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Physical activity and sleep quality of young people – formation of habits in the family of origin

Aktywność fizyczna i jakość snu młodych osób – kształtowanie nawyków w rodzinie generacyjnej

Abstract

Introduction. Health is an important value for many of us. Every year, more and more people take care of their lifestyle, which is the most important determinant of health. Healthier eating habits, increased physical activity, or quitting smoking are being implemented increasingly consciously. In recent years, attention has also been paid to the quality of sleep, which has a major effect on our overall well-being.

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Aim. This study aims to investigate and evaluate the level of physical activity and sleep quality among young people.
Materials and methods. A total of 206 Wroclaw Medical University students participated in the survey. It included self-designed demographics and standardised questionnaires: the International Physical Activity Questionnaire (IPAQ) – Short Form, Pittsburgh Sleep Quality Questionnaire (PSQI).
Results. An overwhelming number of respondents (87%) were physically active and reached sufficient or high levels of physical activity. As many as 86% of women and 90% of men were physically active. As many as 86% of rural residents and 87% of urban residents were physically active. More than half of young people had poor sleep quality, although 81% subjectively rated their sleep positively. Poor sleep quality was reported by approximately 52% of women and 57.5% of men. The declared average amount of sleep was 6.8 hours per night. Poor sleep quality was reported by 58% of students living in rural areas and 51% of those living in urban residents.
Conclusion. 1. Young people are physically active and achieve an adequate level of physical activity. 2. Young people have poor sleep quality. 4. There is a need to educate young people about the benefits of physical activity and good sleep quality as key components of a healthy lifestyle. It seems important to increase health promotion activities among young people.

***Keywords*:** physical activity, sleep quality, students, IPAQ, PSQI, upbringing of adolescents, family of origin.

Abstrakt
Wprowadzenie. Zdrowie jest wartością ważną dla wielu z nas. Z roku na rok coraz więcej osób dba o swój styl życia, który jest najistotniejszą determinantą zdrowia. Coraz świadomiej wprowadza się zdrowe nawyki żywieniowe, zwiększa aktywność fizyczną oraz rezygnuje z palenia papierosów. W ostatnich latach coraz bardziej zwraca się także uwagę na jakość snu, który ma duży wpływ na nasz ogólny dobrostan. Aktywność fizyczna i jakość snu mają wymierne znaczenie w procesie kształtowania charakteru adolescentów i młodych dorosłych.
Cel. Celem pracy była ocena poziomu aktywności fizycznej i jakości snu wśród młodych osób oraz ukazanie znaczenia kształtowania nawyków w zakresie obu tych obszarów w rodzinie generacyjnej.
Materiał i metody. W badaniu wzięło udział 206 młodych osób. Do badania wykorzystano standaryzowane kwestionariusze: Międzynarodowy Kwestionariusz Aktywności Fizycznej (IPAQ) – wersja krótka, Kwestionariusz jakości snu Pittsburgh (PSQI) oraz kwestionariusz własnego autorstwa.
Wyniki. Przeważająca liczba respondentów (87%) była aktywna fizycznie, osiągając wystarczający lub wysoki poziom aktywności. Aż 86% kobiet oraz 90% mężczyzn było aktywnych fizycznie. Wśród młodych mieszkańców wsi aktywnych fizycznie było 86% badanych, podobnie jak 87% młodych mieszkańców miast. Ponad połowa badanych miała złą jakość snu, mimo że 81% badanych subiektywnie oceniło swój sen pozytywnie. Około 52% kobiet zgłosiło złą jakość snu, w przypadku mężczyzn było to 57,5%. Złą jakość snu wykazywało 58% młodych mieszkańców wsi oraz 51% młodych mieszkańców miast.
Wnioski. 1. Większość młodych osób jest aktywna fizycznie i osiąga odpowiedni poziom aktywności. 2. Ponad połowa młodych osób ma złą jakość snu. Średnia liczba godzin snu młodych osób mieści się w dolnej granicy normy. 3. Istnieje potrzeba edukowania młodych osób na temat korzyści wynikających z aktywności fizycznej i dobrej jakości

snu, będących kluczowymi składowymi zdrowego stylu życia. Ważnym aspektem wydaje się zwiększenie działań promujących zdrowie wśród młodych osób oraz edukowanie rodziców w zakresie kształtowania zdrowych nawyków u dzieci i nastolatków. 4. Należy pamiętać, że aktywność fizyczna i jakość snu są głównymi czynnikami wspierającymi proces rozwoju i uczenia się młodych osób.

***Słowa kluczowe*:** aktywność fizyczna, jakość snu, młodzież, IPAQ, PSQI, zdrowe nawyki, wychowanie, rodzina generacyjna.

