JAKUB GRZEGORZ ADAMCZYK [1,2], DARIUSZ BOGUSZEWSKI [1],
ILONA DEBRZAK-ADAMCZYK [3], ANDRZEJ OCHAL [1]

Aktywność i sprawność fizyczna fizjoterapeutów

Streszczenie

Wstęp. Aktywność fizyczna powinna towarzyszyć człowiekowi przez całe życie, chociażby po to, aby prawidłowo stymulować rozwój całego organizmu. Wysoki poziom medycyny nie jest tutaj wystarczającą alternatywą w walce z chorobami cywilizacyjnymi, ponieważ tylko systematyczna aktywność fizyczna pozwala człowiekowi minimalizować ich ryzyko.

Cel. Celem pracy było określenie znaczenia sprawności fizycznej w pracy fizjoterapeuty oraz skonfrontowanie ich opinii z deklarowanym poziomem aktywności fizycznej.

Materiał i metody. Badaniami objęto grupę 123 fizjoterapeutów, których podzielono ze względu na wiek, wyróżniając pięć przedziałów (do 25 lat, 26-30 lat, 31-40 lat, 41-50 lat, powyżej 50 lat). W pracy wykorzystano autorski kwestionariusz dotyczący sprawności fizycznej oraz kwestionariusz IPAQ w wersji skróconej.

Wyniki. Około 97% badanych odpowiedziało, że sprawność fizyczna jest ważnym lub bardzo ważnym elementem pracy fizjoterapeuty. Większość z nich (93,5%) subiektywnie oceniło swoje zdrowie jako dobre lub bardzo dobre. Wyniki te silnie korelują z subiektywną oceną własnej sprawności fizycznej. Ponad połowa respondentów (52,0%) określało swoja sprawność fizyczną jako dobrą, a co czwarty (26,8%) twierdził, że jego sprawność jest na średnim poziomie. Wraz z wiekiem zwiększała się aktywność fizyczna badanych. Poziom aktywności zaobserwowany u najstarszej grupy fizjoterapeutów był najwyższy ze wszystkich analizowanych grup. Jako jedyna, grupa ta osiągnęła wysoki poziom aktywności fizycznej według standardów IPAQ.

Wnioski. Aktywność ruchowa fizjoterapeutów była na wystarczającym poziomie, jednak z uwagi na fakt, że dla swoich pacjentów są oni naturalnym wzorem zdrowego trybu życia, wymagania wobec nich powinny być większe. Za kluczowe elementy przygotowania sprawnościowego w pracy fizjoterapeuty, badani uznali koordynację ruchową, siłę i wytrzymałość. Planując własną aktywność fizjoterapeuci muszą uwzględniać trening motoryczny w tym zakresie. Uczelnie powinny kłaść większy nacisk na kształtowanie postaw prozdrowotnych swoich studentów.

Słowa kluczowe: sprawność fizyczna, aktywność fizyczna, fizjoterapia.

Physical activity and fitness of physiotherapists

Abstract

Introduction. Physical activity should accompany man throughout the entire life in order stimulate correctly the development of the whole organism. The progress in medicine development isn't a sufficient alternative in the fight against civilization diseases. Only the systematic physical activity lets people minimize their risks.

Aim. Determining the significance of physical fitness in the work of physiotherapists and confronting their fitness with the declared level of physical activity.

Material and methods. The research covered a group of 123 physiotherapists who were divided into five age-groups (up to 25 years, 26-30 years, 31-40 years, 41-50 years, over 50 years). The author's questionnaire about the physical fitness and an IPAQ short version questionnaire were used in the work.

Results. About 97% of respondents claim that the physical fitness is an important or very important element of the physiotherapists' work. Majority of the studied group (93.5%) subjectively judged their health as good or very good. These results are strongly correlating with the subjective evaluation of the own physical fitness. Over half of respondents (52.0%) determined their physical fitness as good, and one-quarter (26.8%) claimed that their efficiency was on the average level. With age physical activity increased in the examined groups. The observed activity level among the oldest physiotherapists was the highest of all analysed. As the only one, this group reached the high level of physical activity according to IPAQ standards.

Conclusions. Physical activity of physiotherapists was on the acceptable level, however for their patients they are a natural model of a healthy lifestyle, so the demands in relation to towards them should be higher. The key elements of the physical fitness in the work of the physiotherapist are: motor coordination, strength and endurance. While planning their own activity physiotherapists must include training in these areas. Universities should put stronger emphasis on shaping pro-healthy habits of their students.

