Original Article

doi: 10.16926/par.2022.10.26

Working conditions of physical education teachers in European higher education institutions

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Authors' Contribution: A – Study Design, B – Data Collection, C – Statistical Analysis, D – Manuscript Preparation, E – Funds Collection

Abstract

***Aim*:** One of the problems of modern higher education is the so-called "New core curricula", which oblige PE teachers to make many changes in the way they work. PE teachers face several restrictions to provide PE programs that improve students' physical fitness, cognitive development, and overall health. The research aimed to investigate the working conditions of university PE teachers in selected European tertiary institutions. *Materials and Methods:* The quantitative research employed purposive sampling. Five academics volunteered to collect information on 66 European tertiary institutions located in Poland, Slovakia, Serbia, Hungary, Czech Republic, Slovenia, Turkey, Spain, Montenegro, Croatia, Bosnia & Hercegovina, Finland and Kosovo. Quantitative data were collected using questionnaires with a set of questions concerning characteristics of tertiary institutions and various aspects of working conditions of university PE teachers. *Results:* Two thirds of the university PE teachers held master's degree in PE since in over 42% of surveyed institutions, a master's degree in physical education was required to conduct PE classes. The majority of PE teachers (84.4%) were employed full-time, and on average worked 38.6 days in an academic year. Significantly more PE teachers with masters and doctoral degrees ($p = 0.012$) were employed full-time, or fixed term in public, middle size HEIs ($p < 0.001$). In HEIs in cities with less than 500,000 residents, PE teachers were more often encouraged for participation in CPD ($p = 0.049$). Significantly more public HEIs fully or partially covered the costs of CPD or conferences ($p < 0.001$), whereas in non-public or small HEIs significantly more PE teachers had to finance the costs of CPD. Moreover, significantly more ($p = 0.037$) universities implemented specific PE teachers' evaluation criteria with a personal record of their achievements. *Conclusion:* There is a pressing need to improve qualifications of university PE teachers, as many European HEIs do not support PE teachers in CPD. Furthermore, lack of CPD opportunities, low salaries and lack of career promotion perspectives combined with lower psychological resilience, may result in professional burnout syndrome.

Keywords: physical education, university teachers, working conditions, higher education, European tertiary institutions, qualifications

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Recevied: 04.04.2022; Accepted: 30.04.2022; Published online: 6.07.2022

Cite this article as: Podstawski R, Zurawik M, Borysławski K, Omelan A, Tsos A. Working conditions of physical education teachers in European higher education institutions. Phys Act Rev 2022; 10(2): 111-126. doi: 10.16926/par.2022.10.26

INTRODUCTION

Physical activity (PA) is an important element of public health, and the benefits of an active lifestyle together with its effects on human health have been strongly emphasized around the world [1,2]. The scientific evidence supporting the importance of PA for health and well-being has been extensively documented [3-6] and there is little question that physical education (PE) plays an important role in public health because it involves most people ranging in age from children to young adults [7-9]. Unfortunately, the increasingly poor physical and health conditions of young people in Europe may increase, already very high, cost of treating diseases resulting from a lack of PA [10]. According to the World Health Organization [11], the cost of physical inactivity accounts for 1-3% of national health care costs, which was estimated at $54 billion per year in 2013.

During the first years of life shaping of health-seeking attitudes, including habits related to being physically active is primarily a parents' responsibility. However, in later years, a part of this responsibility is taken over by the school, which is tasked with developing lifelong PA habits in children, primarily through PE classes, which are compulsory in all primary and lower secondary schools [12].

For young people who choose not to enter higher education, leaving high school means the end of systemic participation in PA. While, for university students, the education system has one last chance to influence their attitudes towards PA. Indeed, the transition from secondary school to higher education is considered critical because this is often when, from a public health perspective, behaviors and lifestyles of young people change dramatically for the worse [13]. This change is linked to, among other things, poor eating habits and a reduction in the amount of PA that is performed by young people [14-16].