Introduction

Over recent years, health has become an important topic of public discussion. There are different views on how it should be taken into consideration. Definitions of health have evolved over the years. According to the World Health Organisation (WHO), health is not only the absence of disease but also physical, mental and social well-being (Piotrowicz, Urban, 2020). Research conducted in 2019 by the Centre for Public Opinion Research (CBOS [*Centrum Badania Opinii Społecznej*]) revealed that 55% of Poles considered maintaining good health to be the second most important value in daily life, just after family happiness, which was indicated by 80% of respondents (CBOS, 2019).

To maintain health, it is important to get enough exercise. Regular physical activity is extremely beneficial to health and well-being, both physically and mentally. Performing regular physical activity contributes to the prevention of various non-communicable diseases such as cardiovascular diseases, cancer, and diabetes. Furthermore, physical activity has a positive impact on reducing symptoms of depression, anxiety, and improves our capacity to think and learn. At the same time, it is extremely important for the healthy growth and development of young people. Unfortunately, many people around the world do not lead active lifestyles, leading to an increased risk of death and negatively impacting health (*Physical activity*, 2022; *Wytyczne WHO dotyczące*.... [WHO guidelines…], 2021).

To stay healthy, it is also important to get adequate sleep. Sleep is a complex physiological process, mainly regulated by the nervous system. It is an essential part of human life, usually occupying between 20% and 40% of the day (Grandner, 2022). During sleep, restorative and regenerative processes occur in the body. Sleep also has an important role in memory processes and learning. While it is there, the brain processes and consolidates information, which affects the ability to remember and process information throughout the day. Good quality sleep is also essential for our mental health. Lack of adequate sleep can lead to emotional problems such as vulnerability to stress, anxiety, or depression. Moreover, during sleep, our body pro-

duces the chemicals and cells needed to fight infection and disease. Its absence can weaken our immunity and make us more susceptible to infections. Sleep also affects the regulation of metabolism, including hormonal balance. Insufficient sleep can lead to metabolic disorders such as overweight and obesity (Gajda, Wanot, & Biskupek-Wanot, 2022; Kasperczyk et al., 2007; Green, Bernet, & Cheung, 2021; Assefa et al., 2015; Kokandi, Alkhalaf, & Mohammedsaleh, 2019). Therefore, young people should ensure that they have a regular sleep rhythm, and the right amount and quality of sleep each night – this is crucial for overall health, well-being, and full functionality during the day. Additionally, young people should undertake physical activity every day, as it is a crucial element in preventive health.

Physical activity and sleep quality also have a measurable impact on the character formation of adolescents and young adults. Looking at the educational context, it can be seen that they also influence the constancy of the will, which manifests itself in the observance of rules, the formation of willpower understood as the performance of increasingly difficult and involved exercises, and the independence of the will, understood as the ability to overcome obstacles in practice (Mazur, 2014). With sufficient quality and quantity of sleep, young people have an open mind to the educational process and the strength to explore and perform a variety of activities. Contemporary changes in civilisation place new demands on education. The changes taking place are the result of enormous technological advances and the significant globalisation of the entire world and the impact of these changes is most evident among young people. They are the ones who are exposed to multimedia daily. Native, traditional forms of upbringing are sometimes confronted with models and lifestyles from TikTok and other social networks or computer games. A sense of "being in touch" replaces real contact with peers. Civilisation progress is displacing outdoor movement and falling asleep at a suitable hour in favour of spending long hours on a smartphone (Sieńko-Awierianów, Wesołowska, 2011). One of the most important issues facing contemporary education is therefore the promotion and use of effective forms of supporting young people, including students and pupils, in healthy lifestyles. One of the main forms of interventions supporting young people in the educational process should be taking care of an appropriate amount of physical activity and adequate sleep, which are guaranteed to have a positive impact on the process of adolescents' development and learning. It should be remembered that exercising allows for the creation of an educational and social function, shaping in young people the culture of being, the ability to cooperate, compete, be dutiful, and respect the truth (Osiński, 1993).

During early and late adolescence, the most important developmental environments are the family of origin, peers, and popular culture. Particular attention needs to be paid to the former, as the formation of habits takes time, so basic health-related

behaviours, including sleep hygiene, are formed in the process of upbringing in the generational family. The generational family is understood [in this context] as the family of origin (parents or carers involved in the upbringing process). Its influence at the late adolescence stage is still strong and is important for the introduction and formation of habits in the family of origin.

Aim of the study

This study aimed to assess levels of physical activity and sleep quality among young people and to demonstrate the importance of shaping the habits of both in a family of origin.

