

PHYSICAL ACTIVITY OF PHYSIOTHERAPY STUDENTS AT THE MEDICAL UNIVERSITY OF WARSAW

AKTYWNOŚĆ FIZYCZNA STUDENTÓW KIERUNKU FIZJOTERAPIA WARSZAWSKIEGO UNIwersYTETU MEDYCZNEGO

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A. Study design/planning

zaplanningowanie badań

B. Data collection/entry

zebranie danych

C. Data analysis/statistics

dane – analiza i statystyki

D. Data interpretation

interpretacja danych

E. Preparation of manuscript

przygotowanie artykułu

F. Literature analysis/search

wyszukiwanie i analiza literatury

G. Funds collection

zebranie funduszy

Summary

Background. Regular physical activity allows maintenance of physical fitness at an optimal level and also contributes to greater care for other elements of a healthy lifestyle. The promotion of physical activity should be one of the tasks of health professionals, including physiotherapists. The aim of this study was to assess physical activity levels of physiotherapy students.

Material and methods. This study involved 853 students (634 women and 219 men) of the Faculty of Physiotherapy of the Medical University of Warsaw (444 first-year students and 409 second-year students). The research tools were the International Physical Activity Questionnaire – short version (IPAQ-SF) and the author's own survey to obtain information on the type of physical activity and reasons for taking it up or not.

Results. Men had significantly higher levels of physical activity than women ($p < 0.001$). The physical activity levels of second-year female students were higher than those of first-year female students ($p = 0.026$). Among men, there was no significant difference between first and second-year students.

Conclusions. More than half of those surveyed do not engage in any physical activity outside of curriculum activities. The results obtained in this study may form the basis for continuing research with the participation of various groups of subjects and using more advanced technologies and research tools.

Keywords: physical activity, students, lifestyle, physiotherapy

Streszczenie

Wprowadzenie. Regularna aktywność fizyczna pozwala na utrzymanie wydolności fizycznej na optymalnym poziomie, a ponadto przyczynia się do większej dbałości o inne elementy zdrowego stylu życia. Propagowanie aktywności fizycznej powinno być jednym z zadań pracowników służby zdrowia, w tym fizjoterapeutów. Celem badania była ocena poziomu aktywności fizycznej studentów fizjoterapii.

Materiał i metody. W badaniu wzięło udział 853 studentów (634 kobiet i 219 mężczyzn) kierunku fizjoterapia Warszawskiego Uniwersytetu Medycznego (444 studentów pierwszego roku oraz 409 studentów drugiego roku). Narzędziami badawczymi były Międzynarodowy Kwestionariusz Aktywności Fizycznej – wersja krótka (IPAQ-SF) oraz autorska ankieta służąca uzyskaniu informacji dotyczącej rodzaju aktywności fizycznej oraz motywów jej podejmowania lub niepodejmowania.

Wyniki. Mężczyźni charakteryzowali się istotnie wyższym poziomem aktywności fizycznej niż kobiety ($p < 0,001$). Poziom aktywności fizycznej studentek drugiego roku był wyższy niż u studentek pierwszego roku ($p = 0,026$). Wśród mężczyzn nie stwierdzono istotnych różnic między studentami pierwszego i drugiego roku.

Wnioski. Ponad połowa badanych nie podejmuje żadnej aktywności fizycznej poza zajęciami programowymi. Uzyskane w niniejszej pracy wyniki mogą stanowić podstawę kontynuowania badań z udziałem różnych grup badanych oraz z wykorzystaniem bardziej zaawansowanych technologii i narzędzi badawczych.

Słowa kluczowe: aktywność fizyczna, studenci, styl życia, fizjoterapia

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Introduction

Lifestyle is one of the main factors determining the maintenance of health and psychophysical fitness [1]. Regular physical activity leads to morphological and functional changes in, among other things, the locomotive apparatus. An active lifestyle reduces the intensity of factors conducive to the development of civilization diseases, e.g. cardiovascular diseases or spinal pain syndromes [2-4]. Physical activity affects the human body. However, only systematically repeated motor tasks can affect health. This involves not only the improvement of physical fitness, but also the initiation of adaptive reactions [5,6].

It is assumed that physical activity has the greatest impact on the locomotive apparatus. Physical activity is a key factor in the maintenance of muscle fitness. Exercises with an appropriate level of resistance lead to an increase in muscle strength and mass. Owing to physical activity, muscles retain optimal length and flexibility and respond better to stimuli from the nervous system. An appropriate muscle work facilitates the arterial blood supply, which supplies muscles with oxygen and nutrients, and the outflow of venous blood, which removes metabolic products. The role of the muscle system in the maintenance of joint stability or the protection of the passive locomotive apparatus from overload and damage is also worth emphasizing [7].