In Europe, there is no single model for student participation in PE in HEIs. In the United Kingdom, for example, many universities have sports centers which students can join if they wish and either exercise individually or take a class. In Poland, for a comparison, all students must successfully complete two semesters of obligatory PE classes, with the option for choosing a form of PA to be taken with instructors [8,9]. Nearly every Polish public tertiary institution has within its structure a Department of Physical Education and Sport, employing university PE teachers and coaches[1][18]. Contrastingly, in Slovakia, many HEIs do not organize PE classes for students; according to Buková et al., [19], PE is a compulsory subject at 13 out of 27 faculties at technical universities and at only 9 out of 78 humanities faculties. Similarly, Piscer, Pavlović and Szabo [20] reported that, in Croatia, PE courses are offered at 14 out of 32 institutions.

Taking into account the expectations of university PE students and looking at it from a social perspective, PE teachers at HEIs should have an adequate education and good, stable working conditions, as well as the opportunity to continuously improve their professional competence [21]. From the sociological point of view, the extent and the level at which tertiary PE teachers can perform their duties is important, as this can contribute to improving the quality of life of many citizens. However, opposing to the situation in primary and secondary education, it is difficult to find national or European large-scale strategies and initiatives aimed at improving PA of young adults in tertiary education. Moreover, although PA of university students from different countries around the world is well researched [22-26], there are no studies that present the situation of academic staff responsible for PA in HEIs worldwide. This might be due to the marginalization of PE, which should be considered one of the main problems of contemporary higher education [8,9].

The 'new core curriculum' defined new rules for the implementation of physical education curricula in European higher education and forced PE teachers in HEIs to make many changes in the way they work. These new procedures resulted from the need to modify PE curricula and gave

[1]These units were established by the decision of the Council of Ministers in 1951 [17]. Analyzing the history of the Department of Physical Education and Sport activity, it must be stated that the scope of the units' activities in the area of students' physical culture has been systematically limited by successive ministers responsible for higher education. This not only weakens the position of the teacher, but also leads to pauperization and degradation of this profession.

teachers the freedom to do so. However, the lack of clear guidelines and the guidelines' flexibility make it difficult to interpret the recommendations of the core PE curriculum in higher education [27-29].

Moreover, PE teachers in HEIs face the need to look for their own solutions to implementing the "new core curricula", and this could lead to many problems [30]. The idiosyncrasies of PE as a teaching subject mean that none of the published curricula, despite the best intentions of the authors, can meet the needs of all HEIs since these institutions differ in terms of the conditions and environment in which PE programmes are delivered, as well as in access to sports facilities and equipment. Such differences are undoubtedly key factors in choosing or limiting the types of PA that can be offered to students [31-33]. PE teachers in tertiary education face institutional, student-related and teacher-related restrictions that limit what their PE programs can provide [34-37]. The institutional barriers include budget constraints, scarce resources, reductions in the time provided in the curriculum, the absence of professional development, the crowded curriculum itself, and the lack of facilities and equipment [7,18,32,35]. The student-related barriers include low motor fitness levels of PE participants [38-41] that potentially lower student engagement, discourage students from taking part in PA. Other student-related barriers are lack of intrinsic and extrinsic motivation and the socioeconomic status of students [42].

The main teacher-related barrier is a total workload of PE teachers, which tends to be high due to dual teacher-coach roles. Furthermore, in many countries, PE teachers face excessive administration procedures and paperwork, as well as extracurricular duties, such as coaching school sport teams or organizing after-school activities [43-46]. Another teacher-related restriction involves the continuing professional development (CPD). CPD refers to many types of learning experiences that allow a person to apply new knowledge and skills that improve their on-the-job performance. Many fields require employees to participate in ongoing professional development approved by the profession, sometimes as a requirement to keep their jobs. CPD is vital in the teaching profession. One way to encourage CPD and to maintain the PA of PE teachers at an appropriate level is to engage in essential recreational activities that provide physical and mental regeneration. Engaging in recreational activities may provide not only the opportunity to improve professional qualifications, but also much needed regeneration, due to both the nature of the activities themselves and the change in environment connected with engaging in these activities.

The need for regeneration is particularly important in the context of depression, emotional exhaustion and burnout syndrome, which are often experienced by PE teachers. These problems are caused by prolonged overexertion, due to the high intensity of school activities, and various other stress factors [47]. Burnout syndrome is characterised by emotional exhaustion, depersonalisation and low levels of personal accomplishment [48]. It can be caused by lack of job satisfaction and/or the reaction of the organism to chronic emotional stress resulting from the collapse of processes that could enable adaptation the work environment [49].