Key words: physical fitness, motor activity, physical therapy.

[1] Department of Rehabilitation, Physiotherapy Division, Warsaw Medical University
[2] Theory of Sport Department, Academy of Physical Education in Warsaw
[3] Physical Culture Section of Physiotherapy Students Academic Group at Warsaw Medical University;

INTRODUCTION

Year after year the life expectancy of our population increases, which in the last century has given us approximately 30 additional years. However progressive development of the civilization causes the evident process of deterioration of the excellence of the human body. [1]

Physical activity should accompany man throughout the whole life, even for the correct stimulation of the whole organism development. Progress in medicine is not a sufficient alternative in the fight with civilization diseases, because only systematical physical activity permits man to minimize the risk [2,3].

One of the reasons of increased incidence of civilization diseases is little physical activity, and age is the additional factor predisposing to the symptoms on the part of the circulatory system. Motor activity undertaken by men above 35 years is low. For the majority of parents the physical effort is limited to walking of one kilometre which consists in walking to or picking up their own child from a nursery school or a school [4].

About 50% Poles do not feel the need, cannot and do not want to implement any personal strategy of the healthy lifestyle. Only every fifth person understands the need and would like to do something for himself/herself, but is not able to. The subsequent 20% of the population know and can, but there is neither sufficient imagination nor any justification for such strategy to be realized. In this situation most of young physiotherapists spend their free time passively in spite of the fact that physical activity is by them correctly associated with the active rest having the positive influence on health [5].

Physiatrists should play the main role in the wholesome prevention, particularly of the diseases which are a consequence of the lack of the sufficient physical activity [6].

AIM

The aim of the work was the qualification of the significance of the physical fitness in the work of physiotherapists and comparing their opinion with declared level of the physical activity.

MATERIAL AND THE METHOD

The research group comprised 123 physiotherapists. The most were women (70%). The examined group was diverse in respect of the height and the body mass, the age (from 23 to 60 years) and the seniority (Table 1).

For more exact identification of the physiotherapists' opinion of and gaining knowledge on the subject of fitness and the physical activity, the examined subjects were divided into groups according to the age. As far as age is concerned there were five age groups distinguished: (to 25 years, 26-30 years, 31-40 years, 41-50 years, above 50 years). The structure of groups is presented in detail in Tables 1-2.

TABLE 1. Basic data characterizing the research group and its structure broken to the sex, average values.

	FEMALE (n=87)	MALE (n=36)
Age (years)	31.91±10.16	34.18±11.20
Body height (cm)	165.15±9.45	180.5±7.24
Body mass (kg)	62.48 ±13.98	85.18 ±15.32
BMI	22.05±4.70	25.85±3.43
Work experience (years)	6.87±8.62	8.30±925

TABLE 2. Basic data characterizing the research group, broken by the age: average values.

	To 25 Years (n=34)	26-30 Years (n=43)	31-40 Years (n=20)	41-50 Years (n=10)	Over 50 Years (n=16)
AGE (years)	23.91±0.79	27.67±1.30	34.95±3.24	45.00±3.71	54.69±3.07
BMI	21.84±3.35	23.47±3.87	22.75±6.35	25.03±3.06	26.92±3.67

The participation in research was voluntary and consisted of two questionnaires. The first one consisted of four parts oriented to different contents:

- general characteristics of the examined person,
- education of the given physiotherapist,
- the information concerning the work and the perception of studies by the questioned,
- subjective estimation of one's owns physical fitness and the identification of the significance of the fitness in the work of physiotherapists.

The second part used the International Physical Activity Questionnaire (IPAQ) in the shortened version [7]. It contains questions concerning motor activities undertaken during recent 7 days, qualifying among other things:

- the time of the moderate activity,
- the time of the intensive activity,
- the time spent sitting.

The calculation of the level of the physical activity took place on the basis of coefficients suitable for each kind of activity. Thanks to them each kind of activity one can express in MET units (Metabolic Equivalent of Work – minutes/week) which we obtain by multiplying the given coefficient of the given activity, by the number of days spent on it and the duration in minutes per week.

Body mass and height the BMI value, the seniority and the time devoted to physical activity is presented by the means of arithmetical average ($\bar{x}$), with regard to standard deviation (SD).

In the quantitative elaboration of empirical material one applied proportional calculations and calculations of the chi-square in the form of the G function, making the estimation of differences in fractions of the physiotherapists' answers to questions put in the questionnaire possible. The values at level 0.05 were accepted as the significant ones.

