which shows a positive trend in the continuous maintenance of health behavior. Theoretical knowledge underpins, but does not necessarily imply, health conscious action. This process is also observed in our study. While the health behaviors of the elderly are reflected in their lifestyles and daily activities, in the student group, health and health behaviors appear to be weaker. The results of the survey provide guidance to educational institutions and sports associations on what areas need to be strengthened in the communication of health and prevention. It is necessary to use health management tools in the topics of the trainings and in the dissemination of information, which together contribute to the creation of mental, mental and physical well-being. Health promotion methods also support the effective development of the sector. The health picture of future health and sports professionals does not show signs of calm, it needs to be increased and improved. The promotion of health consciousness and its practical implementation is based on individual responsibility, but as a motivating background the social groups, the civil sphere and the sectoral institutional system are decisive. A positive example of health behavior, however, is the older, active age group, for whom health is even more valuable. The number of years spent in health is a strong motivation for them and serves as an example for the elderly.

VII. SUMMARY

In addition to sport, health-conscious lifestyles play a key role in shaping the athlete nation, which has an impact on the

national economy. Increasing the health of the society, raising the standard of living is a strategic sector that has a multiplier effect in the national culture and economy. The need for health behavior testing is significant, which illustrates the practical implications of theory. With the results we can formulate new paths, directions, and strategies for a more successful health culture and for the emergence of an athletic nation. Employment in health requires a certain level of quality of life, for which national policy has a great responsibility. As the athlete becomes a nation, the government's support for sport has increased, and to improve health behaviors and the efficiency of the health economy, health promotion is needed, which is boosted through the strengthening of recreational sports. The effectiveness of health and sport on society and the economy shows clear, measurable results that ensure its legitimacy.

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REFERENCES

- [1] D. Paár „Sport és gazdasági aktivitás” In: Laczkó Tamás, Rétsági Erzsébet ed. 2015 *A sport társadalmi aspektusai*. Pécsi Tudományegyetem Egészségtudományi Kar, Pécs
- [2] P. Downward, A. Dawson, T. Dejonghe „Sports Economics – Theory, Evidence and Policy” *Elsevier*, Burlington 2009. 417.
- [3] M.Grossman „The Demand for Health: A Theoretical and Empirical Investigation” Columbia University Press for the *National Bureau of Economic Research*, New York. 1972. 135.
- [4] M. Bleyer, I. Saliterer „Sport im Kontext betrieblicher Gesundheitsförderung: Entwicklungslinien und Ansatzpunkte für Sportprogramme in Unternehmen” In: Urnik, S. (ed.): *Sport und Gesundheit in Wirtschaft und Gesellschaft*. Manzsche Verlags- und Universitätsbuchhandlung, Wien. 2007. 101-118.
- [5] J.E. Segel „Cost-of-Illness Studies” – *A Primer RTI International, RTI-UNC Center of Excellence in Health Promotion Economics* 2006. http://www.rti.org/pubs/coi_primer.pdf
- [6] P. Béki „Rekreáció-menedzsment” Campus Kiadó, Debrecen 2015
- [7] B. Faragó, M. Konczosné Szombathelyi „Identity of athletes on the way of professional career as factor of regional identity” In: Korcsmáros, Enikő (ed.) *A Selye János Egyetem 2018-as X. Nemzetközi Tudományos Konferenciájának tanulmánykötete = Zborník X. medzinárodnej vedeckej konferencie Univerzity J. Selyeho - 2018*
- [8] B. Faragó „A sportstratégia ágazat erősödése Magyarországon a 2011-2016-os időszakban” *Tér-Gazdaság-Ember* V. : 3 pp. 94-109. 2064-1176 , 2017. 113 p.
- [9] Zs. Gösi, Zs. Bukta „Sportszövetségek a kiemelt sportágfejlesztés tükrében” *Taylor: Gazdálkodás- És Szerveztudományi Folyóirat: A Virtuális Intézet Közép-Európa Kutatására Közleményei* 36 pp. 46-55. 2019/2 , 10 p. https://www.researchgate.net/publication/333702874_SPORTSZOVETSEGEK_A_KIEMELT_SPORTAGFEJLESZTES_TU_KREBEN
- [10] Zs. Gösi „Magyarországi iskolarendszer alapú sporttámogatások” *Sport, tanulás, karrier Neveléstudomány: Oktatás Kutatás Innováció: 2* pp. 44-60., 2018. 17 p. [http://nevelstudomany.elte.hu/downloads/2018/nevelstudomany_2018_2_44-60.pdf](http://nevelestudomany.elte.hu/downloads/2018/nevelstudomany_2018_2_44-60.pdf)
- [11] M. Konczosné Szombathelyi „A tehetségmenedzsment kommunikációja” In: Borgulya, Ágnes; Konczosné, Szombathelyi Márta (ed.) *Vállalati kommunikációmenedzsment: tanulmánykötet*, Budapest, Magyarország: L'Harmattan, Károli Gáspár Református Egyetem, 2017 pp. 165-179. , 15.
- [12] T. Sárközy „A sport mint nemzetstratégiai ágazat” *Előnyök és*