In this context, the importance of a lack of systematic knowledge of the working conditions of PE teachers, trainers, or instructors in HEIs can be seen. Therefore, to address this gap in literature, there is a need for more information on the working conditions of PE teachers in higher education. The comprehensive objective of the present study was to examine the competences, working conditions and CPD of PE teachers in European HEIs.

MATERIALS AND METHODS

General Approach

This study explored the working conditions of PE teachers in European higher education, by employing a quantitative methodology. The quantitative approach uses questionnaires to provides a numeric description of some fraction of a research population by asking questions [50]. Questionnaires are a suitable method for collecting data from research participants in an unobtrusive manner, whilst reducing researcher bias [50]. The strength of this quantitative approach lies in collecting structured quantifiable data from collection of institutions that are known to be representative. In addition, this method allows information to be measured and compared.

Instrument and Procedures

A purposive sampling method was employed to recruit participants, which involved selecting people that would produce the most valuable data for the research. Therefore, an invitation for research collaboration was issued to academics attending the 16th Annual Scientific Conference of the Montenegrin Sports Academy, entitled 'Sport, Physical Activity and Health: Contemporary Perspectives' in Dubrovnik, Croatia. The selection of the place of recruitment of the study participants was not accidental: one of the conference sections was attended by researchers active in the discipline of physical culture (in which Physical Education, the subject of our research, is located), and universities from different regions of the world were well represented. In order to avoid excessive dispersion of the results and to stay within one cultural circle, the request for research assistance was addressed only to representatives of European countries. Furthermore, academic peers who worked at various European research and teaching centres were contacted via the researchgate.net platform.

The forty-seven academics who agreed to participate in the study were told that participation required answering all questions using data that they had collected from PE programs in at least 10 European tertiary institutions by the end of February 2020. All respondents were informed that participation was voluntary, and withdrawal was allowed at any time.

In this study, anonymous and confidential questionnaires with 15 closed-ended questions and two open-ended questions were used. The questionnaires had the same set of written questions, which were in a predetermined order and concerned the characteristics of tertiary institutions (size, profile, type, number of students, number of teachers/instructors), and the working conditions of the PE teachers (types of employment contracts, number of teaching hours, level of qualifications, employee evaluation systems, types of support and availability of CPD).

In total, out of forty-seven initial participants, only five academic peers completed and returned the questionnaires. All the researchers were from Poland and one person currently works in the UK. These individuals conduct regular research on physical activity, including student physical culture. The participating academics collected information on 66 tertiary institutions hosting 798,181 students, located in Poland (24), Slovakia (8), Serbia (7), Hungary (6), Czech Republic (5), Slovenia (4), Turkey (4), Spain (3), Montenegro, Croatia, Bosnia & Hercegovina, Finland, and Kosovo (1 in each country).

This research was performed with the prior consent of the Ethical Committee of the University of Warmia and Mazury in Olsztyn, Poland (No. 39/2011).

Data Analysis

Data were analysed with emphasis on types of tertiary institutions (public vs private, and universities vs other institutions). Data in the text are given as means ± standard deviations. The differences between means were analysed using Student's *t*-test for independent variables. The relationships between nominal (category) features were analysed using the chi-square test. The gamma (γ) coefficient, which is similar to Pearson's r but appropriate for ordinal variables, was also calculated. Statistical analyses were performed using Statistica 13.0 pl. Results were accepted as statistically significant at $p<0.05$.

RESULTS

The surveyed HEIs employed from 1 to 50 (mean = 12.26) PE teachers with various qualifications. In most HEIs, the number of teaching hours was variable and depended on the position of the PE teacher in the academic hierarchy. The number of holiday days accrued yearly by full-time PE teachers varied greatly (from 25 to 90 days of holidays) and averaged 38.6 days (Table 1).

Two thirds (67.3%) of the PE teachers held master's degrees in physical education, and 25% of them had obtained a coaching specialization. Six percent of the teachers had completed a course for personal trainers or PE instructors. Only 1.6% had a doctoral degree. The majority of the teachers (84.4%) were employed full-time, 11% were employed part-time, and 2% had fixed-term employment contracts for an academic semester or a year.

Table 1**.** Characteristics of the quantitative features concerning PE teachers.