The differentiation of the time devoted to physical activity in groups with regard to age was defined by means of ANOVA test. If the results were varying, their importance among each group was qualified post hoc with the Tukey test. The values up to 0.05 were accepted as significant. Calculations were performed with the Statistica Software (v. 9.0).

RESULTS

More than the half of the examined (52.0%) assessed their own physical fitness as good, and every fourth (26.8%) affirmed that their fitness was on the average level. A very good level of fitness was declared by 17%. Only 2.4% said that in their case fitness was on the low level, and nobody mentioned the poor level. Simultaneously, a vast majority of respondents (96.7%) affirmed that the physical fitness was an important or very important feature determining the work of physiotherapists (Figure 1).

Analysing individual parameters of the agility level (strength, speed, endurance, vivaciousness, flexibility and co-ordination), the polled pointed to the motor co-ordination as the most important element, which was considered as important or very important in the work of a physiotherapist by 96.7% of those surveyed (Figure 2). Equally important in the opinion of the respondents are: strength (82.9% answers) and endurance (86.2%). Slightly more than the half surveyed evidenced the importance of flexibility and speed. Least essential in the physiotherapists' work seems to be the vivaciousness, which was mentioned as fairly important by 37.4% of those polled, and by further 46, and 3% as not very important or insignificant.

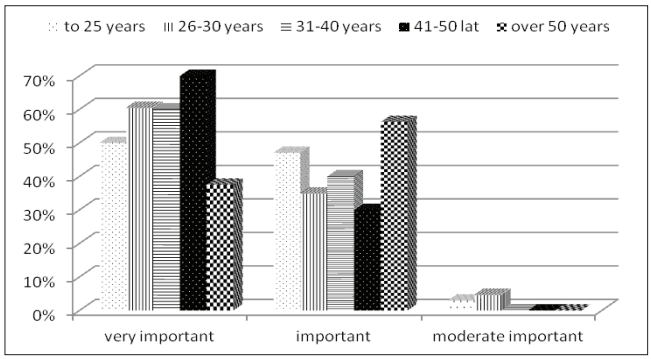

FIGURE 1. The significance of the physical fitness in the opinion of physiotherapists, answers with regard for the age groups of respondents.

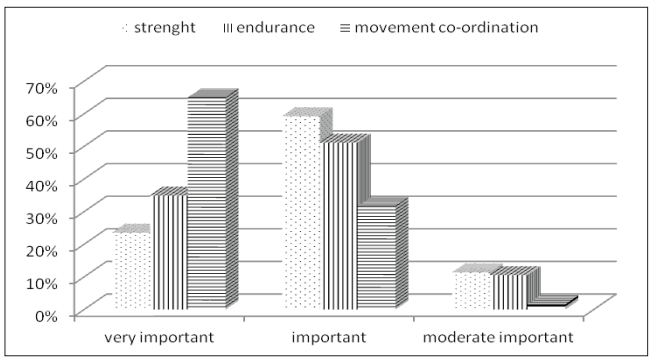

FIGURE 2. The most important motor features in physiotherapists' work in the opinion of respondents.

The majority of those surveyed (93.5%) subjectively rated their own health as good or very good. These results strongly correlate with the subjective estimation of the own physical fitness ($p<0.05$). Evaluating the preparation in respect of agility, that was assured by the college, most physiotherapists (31.7%) answered that colleges educated in the inadequate manner in this range. A little smaller group (27.6%) assessed the curriculum as average on that score. Every fifth interviewee was satisfied with motor exercises performed in the college, affirming that they prepared them well for the professional work.

It seems that physiotherapists have a formed opinion about fitness importance in their own work, because majority of those surveyed assigned their own opinion to two first choice, affirming that it was very important or important (Figure 1). The third age group (31-40 years) agreed in hundred-percent in this matter. Up to 70% of them ascertained that fitness in their work was very important, and the rest - that it was important. The not so high percentage of two youngest age groups (respectively 2.9% and 4.7% respec-

TABLE 3. The characteristics of the physical activity in the group of physiotherapists, measured with the IPAQ questionnaire, with the regard to the division into age groups.

