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Analiza porównawcza wybranych zdolności motorycznych studentów I roku fizjoterapii i farmacji Uniwersytetu Medycznego w Lublinie oraz ich opinii dotyczących sprawności fizycznej w przyszłej pracy zawodowej

A comparative study of motor skills of physiotherapy and pharmacy students at Medical University of Lublin and their opinions concerning the role of physical activity in their future professional careers

Streszczenie

Wprowadzenie. W ujęciu antropomotorycznym zdolności motoryczne są kompleksami predyspozycji zintegrowanych wspólnym podłożem biologicznym, ruchowym, ukształtowanym przez czynniki genetyczne i środowiskowe, które we wzajemnych interakcjach wraz z umiejętnościami ruchowymi tworzą potencjalną stronę motoryczności.

Cel. Celem pracy jest porównanie wyników badań dotyczących wybranych zdolności motorycznych studentów fizjoterapii i farmacji Uniwersytetu Medycznego w Lublinie.

Materiał i metoda. Badaniem objęto po 27 osób studiujących fizjoterapię i farmację na Uniwersytecie Medycznym w Lublinie. Oceniano zdolności motoryczne na podstawie testu Pilicza i próby wytrzymałościowej – jeden z testów Denisiuka. Dodatkowo przeprowadzono badanie ankietowe.

Wyniki. Ogólna sprawność fizyczna studentów fizjoterapii oceniona testem Pilicza osiągnęła poziom 246 pkt, który jest o 64 pkt wyższy od wyniku uzyskanego przez studentów farmacji. Wszyscy studenci fizjoterapii stwierdzili, że oprócz obowiązkowych zajęć z wychowania fizycznego wykonują dodatkowe ćwiczenia fizyczne. Zaledwie 59% badanych farmaceutów wykonuje dodatkowe ćwiczenia fizyczne, natomiast 41% uczęszcza jedynie na wychowanie fizyczne jeden raz w tygodniu.

Dyskusja. Wyższy poziom sprawności fizycznej w grupie studentów fizjoterapii jest m.in. wynikiem tego, iż jednym z warunków rekrutacji na studia jest zdanie egzaminu sprawnościowego. Poza tym tok studiów oraz przyszła praca zawodowa wymagają same w sobie wysokiego poziomu sprawności fizycznej.

Wnioski. Studentów fizjoterapii charakteryzuje się wyższy poziom sprawności fizycznej niż studentów farmacji. W przeciwieństwie do studentów farmacji, przyszli fizjoterapeuci widzą dużą zależność pomiędzy sprawnością fizyczną a pracą zawodową.

Summary

Introduction. From the human motoricity point of view, motor skills are sets of predispositions connected by a common, dominant biological and motor background that are shaped by genes and environment. These, via the process of mutual interaction, when combined with motor abilities offer potential for motoricity.

Aim. The aim of the work is a comparison of the test results concerning specific motor skills. Tests were conducted on a group of 1st year physiotherapy and pharmacy students of Medical University of Lublin.

Material and method. The research covered 2 groups: physiotherapy and pharmacy students of Medical University of Lublin; each group included 27 members. The survey was based on Stefan Pilicz motor skills test and Ludwik Denisiuk endurance test. The survey was supplemented with the data collected from the questionnaire.

Results. General level of physical fitness for physiotherapy students assessed on the basis of Pilicz test reached 246 points, which is 64 points higher than the one for pharmacy students. All of physiotherapy students stated that apart from obligatory PE classes they do some extra physical exercises. When it comes to pharmacy students, only 59% admit to do some additional exercises, and only 41% of them attend the obligatory PE classes once in a week.

Discussion. A higher level of physical fitness of the physiotherapy students stems among other things from the fact that physical fitness tests are conducted during enrollment. Apart from that, the course of the studies and the character of future job in itself make it necessary to sustain a high level of fitness.

Conclusion. Physiotherapy students represent a higher level of physical fitness than pharmacy students. Contrary to the pharmacy students, physiotherapy students see a strong correlation between the level of physical fitness and one's profession.

Słowa kluczowe: zdolności motoryczne, test Pilicza, fizjoterapia.

Key words: motor skills, Pilicz test, physiotherapy.

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INTRODUCTION

Physical activity is believed to be an important source of health habits, morals and culture patterns. It also influences significantly the attitudes and systems of values of young people. Improvement of individuals health condition and enhancement of their physical development are considered to be of highest importance in the process of health education [1].

Nowadays, an immense civilization development, automotive industry in particular, has adversely influenced the physical activity of human population. Children and youths got used to a comfortable lifestyle which often results in hypo-kinesis. It is highly interesting to analyse the levels of physical fitness of the 1st year pharmacy and physiotherapy students and their attitudes towards physical education. Nevertheless the idea is believed to be particularly tempting as physical fitness not only influences physical condition or well-being, but also determines the quality of future professional and personal life.