Feature	N	Mean	min-max	SD
How many PE teachers, trainers, instructors, etc. are employed at your HEI	819	12.26	1-50	10.23
How much annual leave are full-time PE teachers are entitled to?	66	38.62	25-90	8.71

In over 42% of the surveyed HEIs, a master's degree in PE was required to conduct classes with students; in a third of the institutions, a bachelor's degree was sufficient. In a quarter of the surveyed institutions, an academic degree together with physical recreation instructor course, or personal trainer courses were acceptable qualifications for the PE teachers. Contrastingly, 3% of the HEIs did not require any qualifications in physical education.

In 68.2% of the surveyed institutions, CPD was required. However, a third of the respondents did not participate in CPD. In 38.3% of the HEIs, which required continued training of the PE teachers, the most frequent method of CPD was participation in conferences and practical training courses. A third of the institutions considered scientific publications or obtaining a trainer or instructor diploma as acceptable methods of improving qualifications.

Thirty-nine HEIs (59.1%) had an employee performance appraisal system. More specifically, in 42.8% of the HEIs, PE teachers were assessed based on their teaching activities; 31.1% HEIs evaluated teachers' performance on their organizational activities, and 26.1% HEIs based the teachers' appraisal on their scientific activities. In 30 of the institutions (41.1%), CPD qualifications were reported in the employee appraisal systems, and thus affected teachers' income. Nonetheless, 40.9% HEIs did not have employee performance appraisal systems, and in a third of the surveyed HEIs, CPD did not bring any financial benefits to the PE teachers.

Regarding factors motivating participation in CPD, the largest share of PE teachers (41.1%) reported that receiving points for CPD in their employee evaluation system, which translated into increased earnings, was a significant motivating factor. Almost 20% of the PE teachers were motivated to participate in CPD in order to meet the requirements of the relevant Ministry of Higher Education. Around 8% reported that the desire to improve their teaching skills was a motivating factor. Notably, 31.5% of the PE teachers reported lack of motivation for participation in CPD.

In almost half of the cases, the HEIs covered up to 50% of the costs related to participation in CPD or conferences. Almost a third of the HEIs covered the entire costs of training for their employees, yet 21.4% did not provide any funding for their employees (Table 2a).

In a quarter of the surveyed institutions, the teaching load was 360 academic hours. However, in some extreme cases, it ranged from 90 to over 600 academic hours. In most of the institutions, the number of teaching hours varied depending on the position of the university PE teacher in the academic hierarchy.

The survey showed that there were different levels of professional career path for university PE teachers in HEIs, and the most popular one (41.3%) provided the following career progression levels: instructor, lecturer, senior lecturer. Regrettably, over a quarter of HEIs did not offer opportunities for promotion for their academic employees. In some cases, in order to be promoted, university PE teachers had to be employed for a specific period of time (28.7%). However, in over 21% of the HEIs, promotion was decided based on informal professional and nonprofessional relationships. In 16.9%, promotion was based on anonymous evaluation by the students; in 13.1%, on sports achievements; and in 11.2%, on organizational activities. It is worth noting that obtaining a PhD led to promotion in only 6.9% of the HEIs.

Over 47% of the HEIs did not spend any funds on the purchase of sports equipment for their employees. However, in 36.4% of the surveyed institutions, university PE teachers received annual funds for purchasing the necessary equipment for conducting PE classes, and 16.6% of the HEIs provided such equipment (Table 2b).

Table 2a. Characteristics of the PE teachers employed at HEIs.