Group to 25 years	Time [min]	Days	MET
Walking	19.2	5.85	371
Moderate physical activity	92.3	1.91	706
Intensive physical activity	37	1.24	365
Time spent sitting	246	-	-
Physical activity level		Sufficient	
Group 26-30 years	Time [min]	Days	MET
Walking	24.6	5.38	437
Moderate physical activity	62.8	2.1	527
Intensive physical actvity	51.6	1.83	755
Time spent sitting	170	-	-
Physical activity level		Sufficient	
Group 31-40 years	Time [min]	Days	MET
Walking	27.4	5.95	539
Moderate physical activity	60.8	2.15	523
Intensive physical actvity	68.7	1.95	1071
Time spent sitting	192	-	-
Physical activity level		Sufficient	
Group 41-50 years	Time [min]	Days	MET
Walking	14	6	278
Moderate physical activity	45	1.7	306
Intensive physical activity	38.6	2	617
Time spent sitting	255	-	-
Physical activity level		Sufficient	
Group over 50 years	Time [min]	Days	MET
Walking	32.3	5.69	607
Moderate physical activity	240	2.56	2456
Intensive physical actvity	70.7	2.06	1167
Time spent pitting	302	-	-
Physical activity level		High	

tively) pointed that the physical fitness is fairly important in their work. It may be due to the fact that they are young and fit and such situation seems to them natural, because they do not find limitations in their work on the part of their own fitness. Other explanation could be the fact that older physiotherapists, having longer seniority and some greater experience, are more aware of the preparation for agility in this occupation.

Physical activity of those surveyed increased along with age (the exception was determined here by the age group 41-50 years). In the first four age groups along with the age the quantity of the time intended on the moderate physical activity was declining. In turn in the first three groups, along with age, the time of the actively spent leisure increased. The single time devoted by the group of the youngest physiotherapists to intensive activity was indeed shorter than of the group aged 31-40 years (p=0.048). Moreover, the group of physiotherapists below 25 years spent more time during the day sitting (p=0.052). The activity level observed at the oldest group of physiotherapists was the highest of all surveyed groups. As the only one, this group reached high level of physical activity according to IPAQ standards (Table 3).

DISCUSSION

Physical activity of Polish society not immense. Children and youngsters are in the age group for which sport in Poland is best organized and among them the percentage of active persons is the greatest. The percentage of grown-ups taking part in sport activities is not high, and even is dropping in smaller towns and villages. Adults (including students) often explain their own inactiveness by fatigue, work or duties at home or with the family [5]. However in the present work one did not ask questions for reasons of possible sedentary lifestyle, the received results show that the physical activity of physiotherapists is inadequate. It is especially alarming, because this group ought to be treated in a special way, because of role model for the society [8,9].

Bearing in mind the approach to the physical fitness and its acknowledgement as the important element in physiotherapists' work the activities, which are undertaken by those surveyed for the purpose of the maintenance or the improvement of their own fitness, gain special significance. Average results declared by the examined indicate that the intensive physical activity undertaken by them takes place twice a week and every time it lasts almost an hour. To that, one can add moderate activity done twice a week, sometimes slightly exceeding the duration of an hour.

The physical fitness of the population is an object of continuous considerations of physical education theoreticians. In this area, also troubleshooting tests of physical fitness of students of the different kind of colleges, among others also medical studies, have been undertaken. The resulting general observations allow for stating that the physical fitness of young studying people does not deviate from quite low in the society, leaving much to be desired. What is more, physiotherapists, just like about 50% of Poles, do not feel the need, cannot and do not want to realize any personal strategy of the healthy lifestyle [5].

Interestingly only 2.4% from those surveyed physiotherapists said that in their case, fitness was on the low level, and nobody reported very poor level. Simultaneously a vast majority (nearly 97%) affirmed that the physical fitness was important or very important feature determining the work of the physiotherapist.

This raises a question, whether in the face of not very high level of physical activity, fitness of physiotherapists is really on such a high level. The partial answer is given in the research of Adamczyk and co-authors who examined 99 students of the first-year physiotherapy at WUM. The research confirmed that the fitness level of the group was at most average level, and in consideration of differences resulting from the gender it is low among men [9].

Physical fitness, endurance and co-ordination were acknowledged as leading features in the profile of the physiotherapist. The co-ordination understood here as the ability of making joint movements or appropriate kinaesthetic differentiation of the used power, is a feature of most significance. The strength is required in many kinesitherapeutic methods or the massage; however the endurance appears when, for instance there is a necessity of prolonged support of a definite position and also many time the necessity of exercising together with patients. Unfortunately just these motor features seem to be most neglected by young men [13].

In this context it is not surprising that very few physiotherapists subjectively evaluated their fitness as poor with regard to agility, while real results show something different. Most of the students and physiotherapists claim that fitness is an essential element in their work. Physiotherapists then, evaluate themselves as fit (despite the fact, that objective research shows differently) or else they would suggest that they could be incompetent in their own work.