- hátrányok, hosszú távú kilátások Sport as a Strategic Sector in the National Economy Benefits, Drawbacks and Long-Term Perspectives *Polgári Szemle*, 13. évf., 4-6., 2017, 143-159., DOI: 10.24307/psz.2017.1212
- [13] M. Landole „A New Perspective on the Health of Canadians: A working document (Lalonde Report)” Ottawa. 1974 http://www.hc-sc.gc.ca/hcs-sss/alt_formats/hpb-dgps/pdf/pubs/1974-lalonde/lalonde-eng.pdf.
- [14] Ottawa Charta 1986. november 17-21. Az Ottawai Egészségfejlesztési Charta Nemzetközi Egészségfejlesztési Konferencia, Kanada
- [15] J. Naidoo, J. Wills, „*Gyakorlati alapok*” Medicina Könyvkiadó Rt., Budapest. 1999
- [16] Zs. Szakály, Zs. Liszkai, B. Lengvári, I. Jankov, J. Bognár, B. Fügedi „Physique, Body Composition and Aerobic Performance of Male Teacher Education Students” *Studia Universitatis Babes-Bolyai Educatio Artis Gymnasticae* 61: 2, June pp. 59-71., 2016. 13 p. Komárno, Szlovákia: Selye János Egyetem, 2018 pp. 67-79., 380 p
- [17] WHO (1998): *Health Promotion Glossary*. WHO, Geneva. http://pdfbooks.org/download.php?url=http%3A%2F%2Fwww.who.int%2Fhpr%2FNPH%2Fdocs%2Fhp_glossary_en.pdf.
- [18] L. Nagy, K. Barabás „Az egészségműveltség és egészségmagatartás diagnosztikus mérésének lehetőségei” In: Csapó Benő, Zsolnai Anikó (ed.) *Kognitív és affektív fejlődési folyamatok diagnosztikus értékelésének lehetőségei az iskola kezdő szakaszában*. Budapest: Tankönyvkiadó, 2011. pp. 173-224.
- [19] L. Nielsen-Bohlman, A. M. Panzer, D.A. „Kinding Health Literacy: A Prescription to End Confusion” *National Academic Press*, Washington D. C. 2004
- [20] R. Page, F. Ihasz, R. Klarova „Exploring the relationship between measures of social interaction and physical activity participation among eastern european adolescents” *Journal of Coimbra Network on exercise science*, 1(1) 2004 43-46.
- [21] Cs. Koncez „Az egészségtudatosság és az egészségdeterminánsok kölcsönhatásának vizsgálata” *Doktori értekezés*, Semmelweis Egyetem Sporttudományi Doktori Iskola, Budapest, 2012
- [22] G. F. Fletcher, N. Blair, J. Blumenthal „Statement on exercise. Benefits and re-recommendations for physical activity programs for all Americans” *Circulation*, 1992. 86: 340-344.
- [23] C. Bouchard „Physical activity and obesity” *Human Kinetics Publisher*, Inc. Champaign, Illinois, 2000. 3-21., 311-345.
- [24] T.J. Cole, M.C. Bellizzi, K.M. Flegal, W.H. Dietz „Establishing a standard definition for child overweight and obesity: international survey” *British Medical Journal*, 2000. 320: 1240-1243.
- [25] A.T. Beck, A. Weissman, D. Lester, L. Trexler „The measurement of pessimism: The Hopelessness Scale” *Journal of Consulting and Clinical Psychology*, 1974. 42: 861-865.
- [26] M. Kopp, M. Kovács M. „*A magyar népesség életminősége az ezredfordulón*” Semmelweis Kiadó, Budapest 2006
- [27] P. Szalay „Az alkoholizmus néhány pszichológiai és szomatikus következményének vizsgálata” *Doktori értekezés*, SE 2005
- [28] M. Kopp, Á. Skrabski „*Alkalmazott magatartástudomány*” Corvinus, Budapest. 1995.