Assessing the level of well-being in individuals practicing sport

Czynnośc poziomu samopoczucia osób uprawiających sport

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Key words
students’ physical activity, regular training, mental health, prevention

Summary
Background and aim: There is an increasing body of evidence that physical exercise may have a positive effect on people’s mental condition and well-being. Numerous study results indicate that physical activity helps in the treatment of depression and anxiety. This allows for a conclusion that sport – to a great extent – influences not only people’s physical aspects, but also their psyche. Sedentary lifestyle, time pressure and stress that accompanies people at an increasingly younger age contribute both to higher incidence of numerous civilisation diseases and to problems with mental health. The purpose of the study was to verify whether individuals practicing sports manifest better well-being than non-training individuals.

Methods: A general interview was conducted with 80 students (40 individuals practicing sports and 40 individuals not practicing sports at all), whereupon they were requested to complete the Warwick-Edinburgh Mental Well-being Scale questionnaire.

Results: The individuals practicing sport exhibit greater well-being than the control group. It was also demonstrated that the males in the study group exhibit greater well-being than the females from the same group. However, no findings were made that longer duration of a single training session, its frequency or the time when a given person started practicing sports had any influence on his/her well-being.

Conclusions: Practicing sports has a positive influence on people’s well-being. Physical activity should be promoted from as early an age as possible to minimise the risk of numerous diseases in the future, including those affecting mental health.

Słowa kluczowe
aktywność fizyczna studentów, regularny trening, zdrowie psychiczne, profilaktyka

Streszczenie
Background and aim: Istnieje coraz więcej dowodów na to, że ćwiczenia fizyczne mogą w pozytywny sposób wpływać na stan psychiczny i samopoczucie ludzi. Wiele wyników badań wskazuje na to, że aktywność fizyczna jest pomocna w przypadku leczenia depresji czy niepokoju. Pozwala to stwierdzić, że sport w dużym stopniu wpływa nie tylko na aspekt fizyczny człowieka ale również na jego psychikę. Siedzący tryb życia, presja czasu oraz stres towarzyszący ludziom w coraz młodszym wieku przyczynia się do wzrostu występowania wielu chorób cywilizacyjnych ale także problemów ze zdrowiem psychicznym. Badanie miało na celu sprawdzenie, czy osoby uprawiające sport będa cechowały się lepszym samopoczuciem od osób nietrenujących. Analizie poddano także czas trwania treningu, jego częstotliwość oraz czas, od kiedy dana osoba rozpoczęła uprawianie sportu.

Methods: Wywiad ogólny został przeprowadzony z 80 studentami (40 osób uprawiających sport i 40 nietrenujących) następnie zostali oni poproszeni o wypełnienie kwestionariusza Warwick-Edinburgh Mental Well-being Scale.

Results: Osoby uprawiające sport cechują się lepszym samopoczuciem niż osoby z grupy kontrolnej. Wykazano także, że mężczyźni w grupie badanej charakteryzują się lepszym samopoczuciem niż kobiety z tej samej grupy. Wyniki te są istotne statystycznie. Nie stwierdzono natomiast, aby dłuższy czas pojedynczego treningu, jego częstotliwość oraz czas rozpoczęcia uprawiania sportu miał wpływ na samopoczucie.

The individual division of this paper was as follows: A – research work project; B – data collection; C – statistical analysis; D – data interpretation; E – manuscript compilation; F – publication search

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INTRODUCTION

The issues of sport and physical activity are commonly undertaken by scientists due to their beneficial effects on the human body. This leads to numerous study results demonstrating a series of evidence that physical exercise may have a positive effect, amongst others, on people’s mental condition and well-being. A large number of projects were predominantly focused on the immediate effects of exercise on the body and its beneficial influence on heart diseases, the circulatory system, diabetes, osteoporosis, certain cancers, and regulation of the body mass. According to Merriam-Webster, a state of mental and emotional well-being is a constituent of mental health, which is as important as physical health. If homeostasis is maintained, human beings are capable of using their cognitive abilities and emotions, function in the society and cope with the challenges of their daily lives. The results of studies concerning the mental sphere indicate that physical activity supports the treatment of depression and anxiety. Training individuals are also reported to show a lower percentage of suicides. This allows for a conclusion that sport – to a great extent – may influence not only people’s physical aspects, but also their psyche. Sedentary lifestyle, time pressure and stress that accompanies people at an increasingly younger age contribute both to higher incidence of numerous civilisation diseases and to problems with mental health. There is a body of scientific literature that contains findings concerning programmes targeted at young people and highlighting the importance of a healthy lifestyle, as well as analysing how frequently they practice sports. The issue of physical activity is, therefore, an essential and integral element of proper functioning of human beings, and it is advisable to analyse it in a broader context.