Motor activity is important at every age; it helps in maintaining health and beauty. It seems that it should have a special significance in the student′s environment (as the future of the nation), therefore implementing of the healthy lifestyle among the academic youth and taking up the physical activity by them, seems to be the obligatory element of the conscious investment into oneself [13].

Those students after the graduation from various colleges will come back to their own environments, where they could have positive influence on the improvement of the motor activity in social groups they will have contact with. They can and should be an authority and an example for others [14].

This statement seems to be most true for students graduating from medical colleges, because graduates of these studies are presented with the acknowledgement and the prestige within a society. Therefore they are prepared to be the natural authority and the pattern for those seeking advice and the leaders in promoting the healthy lifestyle [15]. Especially because the direction of studies, specifically connected with the physical education, can be a factor determining the level of physical activity [16].

A doctor, a nurse, a dietician or a physiotherapist who does not undertake the physical activity himself/herself or does not follow a healthy lifestyle, cannot be sufficiently

reliable, and will not encourage his patients, friends, the family and the environment to the motor recreation or sport.

The physiotherapist must be ready to practice specific exercises himself/herself and know the use of functional tests as well as possess the knowledge on the subject of the effort physiology, and should also have the skill to interpret the data for proper movement management for medical and health purposes [17]. Working with persons needing help demands professional competences from physiotherapists. They consist of both knowledge, as well as physical and psychical fitness [18].

In most colleges of physical education classes last only for first two semesters of learning and most often this is not sufficient (1-2 hours every week). This problem is noticed both by students and lecturers [13]. Having a lot of other classes, students haven't time, strength or the wish to take up any physical activity. The regime of studies: a lot of learning, examinations and colloquia, make students resign from the motor activity and not favour the healthy lifestyle [8]. This problem is noticed also by O′Donoghue and co. They prove the necessity of the introduction of changes in teaching programs, so that to fit them in the greater degree into national health programs. One should understand that not only the greater emphasis ought to be put on motor activities in colleges, but there should also be conditions created to promoting the healthy lifestyle [19]. These activities should embrace all educational levels [20].

All quoted research implies that the activity of the society is on inadequate level and with reference to these data its level among physiotherapists does not deviate from average. Even the not so hard physical activity influences the changes in fitness, and the greatest reactivity is shown by the level of the endurance [21]. The issue is however the fact that there are higher demands from physiotherapists both because of professional requirements as well as that they are perceived as a kind of pattern and their acting can be effective with specific behaviours and health attitudes in the society [6]. The group of physiotherapists aged above 50 years was a glorious exception here, which can prove that with the age one increases the awareness of the value of health (and the physical fitness) and the necessity of taking up activities maintaining its proper level.

CONCLUSIONS

1. The results of research confirm that the physical fitness is an essential component of the work of a physiotherapist, yet simultaneously graduates from the Physiotherapy point that the agility preparation received in progress of studies is insufficient. Therefore one ought to put some greater emphasis on the reaching fitness and motor skills during obligatory and optional classes while studying.
2. In the opinion of physiotherapist the key-elements of the physical preparation for the work of the physiotherapist are motor coordination, strength and endurance. So, the curricula of motor subjects, must take into account the adequate preparation in this sphere. Planning their own activity, physiotherapists should focus specifically on these motor features.
3. Though the motor activity of physiotherapists is on the sufficient level, it seems that requirements from this social group should be higher.
4. Colleges should put greater emphasis on the formation of healthy attitude among their own students, and with the suitable arrangement of class curricula create the best conditions for that.

