

A comparison of the perceptions and aspirations of third-year physiotherapy students trained in three educational settings in Poland

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Abstract

Objectives In Poland, physiotherapy is offered at three types of school: medical universities, universities of physical education, and schools that do not specialise in either the medical sciences or physical education. This study explored the knowledge of students who were completing their physiotherapy studies about working in Poland and other countries of the European Union (EU), and about their vocational plans. Students were asked, through self-assessment, about aspects of the professional skills they had gained.

Design Quantitative questionnaire-based study of students in three university settings.

Setting Eleven university-level schools in Poland offering studies in physiotherapy and representing three orientations: medical sciences (MS), physical education (PE) and other universities (OU).

Participants The study sample comprised of 954 third-year Bachelor programme students.

Results The differences in university profiles did not influence the vocational plans of the students, with more than 70% (668/954) declaring that they would look for work outside Poland: 76% (725/954) in the UK and 69% (658/954) in Germany. Most students stated that finding work as a physiotherapist is difficult in Poland (686/954, 72%) and easy in other EU countries (763/954, 80%). Differences in university profiles had an effect on the students' assessments of their professional skills, as students from universities without a long-standing tradition of training in physiotherapy declared that they were less well prepared to work as physiotherapists; the difference was statistically significant for 12 of the 16 domains examined ($P < 0.05$).

Conclusions In the light of these results, an increased influx of Polish physiotherapists, trained according to European standards, into EU countries, especially the UK and Germany, is to be expected in the near future. The physiotherapists will predominantly be graduates of medical and sports-oriented state universities. It appears advisable to launch, under the auspices of an EU programme, an integrated employment information system for physiotherapists that would offer updated information on current demand in individual EU countries.

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Keywords: Physiotherapy; Student; Educational model; Self-assessment; Employment; European Union

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Background

Choosing a study programme before entering university is one of the most important decisions in life because it usually determines one's future career path [1–5]. Many future students analyse their career prospects by looking at the social status of the occupation of their choice and the opportunities for career development [1–17].

There is considerable interest in studying physiotherapy in many countries of the European Union (EU) and the world. There are 67 universities offering degrees in physiotherapy in the UK, 14 universities in Australia and Canada, and as many as 186 universities in Japan, with the number of students in Japan having risen from 1500 in 1980 to 12 000 in 2006 [1–17].

According to data of the European Region of the World Confederation for Physical Therapy (WCPT) and 'The Summary of Physiotherapy Education within the National Educational System', published in 2005, the approximate number of new students entering physiotherapy programmes each year is 1800 in the Netherlands, 2500 in Italy, 2804 in the UK, 3200 in Spain and 9680 in Germany [18].

Similar trends can also be observed in Poland, as evidenced by the number of applicants and the growing number of university-level schools offering programmes for future physiotherapists. According to data from the Ministry of Science and Higher Education, more than 11 000 students commenced physiotherapy studies in as many as 150 university-level schools on 1 October 2008. In Poland's capital Warsaw alone, 2180 students entered the five universities offering first-cycle (Bachelor's) degrees in physiotherapy in October 2008 [19].

In Poland at present, physiotherapy is offered at three types of school: medical universities (MS), universities of physical education (PE), and schools that do not specialise in either the medical sciences or physical education (OU).

Educational profiles differ in teaching traditions, availability of highly qualified professionals, and access to modern educational and scientific means and tools. Master's and PhD programmes are not offered in all institutions.

MS in Poland train medical professionals primarily in professions such as medical doctor, dental practitioner, nurse, midwife, physiotherapist, pharmacist, laboratory analyst, emergency medicine specialist and public health specialist. They are located in major cities, financed chiefly by the state budget, have their own healthcare facilities, and carry out research in medicine and health sciences. The vast majority of research workers and/or university teachers working for them are employed on a full-time basis.

PE train professionals such as sports (physical education) teachers, sports coaches, fitness/wellness instructors and physiotherapists. Such universities are located in major cities, financed chiefly by the state budget, have their own sports facilities, and carry out research in sport-related sciences. Most of the research workers/university teachers working for them are employed on a full-time basis.

MS and PE have developed their degree programmes according to guidelines issued by WCPT and the European Network of Physiotherapy in Higher Education (ENPHE).

