

## Personal Exercise Behavior and Attitudes Towards Physical Activity Among Physiotherapy Students

### Deklarowana aktywność fizyczna oraz postawy wobec aktywności fizycznej studentów kierunku Fizjoterapia

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#### Summary:

#### Introduction

This study was designed to obtain information about the personal exercise behavior and to evaluate the relationship between attitudes towards physical activity and personal exercise practices of future physiotherapists and to determine whether physiotherapy specialty is associated with physical activity.

#### Material and methods

The study involved 196 first year students of Division of Physiotherapy, Faculty of Military Medicine, Medical University of Lodz. Personal exercise practice and attitudes towards physical activity were assessed by questionnaire.

#### Results

Taking professional sports training was declared only by 4 % of respondents and amateur sports training by more than half of the physiotherapy students (57%). Only 3% of future physiotherapist practiced sports 5 times a week or more, 19% 3-4 times a week, 32% - rarely, but steadily. Almost half of respondents (46 %) said that they do not take physical activity regularly. 39% of future physiotherapists admitted that apart from compulsory classes at the University they practiced no additional physical activity. Statistically significant difference was found in sports participation between man and women ( $p < 0.00378$ ).

#### Conclusions

Physiotherapy students are aware about the beneficial effects of regular physical activity on health but this knowledge is not correlated with personal exercise behavior. The level of physical activity among future physiotherapists is not greater than among the rest of the society. In the education of future physiotherapists

the emphasis should be placed on increasing the level of physical activity, so necessary in this profession.

**Key words:** Physical activity, physiotherapy students, physical fitness, physiotherapist

#### Streszczenie

#### Cel

Celem pracy było uzyskanie informacji na temat podejmowania aktywności fizycznej w czasie wolnym oraz ocena relacji między postawami wobec aktywności fizycznej a praktykowaniem sportu przez przyszłych fizjoterapeutów.

#### Materiał i metody

Badaniem objęto 196 studentów I roku dwóch kolejnych roczników Kierunku Fizjoterapii Wydziału Wojskowo-Lekarskiego. Częstość i charakter podejmowanej aktywności fizycznej oraz postawy wobec aktywności fizycznej zostały zbadane na podstawie kwestionariusza.

#### Wyniki

Podejmowanie profesjonalnego treningu sportowego deklaruje 4% badanych, a ponad połowa studentów fizjoterapii (57%) deklaruje udział w sporcie amatorskim. 3% spośród respondentów uprawia sport 5 razy w tygodniu lub częściej, 19% 3-4 razy w tygodniu, 32% - rzadziej, ale systematycznie. Prawie połowa badanych (46%) przyznaje natomiast, że nie podejmuje aktywności fizycznej regularnie. Aż 39% badanych przyznaje natomiast, że poza obowiązkowymi zajęciami na Uczelni nie uprawia żadnej dodatkowej aktywności fizycznej. Istotnie statystycznie częściej uprawianie sportu deklarują mężczyźni niż kobiety ( $p < 0,00378$ ).

## Wnioski

Studenci fizjoterapii mają świadomość korzystnego wpływu regularnej aktywności fizycznej na zdrowie, ale wiedza ta nie ma odniesienia do osobistego praktykowania sportu. Poziom aktywności fizycznej wśród przyszłych fizjoterapeutów nie jest większy niż wśród pozostałej czę-

ści społeczeństwa. W edukacji przyszłych fizjoterapeutów należy położyć nacisk na zwiększenie poziomu, tak niezbędnej w tym zawodzie, aktywności fizycznej.

**Słowa kluczowe:** Aktywność fizyczna, studenci fizjoterapii, sprawność fizyczna, fizjoterapeuta.

## Introduction

The adequate level of physical activity plays an important role in maintaining health and wellbeing as well as in the prevention of many diseases, considered to be the scourge of modern civilization (cardiovascular diseases, back pain, type II diabetes, osteoporosis, obesity and overweight) [1]. According to Drygas and Jegier the beneficial effects of regular exercise include: prevention and treatment of stroke, lipid disorders and metabolic syndrome, positive functional changes in musculoskeletal system, cardiovascular and psychological reactions. These changes leads to improved quality of life, beneficial effects on physical development of children and youth and slowing the aging process, which manifests in the social sphere by the reduction of spending on health care and social assistance [1].