THEORETICAL BACKGROUND

Demel defined motoricity as a set of human movement abilities. In other words, it concerns everything connected with people's ability to move in space as the consequence of change in the location of an entire body or its parts [2].

Those days human motoricity is defined by people's motor skills. It's a common belief that researchers should concentrate not only on the external aspect of people's motoricity (e.g. the length of a long jump, the value of power used in a throw) but also on its inner aspect. Every movement is a combination of two elements: biological (the movement apparatus, sources of energy and control) and psychosocial (the aim, the motivation). As prof. Zygmunt Gilewicz stated in 1964, the question of people's motoricity should be approached from different angles [2].

From the human motoricity point of view, motor skills are sets of predispositions connected by a common, dominant biological and motor background shaped by genes and environment. These, via the process of mutual interaction, when combined with motor abilities offer potential for motoricity, determining organisms readiness for an effective performance of different tasks [2].

The basic motor skills include endurance, strength, speed, flexibility, agility and power. Those can be examined by a variety of tests which can be divided into: tests conducted without the use of special devices (weight lifting, medicine ball throw), or conducted with the use of measuring devices such as dynamometers and tens metric platforms [3].

Regular physical exercise as a way of shaping people's motor skills plays an important role in each sphere of human life; not only in the context of training and physical fitness, but also in the case of disease prevention, care for slim figure or in leisure time [4].

Authors frequently stress the broad context of the concept. This stems from the fact that motor actions are not isolated functions of motor organs, but are strictly connected with personality of an individual. One's emotions, will, personality features and cognitive skills are of highest importance. Experiences connected with motor actions can contribute significantly to individual's vitality, morality and culture [3].

The level of one's physical fitness is strictly connected with biological value of a human, his/her life quality and self-esteem. Well being and life quality, which is to be understood as the possible level of satisfaction of one's psycho-physiological needs or the need for freedom, dignity, love etc., is a reflection of an individual's health condition. Thereby physical fitness is considered to constitute the basis for health and well-being [5].

According to Drabik, not only does physical fitness play an important role in sport achievements and disease prevention, but also is of highest importance when it comes to mental and emotional well-being or efficiency in professional and everyday life. An individual characterized by a low level of physical fitness is incapable of performing many social roles. In other words, he/she becomes a socially useless individual. This in turn might cause lowering of one's self-esteem and problems with proper functioning in a society. The improvement of motor skills and one's fitness level are believed to create an opportunity for a longer independent life [5].

Physical fitness constitutes the fundament of many important life functions. Its assessment, however, with the use of motor skills tests, even if supplemented with an efficiency and bodybuilding control, cannot be treated as an indicator of a proper course of physiological functions. The result analysis should include the assessment of the processes and phenomena important from the vantage point of health. The aim of the research is to make a diagnosis which is to increase people's consciousness about the importance of a proper attitude towards their own bodies [3].

THE AIM OF THE WORK

The aim of the work is to analyse and compare test results concerning specific motor skills of 1st year physiotherapy and pharmacy students of Medical University in Lublin.

MATERIALS AND METHODS

The research was conducted on a group of 54 (male and female) 1st year physiotherapy and pharmacy students of Medical University in Lublin; the number includes 10 males and 17 females for both test groups. A pilot test on a group of 12 was conducted in order to eliminate possible factors of negative influence (focus on a proper warm up; shoes dampening to improve their attachment to the surface) which may affect the test results.

The research tool was a test of motor skills assessment by Stefan Pilicz supplemented by the test of strength drawn from the battery of tests by Denisiuk Ludwik, which for years has been exercised at the beginning and the end of physical education at the Medical University of Lublin. Determining of the level of individual physical fitness of students at this stage of students' lives is treated as an evaluation of the effectiveness of this education. The research tested 4 motor skills: agility, power, strength and endurance. The test included: 3m×5m timed run as an agility test, long jump as a power test, and as an endurance test an exercise that included: a propped-up knee bend conducted from a standing position, 2-legged throw to the back, return to the standing position, accompanied with a clap over one's head. Power and strength tests were conducted 3 times and

the best results were taken into consideration. Agility and endurance tests, as requiring a lot of effort, were conducted only once. The biggest advantage of Pilicz test is its simplicity and a low amount of time required. Its drawback is the lack of trial tests for endurance and coordination skills assessment [6].