Materials and methods

The survey involved 206 young people. It was conducted using the CAWI method. Participation in the survey was voluntary and answers were given anonymously. Standardised questionnaires were used for the survey: International Physical Activity Questionnaire (IPAQ) – short version, Pittsburgh Sleep Quality Questionnaire (PSQI) and a self-administered questionnaire.

Results

Of the participants, 80.6% were female and 19.4% were male. Their average age was 21 years. Urban residents accounted for 72.3% of the respondents.

Physical activity

Level of physical activity

The majority of respondents (87%) are physically active and achieve a sufficient (53%) or high (34%) level of activity.

Physical activity levels and gender

High levels of activity are achieved by 32% of women and 42.5% of men. As many as 14% of women and 10% of men have insufficient levels of physical activity. There are no significant statistical relationships between gender and physical activity levels.

Physical activity levels and place of residence

Rural residents were 86% physically active, with 33% of young people living in rural areas achieving high levels of physical activity. Among urban residents it was similar; 34% of respondents achieved high levels of activity. Fourteen percent of respondents living in rural areas were insufficiently physically active, while in urban areas it was 13%. There were no significant statistical relationships between place of residence and physical activity levels.

Quality of sleep

According to the research, 47.1% of young people have good sleep quality, while 52.9% have poor sleep quality. Among those surveyed, 62% say they allocate seven or more hours to sleep, while 24% of young people allocate six or seven hours. Among those surveyed, 10% sleep between five and six hours, while 4% of young people spend less than five hours on sleep.

Significantly, as many as 88% of young people reported difficulty sleeping, and difficulty falling asleep within 30 minutes of going to bed was reported by 74% of young people. Feeling a lack of energy to do daily chores due to sleep deprivation was noted by 83% of respondents. Respondents assessed their sleep positively – 16% as very good and 65% as fairly good. The majority of young people (85%) did not take sleep medication before bedtime, but 6% reached for medication less than once a week and 4% of young people supported their sleep with pharmaceutical products once or twice a week.

Gender and sleep quality

The study found no significant statistical relationship between gender and sleep quality. Among the female respondents, 48% had good sleep quality, while the remaining 52% had poor sleep type. Good sleep quality was observed in 42.5% of men, while poor sleep quality was observed in 57.5%.

Place of residence and quality of sleep

Good sleep quality was declared by 42% of respondents living in villages, while bad quality was declared by 58%. Among young urban residents, 49% had good sleep quality, while 51% had a bad one. No significant statistical differences were observed about sleep quality according to place of residence.

Discussion

The survey reveals that young people are physically active. The vast majority, as much as 87% of those surveyed, reach the recommended activity standards. The CBOS survey also indicates that young people, between the ages of 18 and 24, are very active. Up to 85% of them declare practising sport (CBOS, 2018). This is confirmed by research among young people in Wrocław, where 74.2% achieved a good level of physical activity. It is worth mentioning that men received higher values for physical activity levels than women (Grabowska, Seń, & Jakubowska, 2019).

The survey did not show significant differences in physical activity levels by gender. Among women, 86% are active, of which 32% achieve a high level of activity and 54% are sufficiently active. Among men, 42.5% achieve a high level of activity, while 47.5% are sufficiently active, implying that 90% of men are physically active. Similar results can be seen in the study by Cosic Mulahasanović and colleagues, where 87% of women were physically active. However, 53.7% achieved a high level of participation and 33.3% sufficient. Among men, 91% were active, 58.9% at a high level and 32.1% achieved sufficient levels of physical activity (Mulahasanović et al., 2018). Each of the aforementioned studies demonstrated a slight prevalence of activity among men. Conversely, in a study by Rich Rai and colleagues, young women living in India were found to be more active than men (Rai, Asif, & Malhotra, 2018).

The results of our research reveal that the place of residence has no significant impact on the level of physical activity of young people. Residents of both rural and urban areas are very physically active. Those living in rural areas achieved the recommended levels of physical activity in 86% of cases. The same was true among young urban residents; as many as 87% declared physical activity at the recommended level or above. This is also apparent from a study by Barbara Grabowska, who, comparing the physical activity of young people living in cities and villages, found no statistically significant differences in the level of physical activity performed by young people by place of residence (Grabowska, 2020). On the other hand, research published by CBOS suggests that persons living in cities more often declare practising sports than rural residents. It is also visible that the increase in declared activity is proportional to the increase in the place of residence. Among rural residents, 53% of people declare practising sport, while in the largest cities, the figure is already 76% (CBOS, 2018).