Questions	Category	N	%
1.What qualifications and level of education do PE teachers have?	PhD in physical education with a specialization in teaching	13	1.6
	MA in physical education with a specialization in teaching	551	67.3
	MA in physical education with a specialization in coaching	205	25.0
	Diploma / Certificate recreational instructor, personal trainer, etc.	50	6.1
2. What are PE teachers' employment contracts?	Full-time employment	692	84.4
	Part-time employment	91	11.2
	Fixed term contract (e.g. for 1 year)	36	4.4
3. * Do PE teachers at your HEI require…?	BA in the field of physical education (coaching, tourism and recreation, rehabilitation)	28	28.9
	MA in the field of physical education (coaching, tourism and recreation, rehabilitation)	41	42.3
	MA in any field of science and instructor diploma/ certificate (e.g. fitness, volleyball)	25	25.8
	Do not require degree but require instructor diploma/ certificate (e.g. fitness, volleyball)	3	3.0
4. Do HEI employees need to improve their qualifications?	No	21	31.8
	Yes	45	68.2
5. * If "YES" - in what way they improve their qualifications?	Participating in training courses / conferences	44	38.3
	Obtain the title of trainer	21	18.2
	Obtain the title of instructor	17	14.8
	Research work (doctoral dissertation, writing publications, etc.)	33	28.7
6. * What motivates academic employees for CPD?	Nothing	23	31.5
	Extra points for employee evaluation system (e.g. incentive bonuses, higher earnings)	30	41.1
	Requirements of the Ministry of Education	14	19.2
	Improvement of teaching skills	6	8.2
7. * What is the level of financial support for participation in conferences / training / courses related to CPD?	Fully covered by the HEI	23	32.9
	Partially covered by the HEI (state what percentage)	32	45.7
	Fully covered by the teacher	15	21,4
8. Is there a special teacher evaluation system at your HEI, in which a teacher has a personal account with a record of achievements?	No	27	40.9
	Yes	39	59.1

$N_{teachers}$=819, $N_{universities}$=66, * multiple choice possible

Table 2b. Characteristics of the PE teachers employed at HEIs.

Questions	**Category**	**N**	**%**
9. What is the teaching load (the number of teaching hours in the academic year) for the PE teacher (in full-time employment)?	90-180	4	6.1
	200-350	12	18.2
	200-560	4	6.1
	360	17	25.7
	360-540	7	10.5
	440-600	10	15.2
	480-960	10	15.2
	Over 600	2	3.0
10. * What are the basis for PE teachers' evaluation (choose several options)?	Didactic (related to the didactic load)	51	42.8
	Organizational (sport sections, organization of competitions)	37	31.1
	Scientific (publications, participation in scientific conferences)	31	26.1
11. * What are the stages of professional career at your HEI?	None	19	25.3
	Instructor > trainer	2	2.7
	Instructor > lecturer > senior lecturer	31	41.3
	Lecturer > assistant > special assistant > associate professor > professor	19	25.3
	Instructor > assistant	2	2.7
	Lecturer > senior lecturer	2	2.7
12. * What are the requirements for PE teachers' promotion (describe each promotion starting from the lowest in a few sentences)?	A length of employment	46	28.7
	Sport achievements	21	13.1
	Organizational activities (e.g. organizing sport competitions)	18	11.2
	Informal professional and nonprofessional relationships	34	21.3
	The anonymous assessment by students	27	16.9
	Increasing of professional qualifications	11	6.9
	Nothing	3	1.9
13. Are full-time PE teachers permitted to spend HEI money on purchasing sports equipment for their personal use?	No	31	47.0
	Yes	24	36.4
	Receive equipment from the university	11	16.6

$N_{teachers}$=819, $N_{universities}$=66, * multiple choice possible

To compare working conditions of the PE teachers in European higher education, the data were divided into three equal groups based on the HEIs' profile and number of students, and the population of the local city (Tables 3–7). Only statistically significant relationships are shown in the tables.

There was a significant association between the size of the city and whether the PE teachers were required to improve their qualifications (Table 5). In HEIs in cities with less than 500,000 residents, PE teachers were required to participate in CPD more often than in HEIs in cities with more than 500,000 residents ($p = 0.049$).

The size of the HEI was significantly associated with the terms of employment, types of contracts (Table 4) and the system of financing CPD (Table 6). In small HEIs (≤ 5,600 students), significantly more PE teachers were employed part-time or were given a contract for a fixed term (usually a semester), whereas in mid-sized institutions (5,601-12,500 students) PE teachers were more often employed full-time ($p<0.001$). PE teachers had to finance their participation in CPD

significantly more frequently in HEIs with less than 5,600 students than in larger institutions (p=0.005).

Generally speaking, conditions for PE teachers were more favourable in universities than in other types of HEIs. For example, in universities significantly more PE teachers were employed full-time or for a fixed term than in other types of HEIs (p=0.003; Table 4). Similarly, significantly more universities fully or partially covered the costs of CPD (p<0.001; Table 6). Furthermore, universities significantly more frequently used evaluation criteria that included a personal record of the university PE teachers' achievements (p=0.037; Table 7).