In consequence, Ludwik Denisiuk's endurance test nr 4 was included in research. The test consists in a knee bend from a standing position, 2-legged throw to the back, return to knee-bend position, and then to a standing position accompanied with a clap over one's head. The test is assessed on the basis of the number of completed cycles (30 sec. for women, 1 min for men).

The research was supplemented with the data collected from a questionnaire. The questionnaire consisted of questions concerning the role of the physical activity in the lives of examined students. The results were collected and analysed with the use of proper statistic functions of Excel program.

THE TESTS RESULTS

The physiotherapy students represent a higher level of motor skills than the students of pharmacy, the disparity being of about 20 points for each of the skills. In the case of physiotherapists similar results were achieved for each skill: strength test scored the highest, then agility, power and endurance tests. When it comes to the pharmacy students, the strength test scored best results; the second result was

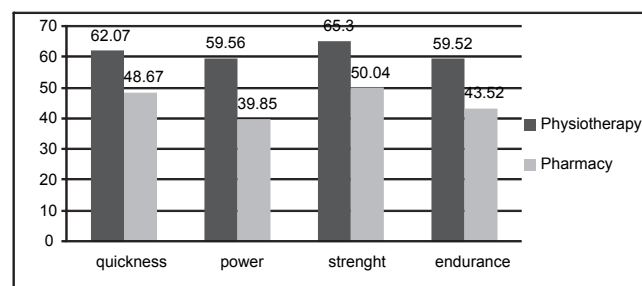


FIGURE 1. Comparison of the average scores of particular motor skills of physiotherapy and pharmacy students

scored by agility test. Results of the endurance and power test were significantly lower when compared with those of the physiotherapy students (Figure 1).

The Table 1 presents the highest and lowest results achieved by the students during particular tests in points. One can easily spot a significant disparity in the level of motor skills of students. The disparity between the minimal value for strength, which is the weakest motor skill of pharmacy students, reaches 23 points. The maximum value for endurance shows the discrepancy of 30 points to the advantage of the future physiotherapists.

TABLE 1 The comparison of the average results of Pilicz test.

Subject	Agility test		Power test		Strength test		Endurance test	
	min-max	arithmetic mean	min-max	arithmetic mean	min-max	arithmetic mean	min-max	arithmetic mean
Physiotherapy	34 – 70	62.07	41– 81	59.56	39 – 85	65.30	42 – 84	59.52
Pharmacy	20 – 63	48.67	18 – 55	39.85	35 – 70	50.04	28 – 54	43.52

The disparity of 63.37 points proves that physiotherapy students represent much higher level of physical fitness (Figure 2).

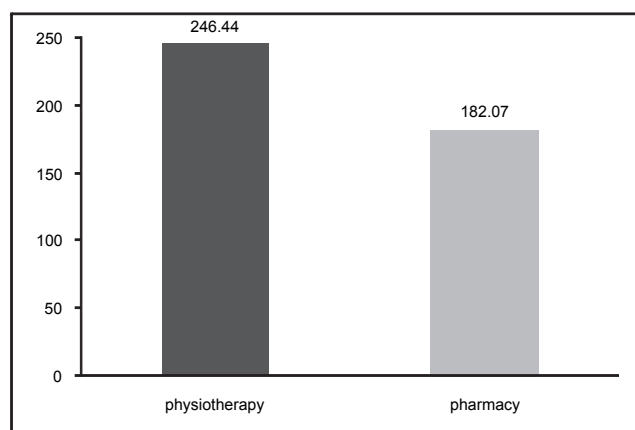


FIGURE 2. General physical activity according to the Pilicz test

The information achieved from the questionnaire provides an explanation to the test results. Even though all students realize the influence of physical activity on one's health, few back up their words with actions. The role of physical activity in the lives of physiotherapy and pharmacy students is presented in the Figure 3.

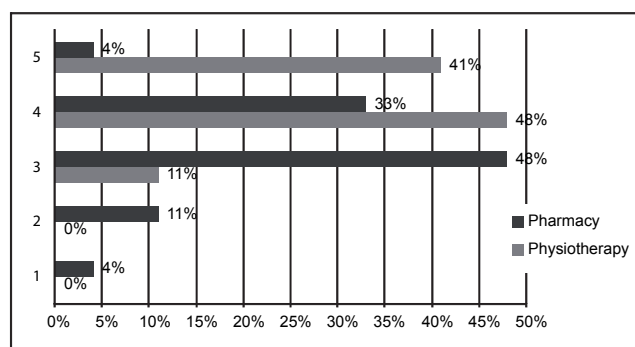


FIGURE 3. The role of physical activity in the lives of physiotherapy and pharmacy students

All physiotherapy students stated that apart from obligatory physical exercises classes they do some extra physical activity. When it comes to pharmacy students, only 59% admit to do some additional exercises, and only 41% of them attend the obligatory PE classes once a week.

