

ORIGINAL ARTICLE

Physical activity and life satisfaction of students of physiotherapy and physical education at the close of the COVID-19 pandemic

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ABSTRACT

Aim: To learn and compare their level of physical activity (PA) and motivation declared by physical education students and future physiotherapists, as well as to evaluate their life satisfaction in the final phase of the pandemic of the COVID-19 pandemic.

Materials and Methods: A survey study covered 211 respondents (106 students of physical education (PE) and 105 future physiotherapists). The anonymous survey consisted of standardized questions regarding the level and goals of physical activity (IPAQ-SF and IPAO) and life satisfaction (SWLS).

Results: A high level of PA was demonstrated by 51.5% of men and 48.6% of women – 83.1% and 75.9% students of physiotherapy and physical education, respectively. Family was a determinant that did not motivate the students to take up physical activity. There was a better atmosphere in the professional environment encouraging physical activity in the group of PE students (3.19±1.28) than among future physiotherapists (2.82±1.28) ($p<0.001$). Future physiotherapists declared lower level of life satisfaction. In this group, the SWLS score was 23.5±5.95 compared to 25.4±5.45 among PE students.

Conclusions: At the close of the COVID-19 pandemic, the specificity of PE and physiotherapy studies as well as gender are variables that had a significant impact on the resumption, type and motives for undertaking physical activity and improving life satisfaction. PE students' perception of the importance of physical activity is more pronounced than that of future physiotherapists, which is a strong enough factor to increase their life satisfaction.

KEY WORDS: students, physical education, physiotherapy, physical activity, life satisfaction

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INTRODUCTION

Since the outbreak of the COVID-19 pandemic, it has become clear that the coronavirus infection will leave indelible traces on the development of the entire civilization, and its effects will be felt for a long time [1]. The pandemic not only caused enormous loss of life around the world and posed an unprecedented challenge to health care and education systems, but also radically changed the way of life of millions of people [2]. This "Novel Coronavirus Disease" has had a significant impact on social, economic and health issues, changing lifestyle habits and redefining priorities (WHO) [3]. Globally, the urgent need to cope with daily concerns related to the pandemic has resulted in partial or complete interruptions of healthcare services [4]. Rehabilitation services, including health resort therapy, were disrupted, even though rehabilitation plays a decisive role in recovery from severe illness caused by the SARS-CoV-2 virus. The pandemic may provide an impetus to rethink the role of health resort therapy and rediscover its function as an "essential service" [5]. The beneficial effects of this therapy, especially through balneotherapeutic interventions, on diseases of the musculoskeletal system, lungs, circulatory system and skin, are well known [6]. Moreover, health resort therapy has a positive effect on mood, sleep quality and life satisfaction in general [7].

During the pandemic, virtually every person has faced restrictions in their lives. Educational institutions were forced to switch to remote teaching, which resulted in financial, technical, methodological and even psychological problems [8]. Higher medical education and fields such as physical education were particularly affected. While remote learning was possible in humanities and social sciences, in medical sciences, health sciences and physical culture sciences, it turned out to be extremely problematic due to their practical profile [9]. For higher education entities, including those educating physiotherapists and physical education teachers, the need for emergency implementation of e-learning tools to conduct remote teaching has become a challenge. In these fields, practical classes were difficult or even impossible to conduct, which caused additional concerns. Given the above, the pandemic has aroused great interest in analyzing the impact of this crisis on the

lifestyle of the entire population, and in particular on the student community [10].

The period of studies is the most favourable time for shaping the next stage of human development. However, students are one of the most vulnerable groups due to additional risk factors of a critical situation (poor nutrition, reduced life satisfaction, sedentary lifestyle, unknown course of the disease, social isolation) that may lead to deterioration of health during the pandemic [11]. A positive attitude towards taking up physical activity, which increases the fitness and functional capabilities of the body, becomes the foundation of a healthy lifestyle during the student period [12]. The COVID-19 pandemic has led to social isolation and, consequently, reduced physical activity [13]. Students, especially PE students and future physiotherapists, are the target group that most likely experienced major changes in everyday life during the crisis situation related to the pandemic [14]. Due to the specificity of their activities and PA level, students of these fields are considered role models for a healthy lifestyle. The COVID-19 pandemic has had a negative impact on general (mass) sport and competitive (professional) sport and its participants: athletes, coaches, trainers and instructors [15]. The level of physical fitness, and thus the condition of competitors, decreased. As a result, the financial profits of both players and coaches melted away. Also the possibilities of participating in sports competitions diminished, especially that it was time to prepare for the Olympic Games – a milestone in an athlete's career.