REFERENCES

1. Jakubek A, Susik P. Znaczenie aktywności fizycznej w utrzymaniu należnej masy ciała i wysokiej jakości życia. Lider. 2006;10:3-6.
2. Dencikowska B, Dencikowska A, Dencikowski D. Samoocena aktywności fizycznej a cechy somatyczne. Lider. 2009;1:10-1.
3. Bronikowski M. Związek pomiędzy sprawnością fizyczną, częstotliwością podejmowania aktywności fizycznej a wskaźnikiem nadwagi. Wychowanie Fizyczne i Zdrowotne. 2004;12:10-4.
4. Drabik J, Drabik P, Resiak M. Aktywność fizyczna populacji gdańskiej w wybranych grupach wiekowych. Wychowanie Fizyczne i Zdrowotne. 2001;(4):11-4.
5. Motylewski S, Lisowski J, Gątkiewicz M, Poziomska-Piątkiewicz E. Aktywność fizyczna studentów fizjoterapii Wojskowej Akademii Medycznej w Łodzi. Zdr Publ. 2006;116(2):263-6.
6. Wittink H, Engelbert R, Takken T. The dangers of inactivity; exercise and inactivity physiology for the manual therapist. Manual Therapy. 2011;16(3):209-16.
7. Biernat E, Stupnicki R, Gajewski A, Międzynarodowy Kwestionariusz Aktywności Fizycznej (IPAQ) - wersja polska. Wychowanie Fizyczne i Zdrowotne. 2007;(6-7):4-9.
8. Boguszewski D, Adamczyk J, Ochal A. Styl życia studentów fizjoterapii Warszawskiego Uniwersytetu Medyczycznego. Postępy Rehabilitacji. 2009;XXIII (2):57-8.
9. Adamczyk J, Boguszewski D, Ochal A. Sprawność fizyczna studentów fizjoterapii Warszawskiego Uniwersytetu Medycznego. Postępy Rehabilitacji. 2009;XXIII(2):57.
10. Lisicki T, Drygas A. Sprawność fizyczna studentów I roku uczelni medycznych – kryterium oceny ich zdrowia. Przegląd Naukowy Kultury Fizycznej Uniwersytetu Rzeszowskiego. 2006;3:311- 7.
11. Mynarski W, Rozpara K, Garbaciał W. Aerobic Capacity of Student with Different Levels of Physical Activity as Assessed by IPAQ. Journal of Human Kinetics. 2009;21:89-96.
12. Drygas A, Michalski W, Talar J. Rozwój i sprawność fizyczna kandydatów na Oddział Fizjoterapii Wydziału Lekarskiego Akademii Medycznej w Bydgoszczy w latach 1998 i 1999. Scripta periodica. 2000; III(2):61-4.
13. Adamczyk J, Boguszewski D, Ochal A. Signifiance of physical fitness in the work of a physiotherapist vs. Its level in students of physiotherapy major at the Warsaw Medical University. Human and Health. 2010;IV(1):102-7.
14. Boguszewski D, Adamczyk J, Ochal A. Physical activity and heating habits of Young physiotherapists. Human and Health. 2010;IV(1):90-5.
15. Mulligan H, Fjellman-Wiklund A, Hale L, Thomas D, Häger-Ross C. Promoting physical activity for people with neurological disability: Perspectives and experiences of physiotherapists. Physiotherapy Theory & Practise. 2011;27(6):399-410.
16. Baj-Korpak J, Soroka A. Poziom aktywności fizycznej studentów Państwowej Szkoły Wyższej i Zamiejscowego Wydziału Wychowania Fizycznego w Białej Podlaskiej. Kultura Fizyczna. 2010;5-8:16-22.
17. Helders P. Physical Fitness and Physiotherapist. Advances in Physiotherapy. 2004;6:145-6.
18. Szczepańska J, Klin Z, Jaroszewska A, Ciesielski R. Zaburzenia nastroju w populacji studentów Wydziału Fizjoterapii AWF we Wrocławiu. Część 1. Fizjoterapia. 2008;16(3):69-78.
19. O'Donoghue G, Doody C, Cusack T. Physical activity and exercise promotion and prescription in undergraduate physiotherapy education: content analysis of Irish curricula. Physiotherapy. 2011;97(2):145.
20. Nowak PF. Poziom wiedzy uczniów szkół ponad-gimnazjalnych o aktywności fizycznej ukierunkowanej na zdrowie. Zdr Publ. 2010;120(4):365-9.
21. Knapik A, Plinta R, Saulicz E, Kuszewski M. Znaczenie aktywności ruchowej w profilaktyce zdrowotnej. Zdr Publ. 2004;114(3):331–7.

Informacje o Autorach
Dr Jakub Adamczyk – adiunkt; dr Dariusz Boguszewski – adiunkt, Warszawski Uniwersytet Medyczny; mgr Ilona Debrzak-Adamczyk – fizjoterapeuta, Fundacja „Żyć z Chorobą Parkinsona”; mgr Andrzej Ochal – starszy wykładowca, Warszawski Uniwersytet Medyczny.

Adres do korespondencji
Jakub Adamczyk
Zakład Rehabilitacji Oddziału Fizjoterapii,
II Wydział Lekarski,
Warszawski Uniwersytet Medyczny
ul. Solec 57, 00-424 Warszawa
tel. (22) 629-46-65
e-mail:jadamczyk@wum.edu.pl