The Figure 4 shows the frequency of the exercises done during the week.

The average duration of the physiotherapy students' exercise: 30% of the surveyed admitted to exercise for about 15-30 min, 19% do a 30-40 min. exercise, 15% claim to exercise 45-60min, and 37% of physiotherapists admit spending more than 60 min. on exercising.

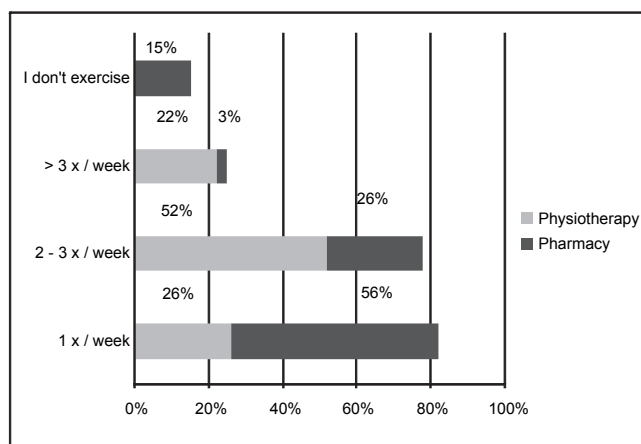


FIGURE 4. The frequency of the exercises done by physiotherapy and pharmacy students.

In the case of would-be pharmacists the situation presents itself differently: 11% of future pharmacist do the exercise only for 15 min., 33% admit to exercise for 45-60min. and 22 of them do exercise for more than 60 minutes.

When it comes to the reasons for an active lifestyle, the future physiotherapists state that they do exercise because of a need to stay active, out of pleasure or to improve one's physical fitness. In the case of pharmacist the most important goal is to reduce the level of stress or to shape body. The health-related aspect of physical activity is rated much lower (Figure 5).

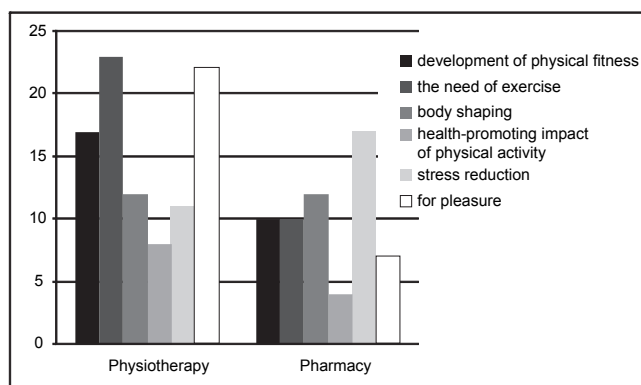


FIGURE 5. The motives inducing physiotherapy and pharmacy students to develop physical activity

The answer to the question of how important it is to be physically fit when considering the choice of profession is presented in the Figure 6.

DISCUSSION

A higher level of physical fitness of the physiotherapists stems from the fact that fitness tests are required in the enrollment process. Additionally, the course of the studies and the character of future job itself makes it necessary to keep a high level of fitness. In the course of physiotherapy studies, a special emphasis is placed on shaping students' physical fitness, and sick leaves are accepted only in an emergency.

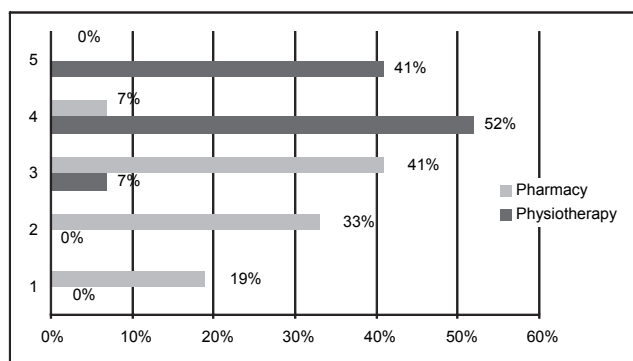


FIGURE 6. The relevance of physical activity in the student's future job.

CONCLUSION

The analysis of the test results shows:

- 1st year physiotherapy students at MU of Lublin represent a higher level of physical fitness than pharmacy students.
- Physical activity is more important for physiotherapy than pharmacy students.
- Physiotherapy students take extra exercise more frequently than the students of pharmacy and devote more time for them.
- Physiotherapy students carry on an active life out of need for movement, for pleasure, or to improve one's physical fitness. Pharmacy students are physically active because they want to reduce stress.
- For physiotherapy students physical activity plays more important role when taking their future professions into consideration than for pharmacists.

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