Physiotherapy and physical education students noticed many barriers, for example, in the organization of their classes: the inability to take part in practical activities, live demonstrations of physiotherapeutic methods and motor exercises by lecturers [16]. Students' physical activity during isolation was mostly based on their previous experience in performing exercises and the knowledge of a healthy lifestyle. This helped them to adapt to the isolation regime, maintain the optimal level of physical activity and life satisfaction. During the pandemic, physiotherapy students were more aware of the nature of the disease, the need for protection and the rules of physiotherapeutic tasks when dealing with sick people [17].

The return of sport activity after the "coronavirus holidays" was a reason to wonder how much the pandemic will affect the industry and the return of habitual physical activity. All representatives of the sports world were waiting for the quick resumption of the usual way of organizing events. At the same time, expert assessments did not provide clear forecasts about the time of full recovery of the sports sector affected by the consequences of the COVID-19 pandemic. Also, the health effects of this still new and not fully understood infection have not yet been sufficiently researched and recognized.

Physical activity and the related life satisfaction are the earliest responsive measures of health behaviours that reflect the dynamics of life activity and adaptation to changes in external environment [10]. Due to the fact that PE students and future physiotherapists are representatives of educational areas significantly affected by anti-pandemic restrictions, and because they know how to regain the appropriate level of physical activity, the authors considered it justified to conduct research in this group in the final phase of the pandemic.

AIM

The main objective of this study was to assess the PA level and motivation declared by students, as well as to evaluate their life satisfaction at the close of the COVID-19 pandemic.

MATERIALS AND METHODS

The cross-sectional study was conducted in the period of October-November 2022 as part of an international multi-centre research project, in which the consequences of the COVID-19 pandemic were recognized as the main factors influencing the lives of students. Before starting to complete the questionnaire, all participants were informed about the objectives, methodology and anonymous, confidential nature of the study. An invitation to participate in the online survey was disseminated through targeted advertising, including the e-learning platform (Moodle), Microsoft Teams and university social networks. The respondents gave their informed consent to participate in the survey, and thus to provide sociodemographic data (gender, field of study, place of residence, etc.). The research tool was the Polish version of generally accepted standardized questionnaires. The inclusion criteria were as follows: consent to participate in the study, providing all answers to the survey questions, and no contraindications to engage in physical activity, including health contraindications related to the COVID-19 disease.

STUDY PARTICIPANTS

The sociological research was conducted among students of Physiotherapy and Physical Education from several partner universities in Eastern Poland. In total, there were 211 respondents, including 105 future physiotherapists (Group 1) and 106 future PE teachers (Group 2) from the universities in Biała Podlaska and Białystok. Among the representatives of both groups, the majority were men: 66.7% and 72.6%. The students generally lived in a large city. The age of the respondents did not differ statistically between the groups (22.8 ± 2.23 vs. 22.9 ± 2.0 years).

STUDY DESIGN AND PROCEDURE

A diagnostic survey method was applied using several research tools. They were used to assess the level of physical activity. The International Physical Activity Questionnaire – Short Version (IPAQ-SF) consists of seven questions regarding the type of physical activity in everyday life over the last seven days and time devoted to intense and moderate physical activity, walking and sitting. The level of physical activity is presented in MET-min/week (metabolic equivalent of 1 MET is defined as the amount of oxygen consumed when sitting at rest. This equates to 3.5 ml O_2 per kg body weight/min). For walking, the MET value is equal to 3.3, during the moderate activity it is 4.0, and

for intense activities the number is converted by the MET value of 8.0. According to the IPAQ scoring protocol, there are three levels of physical activity, i.e. low, moderate and high [18]. In the study, internal consistency for the IPAQ-SF questions – Cronbach's alpha was 0.745.

