

CHRONIC PAIN AMONG MALE STUDENTS OF PHYSIOTHERAPY

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Keywords:

- chronic pain,
- quality of life,
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- students.

Abstract:

Introduction: Chronic pain concerns people of all ages – also young people. The objective of this study is to characterize pain occurring in students of physiotherapy.

Materials and methods: 104 students participated in the surveys. 42 of them declared chronic pain. The VAS pain assessment scale and the authors' survey were study tools. Differences were calculated using the T-student test for independent groups, assuming $p \leq 0.05$ as a minimum significance level.

Results: The general result on the pain scale was 3.55 (± 1.84). Three people reported pain intensity at level 8 (on a scale of 10 points). Pain intensity was significantly lower in physically active people ($p < 0.001$) and former athletes ($p < 0.01$). Most frequently people (18 people) experienced pain in the lumbar spine. Other body parts were indicated significantly rarer.

Conclusion: Chronic pain of the motor apparatus occurred in 30% of students regardless of age or body mass.

INTRODUCTION

According to the definition of the World Health Organization (WHO) health is not only the lack of disease or disability, but also a condition of complete, physical, mental and social well-being (good mood) [10]. A complete superior value is the greatest good and the main purpose in life of many people. Despite activities undertaken by doctors and physiotherapists encouraging us to conduct healthy and active life style, the number of people who are physically active is still small. Every fourth person in the United States and every third person in Poland maintains an active life style [6, 12]. People not only are not active, but they do not mind their physical condition, either. They do not feel the need to improve their fitness level. Studies conducted by the Central Statistical Office of Poland in 2009 regarding the health of Poles indicate that regardless of an improving subjective assessment of health conditions, 55% of adults (above 15 years of age) suffer from long-term health problems. More than one fifth of Poles complain about back pain [11]. Among young women and men spinal diseases are the third most frequently occurring disease [12]. Results of studies conducted by the European Community Health Indicators show that nearly every third person complains about long-term pain or health problems both in Poland and in the entire European Union (EU) [19].

Prevention of pain of the motor apparatus is appropriate physical activity. Physical activity continued throughout life beneficially impacts appropriate muscle tension, strength and endurance. Among factors causing chronic pain some authors also list overload caused by sports activities, which may lead to microinjuries. However, they are not the main cause of the above mentioned health problems [18, 21]. Nevertheless, overload of the human motor system, forced body posture, as well as exposure to harmful biological and chemical factors

faced at work can negatively impact our health. Pain of the motor apparatus occurs both in people who work physically, as well as in people who are not physically active. Recently pain episodes have been reported by younger people [7].

The main cognitive objective of the study was to characterize pain occurring in men studying physiotherapy at the Medical University of Warsaw.

MATERIAL AND METHODS

One hundred and four men studying physiotherapy at the Medical University of Warsaw (Bachelor degree – n=95 and Master’s degree – n=45) participated in the surveys. Participation in the study was voluntary and anonymous. It was conducted between 2010 and 2014. From the group of students who participated in the study 42 people reported chronic pain – they were qualified into the study group (Tab. 1). The analysis of the results was conducted considering division into groups, where the criteria were as follows: study degree (Bachelor-Master’s), the BMI height-weight ratio indicating appropriate or increased body mass (below 24.99 – above 25), regular organized physical activity at least twice a week (active – non-active) and doing sport in the past (athletes – non-athletes). Detailed biometric characteristics of the students, considering division into subgroups were presented in Table 2.

Table 1. Profile of research groups

	Number of people [n]	Age [years]	Body height [cm]	Body mass [kg]	BMI [kg/m ²]
Group 1 (students with pain)	42	20.76 ±2.41	180.52 ±7.99	80.07 ±13.16	24.52 ±3.26
Group 2 (students without pain)	98	21.82* ±2.63	180.51 ±7.06	79.01 ±12.33	24.19 ±3.18

* p<0.05

Tab. 2. Profile of studied persons (divided into subgroups)

		Number of people [n]	Age [years]	Body height [cm]	Body mass [kg]	BMI [kg/m ²]
Level of study	I degree	29	19.51	77.17	180.55	23.64
	II degree	13	23.53***	86.53*	180.46	26.47*
BMI	18.5-24.99	29	20.21	75.44	181.55	22.86
	+25	13	22	90.38**	178.23	28.21***
Former athletes	yes	16	20.43	80.41	180.93	24.55
	no	26	20.96	79.86	180.26	24.51
Physical activity	yes	20	20.85	79.82	180.35	24.49
	no	22	20.68	80.29	180.68	24.55

* p<0.05; ** p<0.01; *** p<0.001

The VAS Visual and Analogue Pain Scale was a study tool. Each participant could indicate the intensity level of pain on a scale from 1 to 10 points. A lower value means a better condition of the studied person [14]. Additionally the authors’ survey including biometric data and information regarding the location of pain and experienced injuries was conducted. The participants also assessed their health and fitness on a scale of 1-5.

Developing the materials standard statistical tools were used – an arithmetic average and a standard deviation. Dependencies between features were determined using Person’s correlation. Differences between particular sets of data were calculated using the T-student test for independent groups. The minimum significance level was assumed as p≤0.05.

RESULTS

Among the surveyed students at least one injury (excluding them from work for at least a week) was reported by 27 people (64%) from Group 1 and 32 (33%) from Group 2. An

average number of injuries was 1.97 per person in Group 1 and 0.85 in Group 2. The students who did not experience chronic pain (Group 2) assessed their health ($p<0.001$) and fitness ($p<0.01$) significantly higher (Fig. 1).

An average level of pain declared by the students from Group 1 was 3.55 (± 1.84). Three people declared pain intensity at level 8 (on a scale of 10). They were the highest results. The minimum result (1 point) was observed in case of 7 people.