The American Heart Association recommends that healthy adults aged 18 to 65 should perform average intensity aerobic exercise for a minimum of 30 minutes 5 times a week or aerobic high intensity endurance exercise for a minimum of 20 minutes - 3 times per week [2].

The results of international studies, carried out in the framework of the WHO CINDI, program show that over 70 % adults living in large cities in Poland does not comply with these recommendations leading a sedentary life style, while the percentage of people with high physical activity does not exceed 10 % [3]. Comparing with other countries [3], Polish people present anti-health behaviors in terms of physical activity. There is the lowest percentage of people declaring high physical activity (approximately 6-8%) and the highest percentage of people leading a sedentary lifestyle in Poland comparing to other countries in Europe [4].

The results of the survey conducted in 2003 by Woynarowska show that 62% of young people perform physical activity very rarely (less than 4 times week), while 69% - too short (less than 4 hours week) [5]. Therefore physical activity performance by most students is not sufficient. Moderate to Intense Physical Activity Index, indicating number of days in a week in which students spent on physical activities at least 60 minutes, is less than 5 days in 65 % of youth. In 24 % of students rate is very low and ranges from 0-2.5 day [5]. The alarming fact is that the percentage of young people in Poland dedicating for exercise less than one hour per week is greater than the average for the 129 countries participating in the study [6]. Only less than half of young people (46% of boys and 40% girls) prefer active forms of leisure activities, like running, aerobics etc., and only 17% of adolescents practice sport intensively [7]. Undoubtedly, the personal exercise behavior among Polish people is insufficient.

One of the main role in promoting physical activity, healthy lifestyle and health education act physiotherapists. According

to guidelines developed by the American Physical Therapy Association (APTA) a social responsibility and obligation of physiotherapist is counseling and education about healthy lifestyle. Physiotherapists are expected to promote healthy behavior among patients by recommend physical activity to prevent disease and improve health [8]. APTA also supports physiotherapists to perform physical activity in a form compatible with international recommendations.

Recommendations to increase daily physical activity would undoubtedly be more reliable if they come from the mouth of the physically active therapist [9]. Therefore, physical therapists need to present the appropriate level of physical activity and be a suitable example for the patient. Personal experience in various forms of physical activity is also important for a proper planning of training programs and choosing appropriate training loads.

According to studies conducted in the United States doctors and medical students who perform aerobic exercise regularly are more likely to counsel their patients on the benefits of these exercises, as are physicians who perform strength training [10]. It is then possible, that physiotherapists who are physically active are more likely to recommend taking exercise to their patients, when compared to colleagues leading a sedentary lifestyle.

This study was designed to obtain information about the personal exercise behavior and to evaluate the relationship between attitudes towards physical activity and personal exercise practices of future physiotherapists.

## Material and methods

The study involved 224 first year physiotherapy students, Division of Physiotherapy, Faculty of Military Medicine, Medical University of Lodz. 196 students completed the study, including 50 men and 146 women (mean age = 20.4 years , age range 19-24 years ).

All participants completed a questionnaire developed on the base of the analysis of literature. The questionnaire contained questions to obtain data about socio-demographic details (age, gender), physical activity and opinions about the role of physical activity in professional life of the physiotherapist.

The results of the study were analyzed using descriptive statistical methods and a linear relationship between genders was calculated using the Fisher exact test.

## Results

The study was completed by 196 people, including 50 men and 144 women (average age = 20.4 years, age range: 19-24 years) .

The vast majority of respondents (96 %) had sufficient knowledge about the access to extracurricular physical education classes at the University. 37% of respondents said that access to classes was insufficient, and 22% that the offer of extracurricular classes at the University was unsatisfactory.