The next questionnaire – Inventory of Physical Activity Objectives (IPAO) was developed by M. Lipowski and Z. Zaleski (2015) [19]. It consists of five modules containing questions to asses such variables as: variety of forms, volume, and frequency of physical activity. For 12 goals, the Likhert scale (1-5) is provided, and the respondent is asked to determine the extent to which the selected PA goals are important. Ultimately, the following scales were distinguished: 1) motivational value (the strength with which goals influence an individual to take actions); 2) time management (the level of focus on planning, organizing and devoting time to PA); 3) perseverance in action (effectiveness and durability of actions and coping with adversities); 4) motivational conflict (the level of contradiction: physical activity goals vs. other goals). Cronbach's alpha was used to verify internal consistency of the questionnaire; it was 0.902 for IPAO.

The Satisfaction with Life Scale (SWLS) developed by Diener et al. [20] includes five statements with which respondents agree or disagree in relation to their life. The score generally indicates life satisfaction manifested by a sense of satisfaction with one's achievements. Internal consistency was 0.844 (Cronbach's alpha).

The study was conducted in accordance with the Declaration of Helsinki. The Bioethics Committee of the Medical University of Białystok, Poland (Resolution number: APK.002.1932.2022) approved the protocol of the study. A permission to conduct an anonymous survey among the students was obtained from the authorities of the universities participating in the research. The authors of the survey did not collect any identifiable information from the participants.

STATISTICAL ANALYSIS

Statistical analysis was performed using Statistica 13 (Tibco Inc., USA). The Shapiro-Wilk test was applied to assess the normality of distribution. Arithmetic mean (M), median (Me) and standard deviation (SD), as well as Q_{75}-Q_{25} and interquartile range (IQR) were calculated. Difference analysis was conducted using the independent samples t-test or non-parametric Mann-Whitney U test, depending on the normality of distribution. Pearson's chi-squared test was used for comparative assessment. Correlations between qualitative variables were calculated using the Spearman's correlation coefficient, which measures the strength and direction of the relationship between variables. Interval estimation of statistical parameters was determined using the 95% confidence interval. A significance level of $p < 0.05$ was assumed in all analyzed cases.

RESULTS

Taking into account the purpose and methodology of the study, the analysis of the results began with determining the levels of physical activity demonstrated by students of physiotherapy and physical education – in accordance with the IPAQ-SF methodology (Table 1).

More than half of the students demonstrated a high level of PA. Among physical education students, this percentage exceeded 80%. Among the future physiotherapists there were students with a low level of PA, which was not the case among the students from Group 2. The strength of the relationship between group membership and the level of physical activity was at the level of Spearman's average correlation (r=0.34, p<0.05). The PA level for both groups was 4289.4±3635.0 MET-min/week. The division of PA levels by group membership and gender is presented in Table 2.

The results of the analysis of weekly time devoted to PA indicate that intense physical activity for 3 days and more was rarely declared by the respondents (only by 42.9% of future physiotherapists and by 73.6% of physical education students). Moderate PA undertaken at least 3 times a week was declared by 68.6% of the respondents from the first group and by 81.1% of the respondents from the second group. Walking was the third type of analyzed activity. This activity was indicated by 90.5% and 95.3% of the respondents, respectively.

The total level of PA by field of study and gender is presented as percentage in Fig. 1. Assuming that gender may determine the level of PA, it was found that a higher percentage of men met the IPAQ-SF criteria for the highest level of PA – over half of the male respondents from the first group and 83.1% from the second group.