OBJECTIVE OF THE WORK

The aim of the study was to analyze the subjective assessment of the well-being of people regularly practicing various sports disciplines compared to inactive sports people, including answering the following questions:
1. How does exercising regularly affect a person’s well-being?
2. Is there a relationship between the time of a single training, its frequency and total training experience, and the subjectively perceived well-being of the trainees?

Based on the above, the following hypotheses were adopted:
1. Regular sporting activities have a positive effect on the well-being of trainers.
2. The time of a single sport training, its frequency and total training period, is not related to well-being.

MATERIAL AND METHODS

The study was conducted on a group of 80 students from the Jagiellonian University Medical College (Collegium Medicum) in Kraków. They included regularly training individuals (40) and non-training individuals (40). The groups were homogeneous and did not differ significantly in terms of demographic data (Table 1). In the study group there were 19 women, constituting 47.5% and 21 men, which gives 52.5%, while in the control group there were 22 women, which is 55%, and 18 men, which is 45%. The age of women in the study group ranged from 21 to 30 years with its average of 23.4 years, and men from 19 years of age to 29, which gives an average of 22.7 years, while women in the control group had an age between 21 and 26 years, with an average of 23.5 years, and men from 21 to 28 years, which gives an average of 24 years.

Included in the study, they practiced the following sports: volleyball, football, athletics and shot put (Figure 1).

The duration of these disciplines in women ranged from 1.5 to 19 years with an average of 6 years, and in men from 1 to 18 years giving an average of 6.6 years. The duration of one-time sports training for both men and women ranged from 60 to 120 minutes, with an average of 98 and 101 minutes, respectively. The frequency of training loads in women was on average 3.6 / week and in men 3.4 / week (Table 2).

After the general interview, the students were assigned to the study group (training individuals) and the control group (non-training indi-
individuals). Next, they were requested to complete the Warwick-Edinburgh Mental Well-being Scale questionnaire. It is a tool consisting of 14 questions formulated in a positive manner, covering the aspect of eudaimonia and hedonism in the context of well-being. The results are summed up in order to generate the total result ranging from at least 14 to no more than 70, with higher results representing higher levels of mental well-being.

The statistical analysis was conducted in the STATISTICA 12 software, and the Shapiro–Wilk and t-Student tests were used. The Shapiro–Wilk test is a test of normality in frequentist statistics. The t-Student test is used to determine the significance of the difference between the means of two sets of data. In essence, the test compares the difference in means relative to the observed random variations in each set.

**RESULTS**

The level of well-being in the study and control groups was compared, taking into account the whole group (Figure 2).

The individuals practicing sport exhibit greater well-being than the subjects from the control group ($p<0.00$). The level of well-being was analyzed in the study and control groups, taking into account gender (Table 3). The average well-being in the group of training women was 49.68 points, while in the group of men 54.47 points. It was shown that men in the study group have better mood than women from the same group (Figure 3). In this case, the result is also statistically significant ($p<0.00$).

However, no findings were made that longer duration of a single training session, its frequency or the time when a given person started practicing sport had any influence on his/her well-being.

| Variable                              | females n | x       | SD    | min. | max. | males n | x       | SD    | min. | max. |
|---------------------------------------|-----------|---------|-------|------|------|---------|---------|-------|------|------|
| Number of training sessions a week    | 19        | 3.79    | 1.36  | 1    | 6    | 21      | 3.43    | 1.17  | 2    | 5    |
| Training experience [years]           | 19        | 6.03    | 4.20  | 1.5  | 19   | 21      | 6.60    | 4.24  | 1    | 18   |

Abbreviations: n – number of patients; x – arithmetic mean; SD – standard deviation; min. – minimal; max. – maximum.