Pain intensity was significantly lower in physically active people ($p<0.001$). Also former athletes were characterized by a lower level of pain than people who do not work out ($p<0.01$). There were no significant differences in pain intensity among the remaining subgroups. Considering the subjective assessment of health and fitness there were no significant differences between subgroups. Only overweight people ($BMI > 25$) assessed their physical activity significantly lower ($p<0.01$) (Tab. 3).

Most frequently pain was experienced in the lumbar spine (18 people). Other body parts were mentioned significantly rarer – eight people declared pain of the thoracic spine or the chest and knee joint. Five participants indicated shoulder pain, and four – foot pain, hip pain and cervical spine pain. Pain within the upper extremity was experienced sporadically. There were no significant differences observed within locations of pain in particular subgroups. It is worth paying attention to the fact that people who are not physically active indicated more pain locations (1.45 per person) than active people (1.15) (Tab. 4).

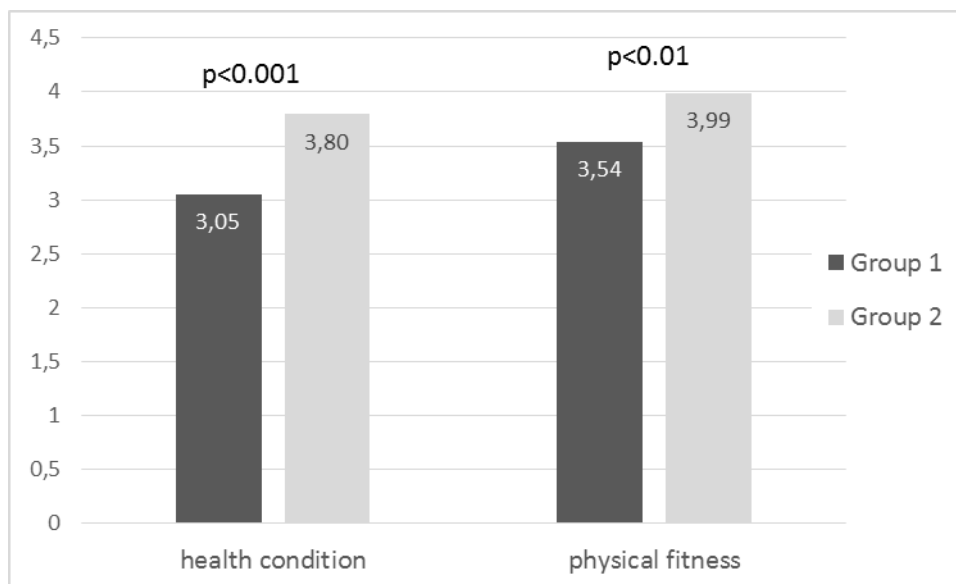


Figure 1. Subjective assessment of health condition and physical fitness.

Table 3. Level of pain and assessment of health condition and physical fitness in subgroups

		Number of people	Pain	Assessment of health condition	Assessment of physical fitness
Level of study	I degree	29	3.51	3.01	3.64
	II degree	13	3.61	2.92	3.31
BMI	18.5-24.99	29	3.79	3.17	3.75
	+25	13	3.00	2.77	3.07*
Former athletes	yes	16	2.75	3.25	3.56
	no	26	4.04*	2.92	3.52
Physical activity	yes	20	2.60	3.15	3.63
	no	22	4.41**	2.95	3.45

* $p<0.05$, ** $p<0.01$

Table 4. Location of pain

		foot & calf	knee	hip	low back	thoracic spine & chest	cervical spine	shoulder	elbow	wrist & hand
Level of study	I degree	3	5	3	13	8	3	3	1	1
	II degree	1	3	1	5	0	1	2	0	2
BMI	18.5-24.99	4	5	3	12	6	4	4	1	2
	+25	0	3	1	6	2	0	1	0	1
Former athletes	yes	2	5	2	5	3	1	4	0	0
	no	2	3	2	13	5	3	1	1	3
Physical activity	yes	1	3	2	8	5	0	4	0	0
	no	3	5	2	10	3	4	1	1	3

DISCUSSION

Pain is a subjective and individual sensation. It can be different in nature and intensity. Most frequently pain involves the lumbosacral spine. Pain episodes of the above mentioned locations are experienced by approximately 80% of society. They are experienced more frequently by young and active people, and their intensity and frequency increase with time [9, 15, 16, 17]. The authors' study confirm that the lower part of the back is one of the most frequent locations of chronic pain.

Among risk factors regarding occurrence or intensification of spinal pain the following are included among others: postural defects (e.g. scoliosis) leading to improper load transfer, arthrosis, sedentary lifestyle, being overweight and obesity, as well as excessive physical activity, overloading work and overload of the motor apparatus [2, 8, 13].

Pain is a subjective and individual sensation. It can be different in nature and intensity. Pain of the motor apparatus involves young people more and more frequently, and its intensity and frequency increase with time. In the authors' own studies, including 140 people aged 19-26, 30% of participants declared experiencing chronic pain. Numerous publications confirm the frequency of the reported incidents [3, 9, 19, 22].

Less than half of participants from Group 1 declared physical activity in their free time. The above mentioned dependencies are also confirmed by other studies, both regarding students, as well as physiotherapists [1, 4, 5]. Considering the constantly decreasing level of physical activity and fitness of young people the issue of chronic pain may intensify in the future.

CONCLUSIONS

1. Chronic pain of the motor apparatus occurred in one third of students regardless of age and body mass.
2. Most frequently pain was experienced in the lumbar spine.
3. Pain intensity was related to physical activity, which may confirm the negative impact of immobility on the functional condition of the motor apparatus.

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