Table 1. The level of physical activity in students from both groups (IPAQ-SF)

PA Levels	Groups		Total (N=211)	Mann-Whitney test Groups 1 vs 2	p
	Students - future physiotherapists (Group 1) (N=105)	Physical education students (Group 2) (N=106)			
	N (%); 95-percent confidence interval - 95%CI			U (Z)	
Low	12 (11.4); 5.3-17.2	0	12 (5.7); 5.0-6.4	3739 (-4.12)	<0.001
Moderate	40 (38.1); 28.8-47.4	20 (18.9); 11.5-26.4	60 (28.4); 22.3-33.4		
High	53 (50.5); 40.9-60.0	86 (81.1); 73.7-88.6	139 (65.9); 59.5-72.3		

Table 2. Descriptive statistics of the main types of PA in students from both groups, taking into account gender

Physical Activity	Group	Gender	M±SD	Me, IQR	Group total, M±SD, Me, IQR	U-Mann-Whitney test, U; p	
Intensive	Physiotherapy students (1)	Male (3)	1475±1971	960, 1520*	1347.4±1226.7, 720, 1320	3711.5; $p_{(1-2)}$ <0.001	NS
		Female (4)	1091±1345	640, 480**			
	Physical education students (2)	Male (3)	2467±2070	2400, 2560	2233.9±1484.7, 1920, 2480		832.5, $p_{(3-4)}$ <0.05
		Female (4)	1614±1491	1440, 1920			
	Total			1793±1921, 1200, 2400			
Moderate	Physiotherapy students (1)	Male (3)	878±1409	420, 780*	879.4±829.8, 400, 760	3679.5; $p_{(1-2)}$ <0.001	NS
		Female (4)	882±1302	360, 960**			
	Physical education students (2)	Male (3)	1382±1473	840, 1200	1258.9±893.2, 840, 1200		NS
		Female (4)	932±776	800, 720			
	Total			1070±1360, 600, 900			
Walking	Physiotherapy students (1)	Male (3)	1093±1056	660, 594*	1137.1±938.8, 660, 660	3965.1; $p_{(1-2)}$ <0.001	NS
		Female (4)	1226±1514	693, 968**			
	Physical education students (2)	Male (3)	1653±1949	924, 1485	1713.7±1367.6, 924, 1480		NS
		Female (4)	1874±2060	1040, 1386			
	Total			1427±1791, 792, 924			
Total physical activity	Physiotherapy students (1)	Male (3)	3446±3883	2027, 3320*	3363.6±2470.7, 2175, 3157	3276.5; $p_{(1-2)}$ <0.001	NS
		Female (4)	3199±2598	2346, 3612**			
	Physical education students (2)	Male (3)	5503±3628	4810, 3451	5206.5±2659.0, 4327, 3491		NS
		Female (4)	4420±3271	3960, 2586			
	Total			4289±3635, 3246, 4121			

*Note: *Groups: physiotherapy students (1) and physical education students (2). **Groups: male (3) and female (4); p-test probability value calculated using the Mann-Whitney test. Differences by gender are statistically significant (p<0.01).*

Among the women, 48.6% of physiotherapy students and as many as 75.9% of physical education students had a high level of PA. The same ratio (1:1.6) was typical for men.

The goals of physical activity were analyzed using the IPAO. At the beginning, the respondents answered questions about their current and past competitive sports. Only 50.5% of physiotherapy students and 93.4% of physical education students declared that they currently practice competitive sports. In the past, such activity involved an additional 24.0% of physiotherapy students and 6.6% of PE students. This was confirmed by a significant relationship between the practice of competitive sports and group membership (r=0.48, p<0.05).

At the close of the pandemic, an atmosphere in the respondents' family was encouraging (mobilizing) for physical activity. However, this level can be described as low – 2.87±1.24 points (with the maximum possible grade of 5.0) among physiotherapy students and 2.98±1.17 among physical education students (p>0.05). In the professional environment, an atmosphere was more encouraging to take up physical activity in the group of PE students (3.19±1.28) than among future physiotherapists (2.82±1.28) (p<0.001). At the close of the pandemic, good conditions for physical activity, availability of fitness clubs and natural conditions for practice were declared at a level of more than 3.0 points out of 5.0 (similar values for physiotherapy students 3.36±1.28 vs. 3.51±1.30 for PE students (p>0.05)). Generally, as expected, a higher level of activity-related behaviours was presented by physical education students.

The respondents were also asked to indicate to what extent (on a scale from 1 to 5), the goals of physical activity are important to them. Statistical differences in the choice of goals treated as a priority by PE students compared to the first group of respondents were as follows: physical fitness, good condition, slim figure (beauty, appropriately "ripped" body and body firmness), pleasure from physical activity, escape from everyday life and satisfying the need for exercise. This also included PA as a health-promoting behaviour by setting a good example, which is very important from the educational perspective (Table 3).