Moreover, schools that do not specialise in either the medical sciences or physical education also offer programmes for future physiotherapists. OU train students in a wide range of occupations. Of the medical and paramedical professions, training is offered in nursing care, emergency medicine, physiotherapy and public health. OU are located in provincial towns, financed by fees paid by students, and do not usually have their own healthcare or sports facilities. Practical training in medical and paramedical professions takes place at other institutions on the basis of appropriate agreements. OU usually offer full-time employment to a minimum number of university teachers as required by relevant standards of education in medical or paramedical disciplines, while for most teachers they are an additional place of work. OU offer their own degree programmes that are not always compatible with the guidelines of WCPT and ENPHE.

The rapid increase in the number of OU and a very well-developed system of extramural degree programmes that was launched in the late 1990s have been the result of changes in the system of training of physiotherapists. Physiotherapy as a university degree programme was first offered in Poland in 1997. In accordance with the provisions of the Bologna Declaration, only 3-year Bachelor-level and 2-year Master-level programmes were offered. Previously, physiotherapists trained at secondary vocational schools. This was discontinued in 2006; obtaining a university degree was not possible under that system.

While students graduating from all types of universities with different educational profiles achieve professional qualifications, the above-mentioned features can influence their assessment of their own professional skills and career preparation.

There were 10 000 physiotherapists in Poland in 2005 (5.5% unemployment rate at the time). At present, the number of graduated physiotherapists has increased four-fold to 40 000, while the population of Poland is 38 115 641 (1 physiotherapist per 952 heads of population) [19]. According to information from the Ministry of Health in 2007, physiotherapists represented the third largest group of health professionals, after doctors (126 300) and nurses (272 600) [19].

In Poland, there has been a steady increase in the proportion of people aged 60 years or more in the general population. According to the Demographic Forecast of the Central Statistical Office for the years 2003–2030, the number of people aged 65 years or more in Poland will increase from 6 183 256 in 2008 to 8 539 667 by 2020 and 9 596 988 by 2030 [20]. The ageing Polish society will need increasing physiotherapeutic care. Even so, the rapidly increasing number of Polish graduates will soon exceed demand several times over.

According to the Mazovian Region Centre of Public Health, this year's physiotherapy graduates may be employed in 88 workplaces at 39 centres in the Greater Warsaw area.

As 2750 new students will enter physiotherapy programmes in 2008, in 3 years time, the influx of graduates will certainly add to the number of unemployed persons [21].

The employability of physiotherapists in many European countries contrasts with that in Poland. According to data from WCPT, finding work in physiotherapy does not pose a problem in many European countries (e.g. Austria, Czech Republic, France, Ireland, Italy, Latvia, Netherlands, Portugal and Sweden) [18]. According to the World Health Organization, from 2000 until 2050, the world's population aged 60 years and over will more than triple from 600 million to 2 billion. The rapidly increasing number of those aged 60 years or more is mostly seen in industrialised European countries [22]. Considering the rapid ageing of European societies, the demand for physiotherapists in Europe is likely to continue to rise [6–17].

Study objective

The objectives of this study were:

- to determine what final-year physiotherapy students at MS, PE and OU know about working as physiotherapists in Poland and other EU countries; and
- to analyse students' perceptions of the professional skills they have gained during the 3 years of study, by self-assessment, in universities with different educational profiles.

Methods

Design

A questionnaire was designed by the authors (35 questions) which comprised three parts. Questionnaires were handed out during lectures. Participation in the survey was anonymous and voluntary. In the opinion of the Internal Ethical Review Board of the Medical University of Warsaw, the study did not require institutional review board approval with respect to its scope and the study population.

The survey was carried out in April 2009, at the end of the sixth semester of the Bachelor's programme. The response rate for different centres ranged from 41% (43/104) to 97% (232/239), with a mean response rate of 88% (1145/1302).

Pilot study

A pilot study was carried out among students of the Medical University of Warsaw in 2006 ($n=100$). The results of that study served to modify the demographics section and, in view of evidence of problems answering open-ended questions (insufficient response rates), open-ended questions were converted to closed-ended questions. Distractors for the

closed-ended questions were selected on the basis of a qualitative analysis of replies to open-ended questions in the pilot study.