The respondents unanimously agreed that physical activity has beneficial effects on human health, can list positive aspects of taking regular physical activity and are familiar with the recommendations regarding the frequency of physical activity. 100 % of respondents said that physiotherapists should be a role model of a healthy lifestyle, and that physically active physiotherapist leading a healthy lifestyle will have greater impact on patient recovery. Nevertheless, according to 4 % of respondents, promotion of an active lifestyle and health prevention education goes beyond the primary responsibility of a physiotherapist. Moreover, 7% of students do not think that they will become a role model for patients.

Taking professional sports training was declared only by 4 % of respondents and amateur sports training by more than half of the physiotherapy students (57%). Only 3% of future physiotherapist practiced sports 5 times a week or more, 19% 3-4 times a week, 32% - rarely, but steadily. Almost half of respondents (46 %) said that they do not take physical activity regularly. 39% of future physiotherapists admitted that apart from compulsory classes at the University they practiced no additional physical activity. Participation in extracurricular sports activities declared by students was presented in Table I.

Statistically significant difference was found in sport participation between men and women ( $p < 0.00378$ ). Professional sports training was performed by 12% of men and only by 1% of women, amateur sports training by 72% of men and 51 % of women (tab. I). Almost half of surveyed women (48%) admitted that they do not perform any regular physical activity (tab. I).

The most popular sports in the studied group was swimming ( $n = 88$ ), cycling ( $n = 82$ ), walking ( $n = 78$ ), team games ( $n = 61$ ) and jogging ( $n = 47$ ) (fig 1). Analysis of the results using Fisher's exact test revealed that women more often than men choose cycling ( $p = 0.03509$ ), walking ( $p = 0.00267$ ), group exercises ( $p = 0.00386$ ) and individual gymnastics ( $p < 0.00001$ ). Men tend to prefer martial arts ( $p < 0.00006$ ), workout in the gym ( $p = 0.00217$ ) and team sports ( $p = 0.001122$ ).

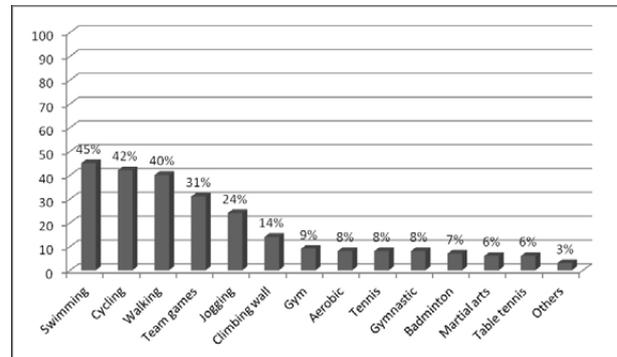


Figure 1. Preferred forms of physical activity  
Wykres 1. Preferowane formy aktywności fizycznej.

## Discussion

Physiotherapy is a healthcare profession dedicated to working with people in order to identify and increase their ability to move and function using various physical means, mainly movement and exercise, but also education and advice. To be able to properly diagnose, plan the rehabilitation process and dose training loads, it is necessary to have detailed knowledge in anatomy, biomechanics, kinesiology, methodology of teaching movement and also methodology of training. Moreover, modern rehabilitation apply many new forms of physical activity such as e.g. Pilates, yoga or strength training as well as new kinds of equipment, so far used only in sports and recreation. Physiotherapist should know all forms of physical culture and sports, their implementation and effects. According to prof. Wiktor Dega, famous polish specialist in rehabilitation, „you cannot imagine modern rehabilitation without physical culture” [12].

Physiotherapists should be aware of the impact of specific health behaviors and proper lifestyle on the maintenance and enhancement of health and wellbeing. One of the main and most important elements of a healthy lifestyle is regular physical activity and it is the role of a physiotherapist to propagate among the society. Although, changing lifestyle habits in patients is difficult, it is often necessary for them to regain health and physical fitness. Physically fit physiotherapist representing healthy

Table I. Declared physical activity among physiotherapy students  
Tabela I. Deklarowana Aktywność fizyczna wśród badanych studentów fizjoterapii

	Women		Men		All	
	n (146)	(%)	n (50)	(%)	n=196	(%)
<b>Kind of sports participation:</b>						
Professional	2	(1)	6	(12)	8	(4)
Amateur	72	(51)	40	(76)	112	(57)
No physical activity	70	(48)	6	(12)	76	(39)
<b>Frequency of sports participation:</b>						
5x/week or more	1	(1)	5	(10)	6	(3)
3-4x/week	23	(16)	14	(28)	37	(19)
rarely, but steadily	40	(27)	23	(46)	63	(32)
Rarely, not regularly	82	(56)	8	(8)	90	(46)

lifestyle would be surely more convincing and reliable in advising healthy behavior and physical activity, as he can act as a **role model for many patients** [13].

