

## **Abstract**

### **Introduction:**

The access to the Internet and smartphone is something natural for the generation of adolescents, who are continually online. According to numerous research, secondary school students are owners of smartphones constantly connected to the Internet. Nowadays this small portable computer substitutes many devices for them. The young users appreciate all the aspects of exploiting a smartphone and treat it as an indispensable element of their everyday life. This is a generation change which has been observed for the last few years.

A contemporary teenager is using digital media intensively and treats the access to the Internet as something obvious. Comfort, accessibility, immediacy, multiple possibilities to provide entertainment and the way to fill the day are of great value for them. However, the need to use the blessings of the digital revolution wisely is an equally great challenge. Improper use of a smartphone may carry serious threats. The reports coming from numerous conducted research most frequently indicate the following: an observed decrease of interest in movement and physical activity among teenagers, as well as an increase of obese and overweight population. This study allows to determine whether the fascination with a smartphone and online meetings are the reason for the drop of interest in physical activity, obesity and excess weight.

The aim of the thesis:

The aim of the thesis was to get to know and expand the knowledge concerning the phenomenon of smartphonisation as well as to determine the level of physical activity, obesity and excess weight among the youth of secondary schools from the Podkarpackie Voivodeship.

Material and methods:

The study included a group of 460 secondary school students from the Podkarpackie Voivodeship, including 48,9% of women (N225) and 51,1% of men (N=235). A diagnostic survey method was applied in the research, using the author's questionnaire as a research tool and the Questionnaire for the Examination of Mobile Phone Addiction by E. Potembska and B. Pawłowska, and the International Physical Activity Questionnaire IPAQ in its short version.

All the participants of the study had their body mass, height and waist size measured.

Additionally, 100 participants of the study agreed for the assessment of their physical activity measured with the use of the Actigraph wGT3-BT Monitor accelerometer.

### **Results:**

The youth of secondary schools from the Podkarpackie Voivodeship meet the criteria of mobile phone addiction resulting from the KBUTK test by B. Pawłowska and E. Potembska. The analysis of the KBUTK data allowed to determine that 32,2% of students were at risk of mobile phone addiction. More than 6% of the respondents achieved high scores corresponding to the addiction to the mobile phone. The lack of addiction was presented in the group of 61,7% of the surveyed.

The study showed that the lack of the addiction to the mobile phone more frequently concerned the participants with high level of physical activity. Selected sociodemographic factors determine the presence of mobile phone addiction.

The analysis of the collected study material allowed to state that the general mobile phone addiction rate was indeed statistically higher ( $p,0,0001$ ) among women than among men.

Mobile phone addiction more frequently occurred among technical / vocational school students and those living in blocks of flats.

Own research allowed to state that obesity and excess weight among the adolescents did not significantly affect the level of the addiction to the phone. However, the students with increased body mass index BMI and higher values of centile BMI are those more frequently addicted to

mobile phones. In the group 15% studied students were found to be obese, and less than 3% overweight. Obesity/excess weight did not directly influence the mobile phone addiction. The conducted research confirms that selected sociodemographic factors differentiate the level of physical activity declared by the respondents, measured with the use of the Actigraph wGT3-BT Monitor accelerometer and the International Physical Activity Questionnaire IPAQ. The results of the research (according to IPAQ and ActiGraph accelerometer) showed that the respondents with high level of physical activity include more often men, technical/vocational school students, city inhabitants and those living in single-family houses. The analysis of the results of the International Physical Activity Questionnaire IPAQ allowed to determine that the level of physical activity was significantly dependant on gender. It has been shown that indeed men obtained statistically higher rates of physical activity than women. This concerned intensive physical exertion ( $p,0,0001$ ). 157

Women more frequently possessed insufficient (28,9%) or sufficient (26,2%) level of physical activity. High level of physical activity concerned more often the city inhabitants (59,0%), while the sufficient level more often applied to those living in the country (23,7%). Insufficient level of physical activity ( $\leq 600 \text{ MET} \cdot \text{min} \cdot \text{week}$ ) was confirmed in case of every fourth student. High level of physical activity ( $\geq 1500 \text{ MET} \cdot \text{min} \cdot \text{week}$ ) was represented by a group of 54,3% of the respondents.

The analysis of the Actigraph wGT3-BT Monitor accelerometer data showed that the average number of steps taken during a day reaches almost 9, 000. The average number of calories burnt during activity was a bit more than 2,500, which translates to almost 400 calories a day. The time which the participants spent on sedentary activities constituted 84% of all the activities. Only 11% of the time connected with physical activity was accounted for light exercise, and 2% for moderate and intensive exercise. The analysis of the research demonstrated that the WHO standard of the average time in activity was met by 50,0% of the surveyed students, who carried the accelerometer – the teenagers obtained a result equal to 60 minutes or more per day. The surveyed with insufficient level of physical activity are more often those with higher BMI centile and those with higher BMI.

### **Conclusions:**

Preventing the mobile phone or smartphone addiction should be implemented from an early age, therefore, it is parents who, above all, should monitor and limit the time spent with a phone by their children. Unfortunately, preschool children are given a phone by their parents in order to watch cartoons or play games.

There is a need to initiate a social campaign directed at parents, which will be devoted to the subject of the consequences of the telephone or smartphone abuse among children.

Social campaigns promoting physical activity, such as e.g. 'The force of reaction' and 'Stop PE excuses', should be continued.

As results from the study, preventing the mobile phone addiction should be mainly directed at women, technical/vocational school students and the residents of the blocks of flats. The respondents addicted to mobile phone also obtained higher BMI values, thus indication to limit the use of smartphones in order to avoid civilization diseases caused by high BMI values.

The level of physical activity among the adolescents attending secondary schools in the Podkarpackie Voivodeship was satisfactory. It must be noted that with the increase of the physical activity there was a lower risk of mobile phone addiction.

Therefore, it is important to place greater emphasis on physical activity among adolescents. The prevention of obesity and mobile phone abuse should be implemented from an early age.

Educational activities should be started in primary school. The role of parents in implementing and developing rules of a healthy lifestyle is vital. It is parents who are the authority for small

children, which challenges them to be a good example for their offspring to follow. Interest in physical activity may take various forms, starting from personal morning exercise and finishing on various sport disciplines. A child who observes its active parents will certainly join the activities. Due to the physical activity and time spent together with parents, children feel safe, release their stress and, above all, prevent diseases which result from obesity and excess weight. It should also be remembered that a health-promoting lifestyle should be shaped by school, teachers, peer groups as well as the media. Great hopes may be currently placed in healthpromoting applications and Smartwatch. These tools may be used as motivation to take up physical activity. In a smartwatch we will find some interesting information about the distance covered, burnt calories, the number of steps taken or reports from the progress of the workout. Such data may be used to compare ourselves with peers, which may create motivation for physical activity.

Particularly noteworthy is the fact that these studies were conducted just before the COVID-19 pandemic. It can be assumed that during the pandemic these results could change. It may also be predicted that the results of the study would be less optimistic now due to the closure of sports and leisure facilities during the pandemic.