Participants

The study sample comprised third-year Bachelor programme students from 11 university-level schools in Poland.

Inclusion criteria

Only full-time students participated in the survey. Fifty students had simultaneously taken up a programme in another department, 12 had a Bachelor's degree in another field of study, and five had a Master's degree in another field of study. These students were all included in the survey.

Exclusion criteria

In total, 191 students possessed a diploma of physiotherapy, which they had obtained from secondary school. These students were excluded from the analysis since their knowledge of the profession was determined by their previous professional training.

Data analysis

Statistical analysis of the questionnaire data was undertaken using SAS software (SAS Institute, Warsaw, Poland). Chi-squared test and one-sided analysis of variance were used to determine statistical significance. Probability values of less than 5% were considered to be significant.

Sample size

The statistical analysis was based on questionnaires obtained from 954 respondents, including 211 MS, 118 PE and 625 OU students. Table 1 presents student numbers by university educational profile and demographic data.

Results

Seventy-one percent (677/954) of students reported that physiotherapy was a good career choice. Differences between students from universities with different educational profiles were not statistically significant ($P=0.072$). Table 2 shows how much students who are finishing their studies know about working as a physiotherapist in Poland and other EU countries, and their vocational plans.

The vast majority of students (677/954, 71%) had attended additional professional training during their first-cycle studies, but MS ($P<0.001$) and PE students ($P=0.013$) reported completing such additional training significantly more frequently than OU students.

Table 1
Student numbers and demographic data.

Type of university	University code	Questionnaires	Total		
			<i>n</i>	Mean age (years) (SD; range)	Male (%)
Medical universities	MS-A	46	246	22 (SD 1.4; 20 to 35)	25
	MS-B	53			
	MS-C	64			
	MS-D	83			
Universities of physical education	PE-A	43	144	22 (SD 1.5; 20 to 35)	31
	PE-B	101			
Other universities	OU-A	232	755	23 (SD 3.0; 20 to 54)	25
	OU-B	100			
	OU-C	116			
	OU-D	144			
	OU-E	163			
Total students surveyed			1145	22 (SD 2.7; 19 to 54)	26
Students excluded			191	27 (SD 1.7; 25 to 54)	25
Students included			954	21 (SD 2.7; 18 to 53)	26

SD, standard deviation.

Table 2
Opinions of students from universities with different educational profiles.

Question	Response	Type of university			<i>P</i> -value ^a
		MS (%)	PE (%)	OU (%)	
Where would you like to work after earning your degree? ^b	Hospital	87	66	49	<0.001
	Fitness centre	56	74	69	<0.001
	Spa	18	21	15	0.814
	University	53	49	23	<0.001
	Private practice	79	65	59	<0.001
In which field of medicine would you like to work? ^b	Orthopaedics	88	61	52	<0.001
	Neurology	76	68	49	<0.001
	Cardiology	73	56	46	<0.001
	Paediatrics	52	46	39	0.643
	Rheumatology	48	51	46	0.891
	Sports medicine	40	69	32	<0.001
After earning your degree, would you like to work: ^b	With adults	68	71	76	0.752
	With children	31	27	25	0.648
In which area of physiotherapy would you like to specialise? ^b	Physical therapy	45	51	49	0.478
	Kinesiotherapy	86	81	78	0.521
	Massage	33	41	58	<0.001
	Manual techniques	22	29	24	0.682
Future plans: study or work	Work and Masters-level studies	63	59	44	<0.001
	Masters-level studies alone	12	10	9	0.781
	Work alone	25	31	47	<0.001
I will look for a job abroad		86	72	70	0.825
Country ^b	Benelux	15	10	12	0.756
	Czech Republic, Slovakia	4	6	3	0.813
	France	53	57	49	0.734
	Germany	76	69	73	0.541
	Iberian Peninsula	18	21	20	0.647
	UK	81	78	76	0.729
Finding work as a physiotherapist in Poland is difficult		83	79	72	0.713
Finding work as a physiotherapist in other countries of the European Union is easy		86	80	89	0.843

MS, medical universities; PE, universities of physical education; OU, other universities.

^a Analysed using χ^2 .

^b The percentages do not add up to 100% because it was possible to mark more than one reply to selected questions.

