

## PHYSICAL ACTIVITY OF STUDENTS

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**Abstract:** Research has shown and constantly confirms the fact that people are less and less physically active due to rapid technological development, which has a direct consequence of an increased risk of developing various diseases, especially non-infectious chronic ones. Reduced levels of physical activities were equally observed, both in children and young people and in adults. The aim of the work is to point out the problems that arise due to the physical inactivity of the student population and point out possible solutions that can be applied in practice. To some extent, the education system in the Republic of Serbia, which abolished regular physical education classes at universities, contributed to this, which worsened the situation even more. Some faculties include sports and recreational activities in their curricula and teaching plans. The conclusion is that there are examples of good practices and solutions that promote the physical activity of students, but everyone should be involved, starting from state institutions, clubs, and associations, and all the way to the family.

**Keywords:** movement, physical activity, students.

### INTRODUCTION

#### *Movement as a basis of physical activity*

A permanent man's need to make his way of living easier is significantly affected by computer technologies and the oncoming of the internet. Multiple human-performed operations that require enormous energy are replaced by computers, which implies minimum energy inputs allocated predominantly for many-hour sitting. Thus, contemporary technology has reduced human activity mostly to intellectual work, with a direct consequence of decreased physical activity that has activated the potential risks of adverse effects on health (Hollmann & Hettinger, 2000). At the same time, it is just with this modernization that the man has imposed on himself, consciously or unconsciously, a specific style of life that can significantly cause many diseases, predominantly chronic noncontagious ones (obesity, hypertension, bad posture, and postural disorders, diabetes, bad mental condition). Noncontagious chronic diseases whose treatment requires significant material costs are the most frequent reason for using health care services. Research carried out in Serbia (Milić et al., 2021) shows that the majority percentage of the examined population has hypertension (29.6%), then the lower spinal deformity or another chronic back problem (17.2%), neck deformity or another chronic cervical spine problem (12.1%), increased lipids in the blood (10.8%), coronary heart disease or angina pectoris (8.9%), diabetes (7.8%), allergy (7.3%), degenerative joint disease or arthrosis (6.9%), depression (4.3%) and kidney problems (3.9%).

Besides, throughout the history of human existence, we have been exposed to different diseases that, each in its way, have taken its toll in terms of human lives. For this reason, doctors and scientists have continuously strived for medications that could generally affect a longer life expectancy. Based on the present state of affairs, they are on the right track since there is an increasing tendency toward longer life with more good-health years. Accordingly, the global life expectancy at birth rose from 66.8 years in 2000 to 73.3 years in 2019, while the healthy life expectancy (HALE) went up from 58.3 years to 63.7 (WHO, 2022). Decades of effort and work were necessary to achieve such results. In turn, there is an absurd situation in which, in the quest for new solutions for disease elimination and additionally increased life expectancy, the man has deprived himself of the accessibility of natural medication, i.e., movement. Its benefit is, first of all, in prevention since by „consuming“ it, we can decrease the probability of occurrence of the above chronic noncontagious diseases.

Even though life officially begins with childbirth, by using ultrasound probes, pediatricians can evaluate the quality of the human fetus during pregnancy, among other things, on the basis of its *movement*. Immediately after

childbirth, more specifically, after the first and the fifth minute of its life, the baby's vitality is estimated using the APGAR test, one part of which, i.e., ACTIVITY is essentially based on the movement of muscles (muscular tonus). At the beginning of the millennium, particular researchers (Casey, McIntire, & Leveno, 2001) found that the APGAR scoring system remained relevant for the prognosis of neonatal survival during the former 50-year period.

The movement is, among other things, the basis of further estimation of the child's motor development; thus, there are criteria for monitoring motor development (head posture control, sitting and standing) in the first year of life, which should be spontaneous (Dimitrijević, Čolović, 2005). During childhood, as well as in other ages in life (puberty, youth, middle age, and elderly age), the movement has an equally important significance, both for performing everyday activities and preservation of health, prevention of different noncontagious diseases, and also for top sports achievements. Also, when dealing with the elderly, their vitality is frequently equalized with the ability to perform by themselves particular activities for which engagement of specific movements is required (e.g., getting up, taking a bath, getting dressed, walking, and running). In that sense, there are certain tests for the estimation of the physical capacities of elderly people for performing everyday activities (Rikli, Jones, 2013). But then again, the ability to perform fast, precisely, and vigorously specific movements in the sport can bring an individual a solution to existential problems, enrichment, and fame by means of which preconditions (but not the only ones) get created for a quality life. How high the significance of the movement is, not only in the physical sense but also in the psychological one, is probably best understood by persons who have survived traumatic injuries (of the spina cord, brain, etc.). The quality of their life is conditioned directly by the ability to perform particular movements through physical exercises. In accordance with this, for each life age mentioned above, i.e., depending on the characteristics of each life age, it is necessary to practice movement as a basis for different physical activities but also physical exercising.