Furthermore, physiotherapy profession requires high level of physical fitness and strength as it is associated with lots of lifting heavy objects and long-term work in a standing and bend position.

In this paper authors investigated personal exercise behavior and attitudes towards physical activity among physiotherapy students of Medical University in Lodz.

The program of studies in the Division of Physiotherapy, Medical University in Lodz, covers 90 minutes' compulsory swimming classes a week for 2 semesters and 90 minutes' of aqua aerobic classes per week, during 3rd semester. These are the only available organized physical activities for future physiotherapists. Students surveyed in this study had sufficient knowledge about the available forms of physical activity but said that the access to extracurricular physical activities and their variability is unsatisfactory.

Data obtained in this study indicate that first year physiotherapy students are familiar with the beneficial impact of physical activity on human health, can list positive aspects of taking regular physical activity and know what should be the minimum frequency of physical activity. According to the surveyed students, physiotherapist should promote physical activity and healthy lifestyle. Respondents are aware that will soon become role models for patients and believe that they should set an example of healthy lifestyle.

Unfortunately, the theoretical knowledge about the beneficial effects of physical activity is not accompanied by personal exercise behavior of future physiotherapists. Analysis of the results showed that there is no significant difference between the level of physical activity of the future physiotherapists and the level represented by the general public. Up to 39% of students admit that they do not perform any physical activity in their free time and although 62% of students participated in sports activities, only 3% of them meet the recommendations of the American Heart Association (AHA) by undertaking physical activity not less than 30 minutes 5 or more times a week. In the group of student who perform additional physical activity - 46% admit that they do not exercise regularly. Women undertake physical activity significantly less often than men.

The results are even worse from the results obtained at the same University in 2006 by Motylewski et al., where 10,3% respondents declared performing extracurricular physical activity for 30 minutes 5 times a week. In the cited research over 60 % students exercised only 1 - 3 times a week or did not exercised at all. According to Motylewski et al. students do not spend their free time actively, although they know that physical activity has positive impact on health. Passive forms of resting dominate over active and physical activity was at the 5<sup>th</sup> place of forms of spending leisure time among future physiotherapists (13).

Research carried out among physiotherapy students from Medical University in Warsaw showed that 56,5% of students did not perform any physical activity,

simultaneously considering physical fitness to be very important virtue of a physiotherapist. According to authors obtained results indicate the need to optimize the learning process [14].

On the other hand, study conducted by Kochanowicz among physiotherapy students from Medical University in Gdansk showed that as many as 83% of the future physiotherapist perform physical activity apart from the physical education classes at the University. Unfortunately, the author does not define how frequent and how intense is this activity. Only 17 % - does not participate in any extracurricular physical education classes because of the lack of time [11].

The results of this research strongly differ also from the results of a survey carried out by Chevan and Haskvitz [12] in the United States who showed that 67% of physiotherapists and 70% of the physiotherapy students perform regular physical activity that meets the requirements of the American Heart Association.

The divergence of results between different universities may suggest that personal exercise behavior and attitudes towards physical activity depend on the program of studies and the access to physical education and extracurricular forms of physical activity. It is the role of the university educating future physiotherapists to develop the habit of physical activity and healthy lifestyle and increase the awareness of the importance of exercise in the prevention and rehabilitation among students. It should be noted that the period of studies is the last stage of education, and should be used to develop physical activity, so necessary in this profession. What is more, by ensuring variety of physical activity forms, university provide future physiotherapist with a wide variety of treatment tools.