The type of HEI (public vs private) was significantly associated with the level of the PE teachers' qualifications (Table 3), the type of contract (Table 4) and the system of financing CPD (Table 6). A significantly higher proportion on PE teachers had masters and doctoral degrees (p=0.012) and/or were employed full-time or for a fixed term (p<0.001) in public HEIs than in non-public ones. Furthermore, public HEIs significantly more frequently covered the costs of CPD in full or in part (p<0.001).

Table 3. Qualifications of PE teachers and the characteristics of the HEIs (*fo*- frequency observed, *fe*- frequency expected).

Feature		Dr or MA in PE with specialization in teaching N=564	Other forms of qualifications N=255
Type of institution χ^2=6.37, γ=0.12, *df*=1, *p*=0.012			
Public	*fo* *fo-fe*	522 +9.65	222 -9.65
Private	*fo* *fo-fe*	42 -9.65	33 +9.65

Table 4. Employment conditions at the HEIs (*fo*- frequency observed, *fe*- frequency expected).

Features		Employment conditions at HEIs			
		Full-time, definite time span contract n=692	Part-time contract n=91	Periodic contract n=18	Mandate contract for the given semester n=18
Size of the university (number of students) χ^2=26.89, γ=0.22, *df*=6, *p*<0.001					
≤ 5600	*fo* *fo-fe*	146 -21.30	35 +13.00	9 +4.65	8 +3.65
5601-12500	*fo* *fo-fe*	220 +23.13	7 -18.89	2 -3.12	4 -1.12
>12500	*fo* *fo-fe*	326 -1.83	49 +5.89	7 -1.53	6 -2.53
Profile of institution χ^2=8.56, γ=0.14, *df*=1, *p*=0.003					
University	*fo* *fo-fe*	550 +12.62	86 -12.62		
Other types	*fo* *fo-fe*	142 -12.62	41 +12.62		
Type of institution χ^2=55.77, γ=0.36, *df*=3, *p*<0.001					
Public	*fo* *fo-fe*	645 +26.08	64 -18.46	13 -3.31	12 -4.31
Private	*fo* *fo-fe*	38 -26.08	27 +18.46	5 +3.31	6 +4.31

Table 5. Do teachers employed at investigated universities need to improve their qualifications? (*fo*- frequency observed, *fe*- frequency expected).

Features		Do teachers employed at universities need to improve their qualifications?	
		Yes (n=45)	No (n=21)
Size of the city (number of inhabitants in thous.)χ^2=6.01, γ=0.42, *df*=2, *p*=0.049			
≤ 200	*fo* *fo-fe*	17 +2.00	5 -2.00
201-500	*fo* *fo-fe*	18 +2.32	5 -2.32
>500	*fo* *fo-fe*	10 -4,32	11 +4.42

Table 6.System of financing conferences / training / courses related to CPD (*fo*- frequency observed, *fe*- frequency expected).

Features		System of financing conferences / training / courses related to CPD		
		Fully covered by the employer (n=23)	Partially covered by the workplace (n=32)	Fully covered by the employee (n=15)
Size of the university (number of students) χ^2=10.48, γ=0.51, *df*=2, *p*=0.005				
≤ 5600	*fo* *fo-fe*	12 -6.07		11 +6.07
5601-12500	*fo* *fo-fe*	20 +1.93		3 -1.93
>12500	*fo* *fo-fe*	23 +4.14		1 -4.14
Profile of institution χ^2=12.22, γ=0.55, *df*=1, *p*<0.001				
University	*fo* *fo-fe*	44 +5.50		5 -5.50
Other types	*fo* *fo-fe*	11 -5.50		10 +5.50
Type of institution χ^2=20.41, γ=0.67, *df*=1, *p*<0.001				
Public	*fo* *fo-fe*	52 +5.64		7 -5.64
Private	*fo* *fo-fe*	3 -5.64		8 +5.64

Table 7. Is there a teacher's evaluation system with a personal record of their achievements? (*fo*- frequency observed, *fe*- frequency expected).