Care for health was indicated as the main goal of engaging in physical activity (41.9% and 28.3%, respectively). The second important goal was the pursuit of physical fitness and good condition (15.2% and 24.5%, respectively), the third place was taken by the pursuit of aesthetics through a slim figure (beauty, appropriately "ripped" body and body firmness) (12% each), and the fourth priority – well-being (15.2% and 10.4%, respectively). As for gender, women from group 1 more frequently chose physical activity for maintaining and care for health. In the case of female PE students, the following goals turned out to be important: building self-esteem, gaining recognition in the eyes of others and promoting PA by setting a good example, also escaping from everyday life and relieving stress. No

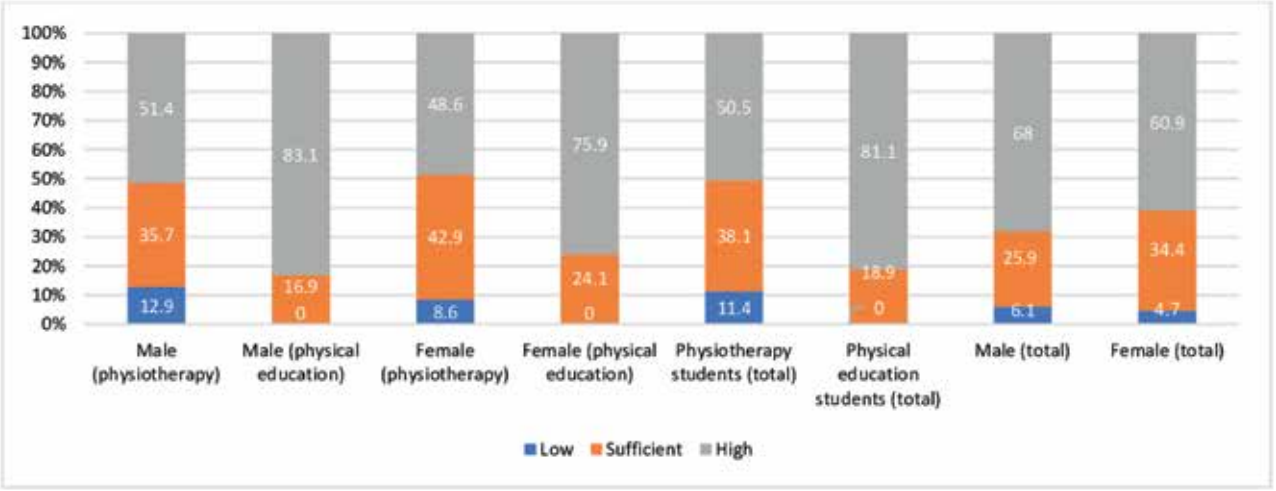

Fig. 1. The level of PA was classified as low, moderate and high by gender for both groups (%).

statistically significant relationships were found between the field of study and: time management (planning and organizing time for physical activity); perseverance in action (effectiveness of actions and coping with difficulties encountered during physical activity); or motivational conflict – the level of contradiction between the selected goal and other goals. Only the motivational value – the strength with which goals influence the activities undertaken by an individual – differentiated the students; the value was higher in physical education students (Table 4).

SATISFACTION WITH LIFE SCALE (SWLS)

The results of the SWLS scale reveal that PE students were the most satisfied with life. In this group, the score was 25.4±5.45 (Me=26.0) and it was statistically higher than that of future physiotherapists (23.5±5.95) (Me=24.0). Extreme dissatisfaction with life or its high degree was recorded in a small number of cases (not exceeding 5%). A neutral answer, i.e. neither dissatisfaction nor satisfaction with life, was noted in 7.1% of the respondents. Moderate and high life satisfaction was reported in 33.2% and 27.0% (among PE students this value is the highest and amounts to 28.3% vs. 34.9%; among the men and women from group 1 – 38.1% vs. 19.9%. A shortened three-level scale of life satisfaction with division into low, medium and high is presented in Table 5.