### ***The concept and importance of physical activities***

According to the most frequently mentioned definition, *physical activities* are any kind of bodily *movements* produced by skeletal muscles that result in energy consumption. (Caspersen, Powell, Christenson, 1985). Essentially the same, but the slightly corrected definition is supported by the World Health Organization (WHO), according to which the activities requiring energy consumption are replaced by bodily movements "requiring energy expenditure" (Piggin, 2020). Criticizing the existing definition, the same author believes it is not holistic enough, so he offers the following one, which says that physical activity includes people who move, act, and perform something within a culturally specific space and context and under the influence of a unique set of interests, emotions, instructions, ideas, and relationships (Pigin, 2019). A group of authors (Ostojić, Veljović, Stojanović, Mededović, Ahmetović, 2009) gives a precise definition of the difference between physical activity and physical exercising. In that context, physical activity represents all movements that affect higher energy consumption than at rest and includes everyday activities such as walking, cycling, climbing stairs, housework, and going shopping. Exercising, on the other side, represents a planned and fit-for-purpose activity whose primary aim is the improvement of health and physical fitness. The common denominator for both is definitely the movement.

In contemporary terminology, the absence of physical activities means physical inactivity. An estimate based on findings of the World Health Organization (WHO) suggests that 3.2 million death outcomes per year have to do with insufficient physical activity, as well as that it is the fourth leading risk factor of the occurrence of noncontagious diseases. Globally speaking, 1 in 4 adult persons and 3 in 4 adolescents (11-17 years of age) do not follow current global recommendations for physical activity defined by the WHO. The current recommendation for adult persons is at least 50 minutes of physical activity of moderate intensity per week (both paid and non-paid work: housework, going for a walk, cycling, and some form of recreation that also includes sports activities) and 60 minutes of moderate or intensive physical activity per day, for adolescents. Along with the economic development, the levels of physical inactivity go up so that they are twice as much in high-income countries than in low-income ones due to the change in transport services, increased use of technology, and urbanization (WHO, 2018).

### ***Physical activity of students***

The Law on Youth of the Republic of Serbia (2011) defines youth or young people as persons from 15 to 30 years of age and including it. Also, the student population account for the most part of it. Concerning psychophysical abilities of that age, a logical conclusion is that it is a physically active population. However, research shows the op-

posite is true since young people spend more time in sedentary behavior and high consumption of alcohol and tobacco during the university period (Kwan et al., 2012, Ortega et al., 2013), and they are physically inactive (Hase et al., 2004, Irvin, 2004). Serbia is no exception (Macanović et al., 2013, Malčić, Marić-Jurišin, 2018). Some researchers have shown that the highest drop in physical activities occurs right during university studies, i.e., during the transition from youth age to the age of adults (Kwan, Cairney, Faulkner & Pullenayegum, 2012). Others (Grim, Hertz, Petosa, 2011) confirm that the steepest curve showing the drop in physical activities can be observed at the very beginning of academic studies so that the level of recommended physical activities goes down after the 24<sup>th</sup> year of age.

At the same time, a serious problem incurs with encouraging students to participate in physical activities every day in order to gain health benefits. Research results indicate that the current higher education does not encourage students to become physically active adults (Keating, Guan, Piñero, Bridges, 2005).

The situation is similar in Serbia. Until 1998, physical activities at universities in Serbia could have been practiced through physical education and sports (competitive) activities that formed part of the curriculum of each faculty. As exemplified by the University of Belgrade, during these years but before passing the Law, one could notice a system in which each first-year student had to pass a swimming test. Different sports activities were on offer: various fitness programs, sports games, cross-country running, and skating, as well as an organized walking tour to Avala and a sports-recreative day at Ada Ciganlija. Classes of physical education (two classes per week) were held at sports centers. Classes attendance was certified by a signature and stamp in the student booklet, and it was not possible to verify a semester without a sufficient number of these activities. Students absent from classes for any reason had a chance to compensate for the missed classes during the weekend, taking care not to exceed the number of activities, i.e., to avoid disrupting the continuity of regular exercising (Mitić, 2008). The organization of kinesiological activities in neighboring Croatia was similar, i.e., they used to be part of compulsory student content during a particular semester (Gelemović & Svoboda, 2010; Granić, Hraste & Marković, 2014).