Features		Is there a teacher's evaluation system with a personal record of their achievements?	
		Yes (n=39)	No (n=27)
Profile of institution χ^2=4.33, γ=0.51, *df*=1, *p*=0.037			
University	*fo* *fo-fe*	39 +3.82	15 -3.82
Other types	*fo* *fo-fe*	8 -3.82	12 +3.82

DISCUSSION

PE in HEIs provides opportunities for students to improve their motor fitness, body composition parameters, cognitive development, and overall health [36, 51-53]. Much research on the anthropometric and motor characteristics of students in higher education suggested that among students who practiced various types of PA (martial arts, bodybuilding/fitness, volleyball, jogging with sauna, golf, general PE classes), those who practiced martial arts had the highest fitness levels [54]. Sequential studies have revealed that students enrolled in general PE classes, martial arts, jogging with sauna, and volleyball scored higher in most motor ability tests than students enrolled in other PE classes, which suggests that these types of activities were most beneficial for improving students' motor abilities [55,56].

Physical inactivity is a risk factor for lifestyle conditions, such as obesity and diabetes, which affect physical health and mental wellbeing [57]. The World Health Organization[11] recommends that adults between 18 and 64 years old should do at least 150-300 minutes per week of moderate-intensity aerobic physical activity or at least 75-150 minutes of vigorous-intensity physical activity or an equivalent combination of moderate- and vigorous-intensity activity.

Although, physical activity is globally promoted and knowledge about healthy lifestyles is widely available, 1 in 4 adults, including students in higher education, worldwide do not meet the WHO recommendations [58]. Many students struggle to make simple movements, let alone perform complex motor acts [22,59-61]. Therefore, PE teachers in HEIs are burdened with more responsibilities than ever, including preparation of curricula that motivate and engage students in PA, and develop their motor abilities [8,33].

Therefore, it is concerning that the present study found the lack of support from European HEIs for the PE teachers CPD with less than a third of HEIs were prepared to cover all the costs of CPD and less than half covered 50% of the cost. This situation adds to the persistent problem of how to help the students achieve higher levels of motor fitness if the teachers are not suitably equipped with strategies and professional development to guide the students' progress.

This should be considered an important problem because research in education has shown that quality teaching is one of the most important factors in raising student achievement. Also, there is a consensus that for teachers to be most effective, they must continually expand their knowledge and skills to implement educational best practices [62]. As Osborne et al. [32] suggested, PE teachers need to be appropriately qualified in order to implement a well-balanced curriculum that enables all students to improve their diverse skills and develop lifelong positive health habits.

The results of this study support previous research. For example, research study conducted in Greece showed that PE teachers were mostly dissatisfied with their low professional development prospects [63]. Similarly, in the United States, most federal districts spent between 1 and 3% of their school operating budgets on teacher education [64]. These amounts are far too low to produce satisfactory results. Over time, poor professional development can affect retention, and some teachers cite job dissatisfaction and limited career advancement opportunities as important factors in their decision to leave the profession [65].

National Staff Development Council in its Standards for Staff Development [66] recommended that school districts should allocate at least 10% of their budgets for staff development. I addition, at least 25% of educators' time should be devoted to learning and collaborating with colleagues, and at least 30% of the technology budget should be devoted to teachers' development.

Our study found that, in addition to a lack of financial support and opportunities for PE teachers' CPD, low salaries and lack of career advancement opportunities are additional factors that might lead to a loss of job satisfaction or burnout. According to Bezliudnyi, Kravchenko, Maksymchuk, Mischenko and Maksymchuk[67], the professional activity of PE teachers is characterised by high emotional intensity due to many stressors that affect their emotional state, such as high dynamics, lack of time, work overload, complicated teaching situations, role uncertainty, social evaluation, constant and intensive contact with students and colleagues, and interaction with different social groups. Brudnik's[49] study found that PE teachers' initial reaction to specific stress was a loss of job satisfaction. Loss of job satisfaction is being worsened by the decreasing number of PE hours in

curricula, and in extreme cases, the complete removal of the subject from the study program [9,18]. For instance, some European HEIs offer students a range of PE courses as electives [27,68,69], which is often for purely economic reasons rather than the desire to increase students' fitness levels, as elective PE tends to attract only students who are already physically active [70,71].