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**Table 2**

**Characteristics of the study group in terms of training sessions**

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**Figure 1**

![Sports](image)

**Figure 2**

Comparison of well-being in the study and control groups
DISCUSSION

The results obtained indicate that sport may have a positive effect on the subjective assessment of well-being. These data are in line with the publications by other authors and corroborate the above thesis in children, youth, adults, and older adults.

It is worth noting the cross-sectional study by McMahon et al. concerning physical and sports activities and their correlation with well-being, anxiety and depressive symptoms. A large (11,110 subjects) representative sample of teenagers in Europe completed a questionnaire concerning this issue. The frequency of physical activity was positively correlated with well-being and negatively correlated with both anxiety and depressive symptoms, until the threshold of moderate frequency of physical activity. More frequent physical activity and involvement in sport contribute to the improvement of well-being as well as reduction of anxiety and depressive symptoms in both sexes.

Significant conclusions were presented in one of the articles dealing with the issue of practicing sport by the youth. It was found that young people who do not practice sport at all or exercise for less than 3.5 hours a week are more susceptible to poor well-being. However, it was pointed out that young people who exercise for more than 17 hours a week also run the risk of a decreased state of well-being in comparison to their peers who practice sports for less than half of the time. Young people who trained up to 14 hours a week were less susceptible than individuals training up to 7 hours a week. This implies that poor choice of the duration of physical activity may also have a negative effect, especially in the case of growing up adolescents. However, the results of our observations fail to confirm that, in the case of the above-mentioned group, the duration of a single training session, its frequency or the time when a given person started practicing sport had any influence on his/her well-being.

The study by J. Rusecki confirms the point that practicing sport increases the feeling of happiness in life. In this case, it is females that self-assessed the feeling of happiness higher, which is contrary to the results above. The studies by Unger as well as by Brown and Blanton suggest that the relationship between physical activity and suicide is determined by sex. In the case of males, sport usually leads to reduction in depressive symptoms or suicidal thoughts. In females, an important role is played by the frequency of the physical activities performed. Considerable intensification of exercises may act as a warning sign, possibly due to the link between a negative image of one’s own body, low self-esteem, depression and suicides. Unger stated that training activities amongst adolescent girls for 6-7 days in a week is a predictor of suicidal behaviours. Similar results were presented by Brown and Blanton who had analysed this issue amongst female students. Those who trained intensely every day or nearly every day had higher suicide rates than their female peers who trained less frequently. Practicing sport may therefore be an easily observable result of emerging pathologies, which may subsequently be of diagnostic value. On the other hand, physical activity is a form of stress coping strategy, which was confirmed by further studies. In the case of our results, training females self-assessed their well-being lower than males, which may suggest that sport is a means of enhancing one’s external appearance.

A different perspective was presented in a review article concerning war

| Variables | Average well-being in men [points] | Average well-being in women [points] | p  |
|-----------|-----------------------------------|-------------------------------------|----|
| Study group [21M/19W] | 54.47 ±5.4 | 49.68 ±5.4 | 0.00 |
| Control Group [22M/18W] | 47.77 ±4.4 | 46.27 ±3.6 | 0.24 |

M – men, W – women; p – statistical significance.
Data presented as an arithmetic mean and standard deviation.

Figure 3
Comparison of well-being in the study group in terms of sex

Table 3
The level of well-being in the study and control group in relation to gender
veterans, whose well-being was sub-
stantially improved by launching train-
ing sessions and rehabilitation28. This
demonstrates that engagement in phys-
ical activity can help improve human
health, including the level of well-be-
ing. It would, however, be desirable to
adjust it in an appropriate way.

The study by Rice et al. focused on
review and assessment of articles
pertaining to mental health and pos-
tive well-being amongst elite (pro-
fessional) athletes, including the inci-
dence and/or nature of poor mental
health. The findings suggest that pro-
fessional athletes experience basic-
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