Table 3
Self-assessment of students' professional skills.

Professional skills ^a	Median	Type of university			P-value ^b
		MS	PE	OU	
Ability to communicate with patient	4	5	4.5	3.5	0.081
Ability to communicate with other members of medical team	4	5	4.5	4	0.069
Command of English for physiotherapeutic purposes	4	4.5	4.5	3	<0.001
Ability to give first aid	3	4	4	3	0.071
Physical fitness required for working as a physiotherapist	4	4	5	4	0.058
Competences needed to engage in research	3	4.5	4	2.5	<0.001
I know where to look for information about novel methods in physiotherapy	4	5	4.5	3	<0.001
I can organise my workplace in a labour-efficient manner	3	4.5	4	3	<0.001
I have practical skills in:					
Physical therapy	3	4	4.5	3	<0.001
Kinesiotherapy	4	4.5	5	3.5	<0.001
Massage	3	4.5	4	3	0.034
I have necessary knowledge about the most common conditions related to:					
Paediatrics	4	4.5	4.5	3.5	0.028
Neurology	3	4.5	3.5	3.5	<0.001
Cardiology	4	5	4	3	<0.001
Orthopaedics	4	5	4	3	<0.001
Rheumatology	3	4	3.5	2.5	0.031

MS, medical universities; PE, universities of physical education; OU, other universities.

^a Students rated their competences on a scale of 2 (fail) to 5 (excellent).

^b Analysed using χ^2 .

The most popular additional training courses included: massage (772/954, 81%), kinesiology taping (725/954, 76%), Vojta method (677/954, 71%), Proprioceptive Neuromuscular Facilitation (PNF) (620/954, 65%), Neurodevelopmental Treatment (NDT) Bobath (515/954, 54%), Cyriax manual therapy (419/954, 44%), Kaltenborn-Evjenth method (372/954, 39%) and McKenzie method (352/954, 37%).

The vast majority of students (639/954, 67%) felt that they were well prepared to start working as a physiotherapist. Differences between students from universities with different educational profiles were statistically significant. Compared with OU students, MS students ($P=0.012$) and PE students ($P=0.034$) declared significantly more frequently that they were well prepared to start work. Detailed results of students' self-assessments of their professional preparedness are presented in Table 3.

Discussion

The Polish literature does not contain papers regarding what students who are about to complete their physiotherapy studies know about working as a physiotherapist in Poland and other EU countries, and studies examining students' self-assessments of the professional skills they have gained as third-year physiotherapy students whilst attending universities with different educational profiles.

A search for publications in the world literature [EMBASE (January 1989 to May 2009), PubMed (January 1989 to May 2009), ProQuest (January 1980 to May 2009), SCOPUS (January 1999 to May 2009), Global Health (January 1999 to May 2009)]; search terms: physiotherapy, student, educa-

tional model, career choice, self-assessment, employment, European Union] found a few papers concerned with factors influencing the vocational choice of physiotherapy and the perception of future career among students [5–8,14–17]. However, these papers involved much smaller study populations than the present study and derived their samples from students of one type of university [5–8,14–17]. The literature review did not identify any papers concerned with the future plans of students of Eastern European universities regarding taking up work as a physiotherapist in Western European countries.

Öhman *et al.* surveyed 273 first-year physiotherapy students from a medical university in Sweden [7]. Most of the students reported that their main motivation for studying physiotherapy was the possibility of finding a job in a private physiotherapy practice. The most popular areas of practice included sports medicine and fitness centres. The students reported that they would least like to work in a hospital ward and with elderly people. In another study by Öhman *et al.* involving a cohort of 60 Canadian students, the most popular factors underlying the decision to study physiotherapy were good employment opportunities and economic considerations, and the most desirable type of workplace indicated by the students was a hospital ward [8]. Most students also declared that they were ready for work in a private physiotherapy practice, and that the most interesting aspect of their future profession was working with adult patients. At the same time, few students indicated that they expected to work in patients' homes, carry out research or manage a physiotherapy practice. None of the students were interested in working as a member of the university faculty.