Physical activity also affects cardiovascular function, both within the heart muscle and peripheral vessels. Movement reduces heart rate and resting blood pressure, as well as increases cardiac output, resulting in an improved heart muscle function and oxygen demand. Physical activity is therefore considered a key element in the prevention of cardiovascular disease [4].

A number of studies confirm that physical activity has a positive effect on other elements of a healthy lifestyle. This may have to do with both the environmental impact and the educational role of physiotherapists and instructors. The pedagogical aspect of the improvement process should be particularly highlighted. The awareness of the importance of lifestyle for the prevention of civilization diseases may result in or be the reasons for taking up physical activity [8-10]. Therefore, the promotion of physical activity should be one of the tasks of health professionals, including physiotherapists. The purpose of this study was to assess the level of physical activity of physiotherapy students. In addition, an attempt was made to determine the reasons for taking up physical activity or for refusing to do so, as well as preferences in terms of the discipline.

Material and methods

The study involved 853 students (634 women and 219 men) of the Faculty of Physiotherapy of the Medical University of Warsaw (444 first-year students and 409 second-year students) (Table 1). The survey was conducted between 2007 and 2015. Questionnaires (in paper form) were completed in the presence of the test taker. Participation in the study was voluntary and anonymous.

Table 1. Characteristics of examined people

Year	Gender	Number of people	Age [years]	Body mass [kg]	Body height [cm]	BMI [kg/m ²]
I	women	328	19.43±0.9	60.51±8.7	168.19±6.2	21.40±2.8
II		306	20.56±1.1	61.03±10.2	168.50±6.5	21.42±3.1
I	men	116	19.47±1.4	78.82±10.1	181.12±5.9	24.00±2.6
II		103	20.69±1.6	79.72±10.8	181.80±6.4	24.10±2.8

The study used the International Physical Activity Questionnaire-short version (IPAQ-SF) and the author's own survey. IPAQ-SF is a questionnaire that includes questions about physical activity performed in the last seven days. The questionnaire asked the respondents to indicate the time and frequency of intensive and moderate physical effort and the time spent in a sitting position. The level of physical activity is expressed in MET min/week. The IPAQ-SF questionnaire also allows the participants to be classified into one of three categories of physical activity (high, moderate, low) [11]. The author's own survey included questions about the forms of physical activity undertaken, the reasons for taking it up or for refusing to do so (where the participants could indicate more than one answer), and biometric data.

The statistical tool used was arithmetic mean with standard deviation. Significant differences between the scores of each group were assessed using the Mann-Whitney U test. The level of significance was defined at $\alpha=0.05$. Analyses were carried out using MS Excel and Statistica 10, under the license of the Medical University of Warsaw.

Results

The physical activity levels of second-year female students were higher than those of first-year female students ($p=0.026$). The largest differences were noted in relation to walking. Among men, there were no significant differences between first and second-year students (Table 2). Males showed significantly higher physical activity than females ($p<0.001$). The largest differences were found in the high intensity physical activity category.

Table 2. Level of physical activity

Year	Gender	Vigorous physical activity [MET min/week]	Moderate physical activity [MET min/week]	Walking [MET min/week]	Sum [MET min/week]
I (n=328)	women	1221.2±1138.6	702.2±671.3	1634.4±1593.2*	3053.8±2570.5*
II (n=306)		1286.8±1005.7	820.4±735.3	2004.6±1957.1*	3537.2±2853.6*
I (n=116)	men	1974.8±1371.8	837.9±781.1	1683.6±1619.7	3721.9±2518.7
II (n=103)		2004.9±1624.4	789.1±752.6	1675.9±1200.1	3989.4±2444.3

Notes: * $\alpha=0.05$ – differences between groups I and II

High levels of physical activity were reported by 36% of first-year female students and 47% of second-year female students. Most of the women were classified in the moderate physical activity category. Men had the highest levels of physical activity: 52% of first-year students and 59% of second-year students rated their physical activity as high (Table 3).

Table 3. Categories of physical activity

Year	Gender	High level of physical activity	Moderate level of physical activity	Low level of physical activity
I (n=328)	women	118 (36%)	190 (58%)	21 (6%)
II (n=306)		143 (47%)	146 (48%)	17 (6%)
I (n=116)	men	60 (52%)	46 (40%)	10 (9%)
II (n=103)		61 (59%)	32 (31%)	9 (9%)

One in three students reported engaging in physical activity regularly at least twice a week. Slightly more participants were active among first year students (33% first-year, 30% second-year). The most common form of activity for women was running and fitness classes. Men preferred strength training and team games (Table 4).