Other influences on teachers' job satisfaction and effectiveness of PE in HEIs can be divided into three major areas, involving the workplace, relationships and teacher rewards [72]. In terms of the workplace, lack of facilities and equipment has been reported to be one of the most significant barriers to retaining university PE teachers in Australia, the USA, Finland [73-75] and many other countries in Europe [9,29]. In terms of relationships, many PE teachers leave the profession because they encounter stress and dissatisfaction in the workplace [46]. Furthermore, Santini and Neto [76] suggest that PE teachers tend to suffer from complications of the vocal cords, headaches, and sinusitis, due to unfavourable working conditions.

The intensity of these factors, combined with lower psychological resilience, may result in professional burnout syndrome in some of PE teachers. According to Panagopoulos et al. [63],effective prevention of burnout involves a combination of organisational changes to support a healthier working environment, training in stress management and support for employees.

The results of the present study suggest that the rewards from teaching, such as promotion or monetary incentives, are very limited. These rewards can be divided into three categories: intrinsic, extrinsic, and ancillary. Intrinsic rewards are related to the value of helping students, the enjoyment of teaching activities, and personal and professional growth through teaching. Extrinsic rewards include salary, power and status [72]. Interestingly, the lack of career advancement opportunities for PE teachers in European HEIs affects not only extrinsic motivation, but to an even greater extent, intrinsic motivation because it transforms PE teachers into so-called *troupers* [77], i.e., teachers who stay in their positions but have lost their commitment and enthusiasm for teaching, and who tend to search for fulfilment and career possibilities outside higher education.

Strength and limitations

Strength of this study lies in its novelty; to the best of the authors' knowledge, it is the first piece of literature to present research on the working conditions of PE teachers in European HEIs. A clear limitation of this study was that it included a rather small sample of tertiary institutions other than universities, e.g., polytechnical institutions, colleges, pedagogical high schools, higher vocational schools and art schools. Furthermore, it must be acknowledged that the representation of the tertiary institutions in the different European countries was not uniform. The majority of the participating tertiary institutions were located in former Eastern Bloc countries, particularly Poland, where PE was obligatory and had been intensely promoted during Communist regimes. Thus, it is possible that the findings presented in our study could differ if all EU Member States were represented equally. Nevertheless, readers must acknowledge that that obtaining data on teachers' working conditions in various HEIs across Europe was very difficult and sometimes even practically impossible. Therefore, these results constitute a valuable first step towards conducting further research studies in the field of PA in HEIs. Our study can also provide interesting comparative material for similar studies in higher education as well as secondary and primary schools.

CONCLUSIONS

Our study indicates that PE has been marginalized in European tertiary education over the last decades. Furthermore, the coronavirus pandemic and subsequent lockdowns worldwide have forced many changes to modern-day lifestyles, including students. Home isolation and limited access to sports and recreational facilities have affected the area of physical activity [78]. Research studies conducted around the world suggests that during the coronavirus pandemic, students decreased their physical activity [79-81].

Therefore, strategies and curricula to improve the quantity and quality of PE in higher education globally should be intensified as soon as possible. Unfortunately, our research study demonstrated the contrasting state of matters in European HEIs. It showed that the working

conditions of PE teachers at European HEIs have been unfavorable, as many European HEIs do not support university PE teachers in their personal growth or CPD. The results presented here suggest that low salaries, a lack of CPD opportunities and career promotion prospects, and reduced psychological resilience may result in professional burnout syndrome.

Therefore, there is a pressing need, more than ever, to improve the qualifications and working conditions of PE teachers by improving European higher education policies and PE curricula. It is vital that European HEIs incorporate organisational changes to support a healthier working environment. Our study demonstrated three reasons for compulsory PE curricula in HEIs in Europe and worldwide. Firstly, it is important to reach inactive students and those with low levels of motivation for active participation in PA. Secondly, in order to achieve the first aim, it is vital to improve PE teachers' intrinsic and extrinsic motivations for the personal and professional growth through teaching by encouraging more frequent and better contact with larger numbers of students. The final recommendation is to offer much needed career advancement opportunities, support and guidance for PE teachers to help prevent career burnout.

ACKNOWLEDGMENTS

The authors would like to thank all the institutions that anonymously participated in the survey.

DECLARATION OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

FUNDING

This work was supported by the University of Warmia and Mazury in Olsztyn.

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