## Conclusions

1. Physiotherapy students are aware about the beneficial effects of regular physical activity on health but this knowledge is not correlated with personal exercise behavior.
2. The level of physical activity among future physiotherapists is not greater than among the rest of the society.
3. In the education of future physiotherapists the emphasis should be placed on increasing the level of physical activity, so necessary in this profession.

## Piśmiennictwo:

1. Drygas W, Jegier A. Recommendations regarding physical activity in the prevention of cardiovascular diseases [in Polish]. [aut. książki] Naruszewicz M. *Kardiologia zapobiegawcza*. Szczecin : PTBnM Verso, 2003, strony 252-266.
2. Haskell WL, Lee IM, Pate RR, et al. Physical activity and public health: updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. *Med Sci Sports Exerc*. 2007, 39, strony 1423-1434.

3. Drygas W, Skiba A, Bielecki W, et al. Assessment of physical activity of residents of six European countries. Project Bridging East-West Health Gap. *Medicina Sportiva*. 2001, Tom 119, 5 (Supl. 2).
4. Kałucka S, Ruszkowska J, Drygas W. Physical activity, still underrated element of preventive healthcare [in Polish]. *Polska Medycyna Rodzinna*. 2002, Tom 4, 4.
5. B, Woynarowska. *Psychosocial environment of the school and school adaptation and health and health behaviors of students in Poland. Research report*. Warszawa : brak nazwiska, 2003.
6. Januszewicz P., Szymborski J. Health hazards in schoolchildren in the light of the survey; Deficiencies of healthy behaviours; Low physical activity [in Polish]. [aut. książki] Mazur J. Woynarowska B. *Zdrowie naszych dzieci*. Warszawa : brak nazwiska, 2001.
7. Jodkowska M., Wrocławska M. Lifestyle of young people aged 15-19 [in Polish]. [aut. książki] Szamotulska K., Sito A Szymborski J. *Zdrowie Naszych Dzieci*. Warszawa : Instytut Matki i Dziecka, 2000.
8. *Physical therapists and physical therapist assistants as promoters and advocates for physical activity/exercise. HOD P06-08-07-08*. [Online] 2008. [http://www.apta.org/uploadedFiles/APTAorg/About\\_Us/Policies/Practice/PromotersAdvocatesActivityExercise.pdf](http://www.apta.org/uploadedFiles/APTAorg/About_Us/Policies/Practice/PromotersAdvocatesActivityExercise.pdf).
9. Pate RR, Prat M, Blair SN, et al. Physical activity and public health. a recommendation from the Centers for Disease Control and prevention and the American College of Sports Medicine. *JAMA*. 1995, 273, strony 402-407.
10. Abramson S, Stein, Schaufele M, et al. Personal exercise habits and counseling practices of primary care physicians: a national survey. *Clin J Sport Med*. 2000, 10, strony 40-48.
11. B, Kochanowicz. The level of physical activity of Physiotherapy students at Medical Academy in Gdansk and their opinion towards various forms of physical activity [in Polish]. *Ann Acad Med Gedan*. 2007, 37, strony 53-62.
12. Sochocka L, Wojtyłko A. Physical activity of medical and non-medical students [in Polish]. *Medycyna Środowiskowa - Environmental Medicine*. 2013, Tom 13, 2, strony 53-58.
13. Motylewski S., Lisowski J., Gątkiewicz M., et al. Physical activity of physiotherapy students at the Military Medical Academy in Lodz. *Zdrowie Publiczne*. 2006, Tom 116, 2.
14. Boguszewski D, Adamczyk J, Ochal A. Aktywność ruchowa i nawyki żywieniowe młodych fizjoterapeutów. *Człowiek i Zdrowie*. 2010, Tom 4, 1, strony 84-95.
15. Chevan J, Haskvitz EM. Do As I Do: Exercise Habits of Physical Therapists, Physical Therapist Assistants, and Student Physical Therapists. *Phys Ther*. 2010, 90, strony 726-734.
16. Sochocka L, Wojtyłko A. Aktywność fizyczna studentów studiów stacjonarnych kierunków medycznych i niemedycznych. *Medycyna Środowiskowa - Environmental Medicine*. 2013, Tom 13, 2, strony 53-58.

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