Table 4. Types of physical activity

Year	Gender	Strength training	Running	Team sports	Fitness	Dance	Combat sports	Swimming
I (n=103)	women	11 (11%)	22 (21%)	10 (10%)	22 (21%)	10 (10%)	4 (4%)	12 (12%)
II (n=86)		12 (13%)	18 (20%)	5 (6%)	14 (16%)	14 (16%)	3 (3%)	4 (5%)
I (n=43)	men	16 (37%)	3 (7%)	11 (26%)	-	1 (2%)	8 (19%)	3 (7%)
II (n=39)		12 (31%)	7 (18%)	11 (28%)	-	1 (2%)	7 (18%)	2 (5%)

Among the most frequently mentioned reasons for taking up physical activity were the maintenance of physical fitness, hobbies, energy discharge and release of psychophysical tension. Women were also more likely to report the desire for body mass reduction while men were more likely to aim for the development of the muscle tissue (Table 5). Lack of time and laziness were indicated as the main obstacles to physical activity (Table 6).

Table 5. Reasons for taking up physical activity

Year	Gender	Physical fitness	Hobby	Mental well-being	Body mass reduction	Desire to leave home	Body building
I (n=328)	women	277 (84%)	194 (59%)	191 (58%)	174 (53%)	121 (37%)	65 (20%)
II (n=306)		243 (79%)	150 (49%)	184 (60%)	188 (61%)	136 (44%)	73 (24%)
I (n=116)	men	85 (73%)	84 (72%)	56 (48%)	35 (30%)	38 (33%)	76 (65%)
II (n=103)		79 (77%)	62 (60%)	57 (55%)	40 (39%)	39 (38%)	67 (65%)

Table 6. Reasons for inactivity

Year	Gender	Lack of time	Laziness	Health problems	Lack of money
I (n=328)	women	266 (81%)	158 (45%)	60 (18%)	47 (14%)
II (n=306)		249 (81%)	172 (56%)	55 (18%)	46 (15%)
I (n=116)	men	75 (65%)	64 (55%)	16 (14%)	21 (18%)
II (n=103)		76 (74%)	60 (58%)	20 (19%)	16 (15%)

Discussion

Civilization diseases pose a challenge for those involved in preventing and treating those diseases. An appropriate, healthy lifestyle – i.e., above all, regular physical activity – is of particular importance [12-14].

In the light of recent studies, most Polish students are characterized by a sufficient level of physical activity (about 2000-3000 MET min/week) [5,15-18]. The results of physiotherapy students were similar or slightly higher [18,19]. A significantly higher level of activity was reported only in students of the Faculty of Physical Education [20,21]. The students surveyed in this study declared physical activity at the level of about 3200 MET min/week – women and 3700 MET min/week – men. A significantly higher level of activity related to walking as a mean of transportation is noticeable. This may be due to the specificity of studies at the Medical University of Warsaw. Classes take place in different parts of the city and students, especially in their early years at the university, often move between different locations.

About 33% of the students surveyed (as part of this study) declared regular physical activity at least twice a week for most of the academic year. This is a lower percentage than most researchers suggest. However, comparing these data with those of other authors is difficult due to differences in methodology. Some authors determined the activity of participants using a single question [16].

The choice of discipline was similar among students of different universities and majors. The most commonly reported disciplines were running, fitness (women), strength training (men) and team games [20,22]. The reason for taking up the activity was most often a desire to improve physical fitness and to improve well-being. Lack of time and laziness are among the reasons for inactivity [20,23].

Consolidation of positive lifestyle habits can have a significant impact on health and should therefore be one of the objectives of physical activity. It has been shown that people who used to engage in physical activity in the past (whether for exercise or recreation) are more physically active at a later age and less likely to engage in risky health behaviors, such as smoking cigarettes [24]. In addition, people who engage in regular, organized physical activity often have higher levels of healthy behaviors [8,12,13].

The drawback of the research was its subjectivity. However, a publicly available and widely reported questionnaire (IPAQ) was used. The solution could be to use additionally mobile applications that measure the overall level of activity related to the locomotion – pedometers. Research into lifestyle and physical activity certainly should be continued. Information on current trends in healthy behaviors will allow for the implementation of actions which activate students. Based on the information obtained, it seems justified to consider the modification of curricula at medical universities in order to draw more attention to the issues of prevention of civilization diseases.

Conclusions

1. Men reported higher physical activity than women both in the high and moderate intensity categories. A higher proportion of men showed also high levels of physical activity.
2. More than half of the physiotherapy students surveyed do not take up any physical activity outside of curriculum activities. This is mostly because of lack of time and laziness.
3. The results obtained in this study may form the basis for continuing research with the participation of various groups of subjects and using more advanced technologies and research tools.

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