Even though being quite clearly recognized within the context of Serbian academic circles, the problem of youth physical (in)activity has still not received proper attention, neither in terms of systematic and empirical research nor adequate active institutional support (especially at the level of higher education institutions). Although education “authorities” declaratively advocate and formally emphasize the importance of university sports, a clear and timely scheduled development concept of sports (regular physical exercising) at higher education institutions in Serbia is still missing. This has resulted in a still visible, spontaneous, and chaotic existence of certain forms of sport at universities. Success in student sports competitions is due to sports organizations outside the education system rather than an organized sports life within the university. Among other things, students have neither sports facilities for exercising and competition at their faculties nor a clearly and expertly formed system for performing sports activities matching their interests and needs (Nešić, Nešić, 2020, pp. 18). In this light, research results indicate that there is a significant difference relevant to the faculty at which they study so that intensive physical activities are predominantly practiced by students of the Faculty of Sport and Physical Education, whereas the least engagement in these activities is reported for students of the Faculty of Sciences and Mathematics (Malčić, Marić-Jurišin, 2018).

In research conducted with an aim to examine students’ perception of physical activities, more specifically, the perception of sports activities (Nešić, Nešić, 2020), the highest number of examinees clearly indicated the factor of sports infrastructure at higher education institutions (poor or non-existent), as well as lack of information (knowledge) on values and benefits of regular physical exercising as principal reasons for non-practicing physical activities. The solution to the problem could probably be found in relevant government institutions that could provide the funds needed for the construction of new sports and recreation facilities or refurbishment of the existing ones. As for the issue of informedness on the values of physical exercise, it is something government institutions can arrange within the systems they manage. Also, these issues do not require great material resources, whereas particular types of workshops and lectures can be organized by hiring professors and experts in the relevant fields. However, the more striking issue is the Government’s attitude towards these issues since they do not pay due attention to them. The very fact that the last Sports Development Strategy of the Republic of Serbia has been mapped out for the period 2014-2018 shows that concrete action concerning this segment is also considerably delayed. Taking into account the fact that an almost four-year Olympic cycle has passed without the Strategy for the 2019-2023 period, as well as that the new 2023-2027 should have long since been announced, the conclusion logically imposed is that the issue of university sport is not in the focus of the Government. Even though the above document (2014-2018 Sports Development Strategy) foresaw

particular improvements in university sports (material and technical conditions, increased number of sports sections, and facilitating studies of top athletes), nothing has been realized practically. The relevant proof lies in the Implementation Analysis of the expected outcomes defined by the 2014-2018 Sports Development Strategy in the Republic of Serbia, in which the prime aim was the development of the sport of children and youth, including school sports too. University sport was mentioned as a part of this aim, but its realization is only described scantily in the detailed analysis of the Strategy. However, we do not have the relevant data for the university population, so giving the exact breakout report at this moment is not possible. Therefore, albeit conditionally, we can conclude that this expected outcome was realized (cf. Implementation Analysis of expected outcomes defined by 2014-2018 Sports Development Strategy of the Republic of Serbia, pp. 17). In fact, the above estimation of outcome realization is based on a single piece of information in the Analysis, i.e., the percentage of students engaged in sports competitions amounting to an extremely low 6.8% in 2018 (versus only 3% in 2015) and 7.2% at the municipality level (versus 4% in 2015).

### *Examples of good practice*

The example of Novi Sad City Authorities for Sport and Youth that supported the 2013-2019 youth-focused project entitled “Make haste slowly”, whose leader was a sports association “Super Active” from Novi Sad, speaks in favor of the fact that there are solutions that are also applicable. The Project involved free-of-charge sports and recreational activities that the young practiced under the supervision of professionals, professors of sports and physical education, and licensed coaches. As exemplified by the Project, cooperation in all factors that can affect the promotion of physical activity is possible, as well as creating a work matrix for the future. On the top of the pyramid are City Authorities, which provided the necessary funds, as well as the facilities and timing for particular sports and recreation activities (swimming pool and ice rink). Even though research findings (Kordić, Babić, 2011) indicate that most students state that the main reasons for non-practicing physical activities are shortage of time (26%) and faculty obligations (23%), with the lowest importance given to insufficient funds (2%), it is evident that the implementation of such a project is not possible without the material help of local authorities. The obtained funds were used for purchasing sports apparatuses necessary for the Project implementation but also for payments of fees of professionals as a means of extra motivation for making the Project successful. Apart from the City Authorities, sports clubs, and sports associations also contributed to the Project implementation, even though by helping the animation of youth for sports and recreation activities, they also gained their own benefits directly. Clubs also could offer free-of-charge exercise timelines for the young according to their estimation and capabilities. In this way, they could indirectly attract potential users of their services since there is practical evidence that those who liked such activities used to become regular club members. That is especially true of less popular sports, so clubs were interested in getting promoted this way. In addition to providing professional staff, the Project leader had to recognize the wishes and interests of the young, so they conducted occasional surveys through the most accessible social networks for the young people, which provided answers on the type of sports and recreation activities they wished to perform. In this way, besides standard sports like swimming, skating, and running, other sports were included too, such as fencing, badminton, darts, sports dance, Nordic walking, hiking and tracking, sports climbing, table tennis, golf, folklore, aqua aerobics, Zumba, cycling, martial arts (boxing, aikido, capoeira), archery, shooting, parachuting, bowling, diving, and horse riding. The fact that 5000 young people participated in the Project implementation, predominantly students of the Novi Sad University, suggests that interest in the Project was evidently high.