Our findings also showed that as many as 52.9% of the students surveyed experienced poor sleep quality; despite this, they rated their sleep 81% positively, 16% as very good and 65% as fairly good. A study conducted in Brazil yielded similar

results, with up to 65.5% of young people experiencing poor sleep quality (Ramos et al., 2021). In a study by Barbara Błońska and Joanna Gotlib, meanwhile, 48% of young people declared problems with falling asleep and, very worryingly, 61% believed that sleep did not give them rest (Błońska, Gotlib, 2012). Young people participating in Lirong Zhang's study had 45.07% poor sleep quality. It was also analysed that weak sleep quality could be related to age, smoking, alcohol consumption, daytime rest, chronic diseases, anxiety, and stress (Zhang et al., 2022). Andreas Hinz and colleagues, in a study of people living in Germany, showed that 36% of the general population of that country experienced sleep difficulties. It was noted that women reported more sleep difficulties than men. Nevertheless, there was no relationship between age and sleep quality. In contrast, the level of sleep quality was associated with socio-economic status and work situation. The worst sleep quality was observed among those who were not economically active. It was also shown that obese individuals manifested poorer sleep quality than normal-weight individuals (Hinz et al., 2017). Stephen Becker's study also found that women had higher total PSQI scores than men. This represents poorer sleep quality. As many as 64% of women reached the established limit of poor sleep, while 57% of men did (Becker et al., 2018). In our study, no significant gender differences in sleep quality have been observed.

Shaping physical activity and sleep quality habits – the importance of the family in origin

Research indicates that today's young people are playing more and more sports, and as a result, physical activity is no longer a differentiating factor between young people in terms of sleep quality. Certainly, it is still important to educate young people about the benefits of physical activity, but it is also important to look at other factors that cause half of them to be dissatisfied with their sleep quality.

Knowledge of sleep hygiene, limiting stimuli (including the use of electronic devices in the evening), and coping with worries can significantly affect the quality of young people's sleep. In an attempt to meet expectations and goals specific to this stage of development, young people sometimes limit their sleep time, which, according to adult standards, should be between seven and nine hours. At the same time, it should be emphasised that both sleeping too little (six hours and less in the case of adolescents and adults) and sleeping too much (10 hours and more) adversely affect the quality of sleep. To enable them to perform their duties, young people should not limit the number of hours of sleep, but ensure its quality so that they can be more effective.

The study found that place of residence does not differentiate between young people in terms of sleep quality. Theoretically, living in a city (which may be associated with an increased pace of life and more stimuli) may contribute to poorer sleep quality. However, it should be borne in mind that the place of residence today does not limit access to the stimuli associated with the use of electronic devices. Furthermore, the research was conducted among students who, although they identify with the place of residence of their family in origin, mostly live in the place of study (cities).

Young people who have not developed habits favourable to sleep quality may adopt patterns (including unfavourable ones) prevalent in their peer group. It is therefore important that basic sleep hygiene habits are formed in the family of origin. Parents sometimes reduce their influence in this area by controlling the time of going to bed and limiting the use of electronic devices (the latter less often). They need to be aware that limiting unfavourable behaviour alone will not significantly influence the formation of healthy habits. In addition to restriction, there should be the teaching of new behaviours that, while meeting young people's needs, will at the same time have a positive impact on sleep quality. Such behaviours will include doing moderate physical activity, knowing how to relax, and using other ways to spend the evening than using electronic devices (e.g., reading). Also importantly, the parents' narrative will be more effective if it shows the benefits of healthy sleep, rather than solely the costs that a young person may incur if the quality of sleep is not satisfactory. Such benefits include, for example: improved concentration, improved physical appearance, increased productivity, reduced anxiety, and improved mood.

Physical activity support, meanwhile, cannot be limited to PE classes at school. Work in PE lessons, as in other school activities, can be extrinsically motivated – the desire to receive a positive grade, to fulfil an obligation. This attitude is not permanent and the motivation may disappear with the cessation of the duty. Therefore, it is important to support parents in the formation of intrinsic motivation in children and adolescents to engage in physical activity. Among other things, parents can help to explore and discover their children's interests or predispositions in sports and to foster the need for physical activity as a fun and interesting way to spend leisure time, not only as a health need.

Conclusion

1. Young people are physically active and achieve adequate activity levels.
2. More than half of young people report poor sleep quality.
3. There is a need to educate young people about the benefits of physical activity and good sleep quality as crucial components of a healthy lifestyle. An important aspect is to increase health promotion activities among young people and to educate parents about developing healthy habits in children and adolescents.
4. It is important to consider that physical activity and sleep quality are major interactions that support the development and learning process of young people.

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