In group 1, the score was more favorable in women. Students from group 2 obtained higher results compared to their peers from group 1, but the outcomes did not differ significantly depending on gender. The average life satisfaction for all students was 24.4±5.77 (Me=25). The maximum life satisfaction was declared by more than half of the respondents (58.2%); among physical education students this value reached 64.2%. A slightly lower value was found in group 1 (52.4%). Differences between groups were statistically significant and resulted mainly from differences between men ($p<0.01$).

DISCUSSION

The paper presents the results of the assessment of the level of physical activity and motivation declared by students of physiotherapy and physical education at the close of the COVID-19 pandemic. The authors also determined the level of life satisfaction of the respondents. Adults and adolescents, who meet the minimum physical activity criteria of 150 minutes of moderate activity or 75 minutes of vigorous activity per week, are less likely to experience health problems (physical and mental) compared to those who do not meet these criteria [21]. The results of the study show that the majority of the respondents, regardless of their field of study, are sufficiently active and try to maintain the optimal level of physical activity. However, every tenth physiotherapy student did not meet the criteria for moderate or high PA level. According to Cooper, this may indicate that physical activity, as a coping technique and protective mechanism, can contribute to reducing the likelihood of experiencing, among others: sadness and mental disorders in stressful situations [22]. In our opinion, this is especially important in post-pandemic times, when modern society is struggling with numerous problems with physical and mental health, especially in the population of young people [23].

Given the above, there is an increasing interest in research on the motivation to engage in physical activity and being physically active. Motivation can be most simply defined as the tendency of people to do something for a purpose. According to Ryan and Deci [24], motivation corresponds to the state of energization and activation of the body in a social context and is perceived as a multidimensional construct characterized not only by intensity, but also the type of motive [25]. The study focuses on the motivation for engaging in physical activity. Good conditions and motivation to engage in physical activity were declared at the level of 3.0-3.5 points out of 5.0 (with a predominance of PE students). No statistically significant differences were found between the field of study and time management, persistence in action and motivational conflict. Only the motivational value – the strength with which goals influence the activities undertaken by an individual – differentiated the students; the value was higher in physical education students. The authors of this