### **CONCLUSIONS**

The irrevocable fact is that the young, more exactly, students making up part of this population, are not sufficiently physically active. Lots of research works tried to find out the actual reasons for this, with only a few that gave concrete suggestions for solving the problem of insufficient physical activities. With research into these issues and an overview of the accessible literature, the authors have drawn the following conclusions.

The problem of insufficient physical activity in youth, concretely students, must be solved synchronically and in several directions. All relevant factors should be involved in it, such as government authorities in this field (Ministry of Youth and Sports of the Republic of Serbia, local self-governing authorities, city authorities for sport and youth, faculties and higher schools), sports clubs and associations, marketing experts, psychologists, but also families.

Government institutions and local self-governing authorities should provide material resources rather than only

declarative support for all activities (projects) that could yield positive effects in terms of making students recognize, understand, and get involved in particular physical activities. Besides, government institutions should monitor those issues and include them timely in Sports Strategy since any delay aggravates the situation, as exemplified by turbulent times during which the Korona virus pandemic has further diminished the level of physical activity of the whole global population and not only students.

Faculties and higher schools should not reconcile to the current situation for which they are not directly responsible since the 1998 Law relieved them from compulsory classes of sport and physical education at tertiary education. Thus, an urgent change is necessary concerning the current situation in which students do not get in touch with organized physical activities (except for faculties of sport and physical education and academic institutions that have recognized the importance of physical activities and included them in their curricula). Actually, all academic institutions should introduce some organized physical activities, either on a mandatory basis or an optional one. For these activities, students could also get credits in accordance with their engagement and effort. A key component in the physical activities on offer should be the interest of students themselves, meaning that they do not have to take a strict form of the class of physical education that maintained some relics from the past times such as red shorts, white T-shirts, strict discipline, class timing, and duration, as well as prescribed sports events for practicing. That practically means that organized physical activities should result from monitoring students' needs through different surveys via social networks that could provide information on the activities students are actually interested in, rather than being reduced to playing football and basketball only. In this light, some other less "known" and less publicly practiced sports events can be much more interesting than, let's say classic gymnastics, such as darts, archery, aqua aerobic, parachuting, dance, countryside outings, boating, and kayaking.

Sports clubs have enormous potential for recreational activities but they do not recognize them since they are primarily interested in the competitive-oriented population alone. Such a harsh reality in most sports clubs is exemplified by the fact that a 19-year-old applicant for admission at a swimming or volleyball club is rejected, by default, since s/he is late for the competition. On the other hand, there is a noticeable increase of recreation runners globally, as well as at home where they, in fact, predominate in organized races, and by paying their participation fees, they help the organization of races in which professional runners take part too.

The youth, i.e., the student population, are very active in social networks, which should be exploited for more intensive action, marketing actions, workshops, dialogues, blogs, and lectures, all aimed at paying closer attention to physical activities. Besides, the use of particular mobile applications for sport, fitness, etc., can motivate some of them for taking moves to take action.

Concerning motivation through the use of psychological tools such as a motivational interview, significant progress in practicing physical activity was reported in examinees surveyed using this technique (Lundahl, Kunz, Brownell, Tollefson, Burke, 2010). A group of authors (Karnes, Meyer, Berger, Brondino, 2015) also explored the possibility of using motivational interviews to increase the intensity of physical activity through the Internet, which yielded promising results. The authors also believe that this form of motivation is also an effective means of intervention aimed at health promotion.

Even though the family is listed at the very end, it should actually be the prime factor in deciding whether or not children will be physically active in the future. Children brought up in the environment, i.e., in families where parents attach high significance to physical activities, become physically active themselves. It is deemed that the period of academic studies is the last chance for a person to embrace a healthy lifestyle.

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