Table 3. Prioritization of physical activity goals among the respondents

Purpose of using physical activity	Group, M±SD (Me)				Total		Mann-Whitney test, U (Z)	P (<)
	Group 1		Group 2					
	Male (N=70)	Female (N=35)	Male (N=77)	Female (N=29)	Male (N=147)	Female (N=64)		
1. Health (right levels of: blood pressure, cholesterol, body mass, etc.)	3,60 ±1.31 (4.0)	4,20±0.96* (4.0)	3,95±1.22 (4.0)	3,83±1.17 (4.0)	3,78±1.27 (4.0)	4,03±1.07 (4.0)	5237 (-0.7)	0,46
	3,80±1.24 (4.0)		3,92±1.20 (4.0)		3,86±1.22 (4.0)			
2. Physical fitness, being 'in shape'	3,73±1.26 (4.0)	3,97±1.01 (4.0)	4,09±1.18 (4.0)**	4,14±0.99 (4.0)	3,92±1.23 (4.0)	4,05±1.0 (4.0)	4664 (-2.0)	0,04
	3,81±1.19 (4.0)		4,10±1.13 (4.0)		3,96±1.16 (4.0)			
3. Company of other people	3.43±1.22 (4.0)	3.40±1.29 (4.0)	3,61±1.29 (4.0)	3,69±1.11 (4.0)	3,52±1.26 (4.0)	3,53±1.21 (4.0)	5029 (-1.2)	0,23
	3,42±1.24 (4.0)		3,63±1.24 (4.0)		3,53±1.24 (4.0)			
4. Fit, shapely body (beauty, sculpted and firm body)	3,56±1.26 (4.0)	3,86±0.97 (4.0)	4,05±1.13 (4.0)**	4,07±0.84 (4.0)	3,82±1.22 (4.0)	3,95±0.92 (4.0)	4456 (-2.5)	0,01
	3,66±1.18 (4.0)		4,06±1.06 (4.0)		3,86±1.13 (4.0)			
5. Wellbeing	3,84±1.11 (4.0)	4.23±1.0 (4.0)	4,09±1.09 (4.0)	4,24±0.83 (4.0)	3,97±1.10 (4.0)	4,23±0.92 (4.0)	5084 (-1.1)	0,28
	3,97±1.09 (4.0)		4,13±1.02 (4.0)		4,05±1.06 (4.0)			
6. Being physically active and fit according to fashion	2,89±1.36 (3.0)	2,66±1.28 (3.0)	2,99±1.47 (3.0)	3,34±1.14 (3.0)***	2,94±1.42 (3.0)	2,97±1.26 (3.0)	4938 (-1.4)	0,16
	2,81±1.33 (3.0)		3,08±1.39 (3.0)		2,95±1.37 (3.0)			
7. Boosting confidence, gaining appreciation from others	2,84±1.35 (3.0)	2,37±1.17 (3.0)	2,94±1.33 (3.0)	3,34±1.23 (3.0)***	2,89±1.34 (3.0)	2,81±1.28 (3.0)	4728 (-1.9)	0,06
	2,69±1.30 (3.0)		3,05±1.31 (3.0)		2,87±1.32 (3.0)			
8. Pleasure from physical activity	3,50±1.33 (4.0)	4,03±1.01 (4.0)	4,01±1.13 (4.0)**	4,03±1.05 (4.0)	3,77±1.25 (4.0)	4,03±1.02	4692 (-2.0)	0,05
	3,68±1.25 (4.0)		4,02±1.10 (4.0)		3,85±1.19 (4.0)			
9. Escape from everyday life	3,21±1.31 (3.0)	3,34±1.19 (3.0)	3,57±1.14 (4.0)	3,97±1.02 (4.0)***	3,40±1.23 (4.0)	3,62±1.15 (4.0)	4506 (-2.4)	0,02
	3,26±1.26 (3.0)		3,68±1.12 (4.0)		3,47±1.21 (4.0)			
10. Managing stress	3,59±1.19 (4.0)	3,60±1.19 (4.0)	3,62±1.20 (4.0)	4,03±1.05 (4.0)***	3,61±1.19 (4.0)	3,80±1.14 (4.0)	5147 (-0.9)	0,35
	3,59±1.18 (4.0)		3,74±1.17 (4.0)		3,66±1.18 (4.0)			
11. Fulfilling the need for activity	3,39±1.33 (4.0)	3,89±1.08 (4.0)	3,95±1.09 (4.0)**	4,00±0.96 (4.0)	3,68±1.24 (4.0)	3,94±1.02 (4.0)	4590 (-2.2)	0,03
	3,55±1.27 (4.0)		3,96±1.05 (4.0)		3,76±1.18 (4.0)			
12. Promoting PA by setting a behaviour example	2,93±1.35 (3.0)	3,06±1.21 (3.0)	3,56±1.22 (4.0)**	3,72±1.0 (4.0)***	3,26±1.32 (3.0)	3,36±1.16 (4.0)	4048 (-3.4)	0,001
	2,97±1.30 (3.0)		3,60±1.16 (4.0)		3,29±1.27 (3.0)			

*Note: *differences in the group by gender are statistically significant (p<0.05); **differences in groups by gender (men) are statistically significant (p<0.05); ***differences in groups by gender (women) are statistically significant (p<0.05).*

original methodology claim that greater knowledge about the purposefulness of activities among physical education students supports and shapes additional individual motivation by setting new, realistic goals [19].

Life satisfaction affects well-being. During the COVID-19 pandemic, students were exposed not only to changes related to online education, loss of interaction with peers and social ties, but they also faced the inability to participate in practical classes. There are concerns and research evidence that the consequences of the pandemic could seriously impact students' life satisfaction. This is confirmed by the results of the research conducted by Herbert et al. [26] during the first wave of the

Table 4. Interpretation of the four modules according to the theory of motivational function of goals

Modules	Group, M±SD (Me)				Total		Mann-Whitney test, U (Z)	P (<)
	Group 1		Group 2					
	Male (N=70)	Female (N=35)	Male (N=77)	Female (N=29)	Male (N=147)	Female (N=64)		
Motivational value	3,80±0.82 (3.75)	3,65±0.86 (3.6)	4.11±0.71 (4.3)**	3.88±0.79 (4.0)	3.97±0.78 (4.0)	3.76±0.84 (3.9)	4349 (-2.74)	0,01
	3,75±0.84 (3.75)		4,05±0.74 (4.25)		3.90±0.80 (4.0)			
Time-management	3,41±0.90 (3.4)	3,17±0.99 (3.0)	3.64±0.82 (3.6)	3.43±0.88 (3.6)	3.53±0.86 (3.4)	3.28±0.95 (3.2)	4791 (-1.75)	0,08
	3,33±0.93 (3.40)		3,58±0.84 (3.40)		3.46±0.89 (3.40)			
Persistence in action	3,12±1.0 (3.0)	2.73±0.92 (2.7)*	2.90±1.03 (2.7)	2.93±1.0 (3.0)	3.0±1.02 (3.0)	2.82±0.96 (2.8)	5217 (0.78)	0,43
	2,99±0.99 (3.0)		2,91±1.02 (2.83)		2.95±1.0 (3.0)			
Motivational conflict	3,46±0.80 (3.5)	3,44±1.21 (3.5)	3.77±1.01 (4.0)	3.5±0.95 (3.5)	3.62±0.96 (3.5)	3.47±1.09 (3.5)	4895 (-1.51)	0,13
	3,46±0.99 (3.5)		3,69±1.0 (3.5)		3,58±1.0 (3.5)			

*Note: *differences in the group by gender are statistically significant (p<0.05); **differences in groups by gender (men) are statistically significant (p<0.05).*

Table 5. SWLS scores for the three groups of students

Groups of Students	Gender	SWLS (Points)	SWLS		
			Low	Moderate	High
		M±SD (Me)	Scores n, (%)		
			5-17	18-23	24-35
1	Male	23.0±6.14 (24.0)*	10 (14,3)	24 (34,3)	36 (51,4)
	Female	24.6±5.47 (24.0)	3 (8,6)	13 (37,1)	19 (54,3)
	Total	23,5±5.95 (24.0)	13 (12.4)	37 (35.2)	55 (52.4)
2	Male	25.4±5.61 (26.0)	6 (7,8)	22 (28,6)	49 (63,6)
	Female	25.3±5.52 (25.0)	2 (6,9)	8 (27,6)	19 (65,5)
	Total	25,4±5.45 (26.0)	8 (7.5)	30 (28.3)	68 (64.2)
Total	Male	24.2±5.96 (25.0)	16 (10,9)	46 (31,3)	85 (57,8)
	Female	24.93±5.31 (24.5)	5 (7,8)	21 (32,8)	38 (59,4)
	Total	24,4±5.77 (25.0)	21 (10.0)	67 (31.8)	123 (58.2)
$p_{[male\ [1,\ 2]} < 0.01\ p_{[female[1,\ 2]} > 0.05; p_{[total[\ 1,\ 2]} < 0.01$					

*Note: *differences in the group by gender are statistically significant (p<0.05).*

pandemic and lockdown in 2020. According to the authors, compared to the studies conducted before the pandemic, low levels of life satisfaction, depression and anxiety were significantly more evident. Similar results were reported in other countries affected by lockdown [27]. Our study adds an important perspective to the discussion on satisfaction of physical education students and medical students with life after the COVID-19 pandemic. Therefore, further research is needed to assess the impact of physical activity on young people's personal and professional life satisfaction and their desire to optimize physical activity in a targeted way.

CONCLUSIONS

The COVID-19 pandemic has had a negative impact on the level of physical activity and the sense of life satisfaction. At the close of the COVID-19 pandemic, the specificity of the fields of study, i.e. PE and Physiotherapy, and gender turned out to be variables having a significant impact on the resumption, type and reasons for undertaking physical activity, and consequently improving life satisfaction. PE students' perception of the importance of physical activity was more pronounced than that of physiotherapy students, which is a strong enough factor to increase life satisfaction in this group of students.

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CONFLICT OF INTEREST
The Authors declare no conflict of interest

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