A study by Johanson involved 919 first-year physiotherapy students from the USA representing private and state-owned university-level schools [15]. Johanson found differences between the expectations of male students compared with female students regarding their future work as a physiotherapist. A significantly greater proportion of male students were planning to open their own practices within 10 years of graduation from university. A higher proportion of men than women also planned to work at the university and become engaged in research. Another difference was that men expected a higher income during the first year of employment and to obtain additional degrees. Women, on the other hand, more frequently declared that they were not interested in obtaining additional degrees 10 years after graduation [15].

In this study, as in Öhman *et al.*'s study [7] of Swedish students, most of the students declared that they were willing to work in privately owned physiotherapy centres after completion of their university education.

The study by Johanson [15] also indicated that students were willing to work in private centres on completion of their studies. As regards finding a job related to sports medicine, fitness centres or working in a hospital setting, the expectations of the Polish students were closely related to the educational profile of the university where they were studying. MS students were more likely to declare that they were willing to work in a hospital setting compared with PE and OU students, and PE students were more likely to declare that they were willing to work in sports medicine or fitness centres.

The present study did not focus specifically on students' willingness to work with elderly people. However, the vast majority of students declared that they were willing to work with adults rather than children. Similar attitudes were revealed in Öhman *et al.*'s study of Canadian students [8]. Interestingly, none of the Canadian students pursued a university career [8]. In the present study of Polish students, willingness to pursue an academic career was closely related to the educational profile of the university. Students of universities with long-standing research traditions (MS and PE) were more likely to declare a willingness to engage in research work than students of private universities, where research is not usually undertaken. Similar attitudes were identified by Johanson [15] among American students, who were also interested in working at the university and becoming involved in research.

Physiotherapy students' attitudes to engaging in research were also investigated in the USA by Connolly *et al.* [14], who found that during university studies, students' awareness of the need to read professional literature and the ability to critically analyse research reports increased significantly. The present study, which included data on the competences of Polish students enabling them to undertake research, showed that this variable was also influenced by the profile of the university.

At the same time, the papers quoted above only partly overlap with the scope of the present study and do not compare the attitudes of students of universities with different edu-

cational profiles, which stem from the unique nature of the Polish system of university-level training in physiotherapy.

In the present study, the educational profile of the university did not influence students' attitudes regarding employment abroad. The vast majority of students declared that they were willing to work abroad, which may be due to their perception of employment possibilities for physiotherapists in Poland and other EU countries. This conclusion is confirmed by other findings of the present study, i.e. anticipated difficulty in finding work in Poland and students' perceptions, not always objective or based on actual data, that it is easy to find work as a physiotherapist in other EU countries.

Polish students are following changes in the market of physiotherapy training in Poland and realising how the number of physiotherapy graduates is going to change in the near future. They have valid concerns about finding employment in their profession. At the same time, their belief in the ease of finding work in other EU countries is only based on their own perceptions.

In the authors' opinion, students' declarations that they are ready to work in Germany and the UK are not surprising, given that German and English are widely taught in Poland and these are the foreign languages that the students know best.

The results concerning students' opinions of their professional skills indicate that the educational profile of the university did influence their subjective perception of their preparation to start work as a physiotherapist. For 12 of the 16 domains of professional skills investigated, students' self-assessments differed between students of universities with different educational profiles.

In the authors' opinion, the first factor at play is the short tradition of training physiotherapists at OU universities. These universities often do not possess adequate clinical training resources or specialised facilities allowing hands-on practice, which may have been reflected in the results of this study as the students reported inadequate skills in the domains of specialised training and clinical physiotherapy. On the other hand, for those domains of professional training that do not depend on well-equipped specialised facilities, such as the ability to communicate with patients and the other members of the medical team, first aid or the physical skills required of a physiotherapist, OU students rated their ability as high as students of the other types of university.

Another factor is an inadequate number of qualified academic staff, which was discussed earlier.

The MS and PE students' high opinion of their preparedness to work as a physiotherapist is not surprising. The long-standing tradition of training in physiotherapy at those schools, good infrastructure and a well-developed network of highly specialised teaching hospitals may all have contributed to higher teaching standards at these universities and a good opinion of the students about their own professional skills. Also, the syllabuses at these universities go beyond minimum

syllabus requirements that are necessary for a university to be accredited, usually including lectures in various areas of knowledge, in keeping with traditions of university learning. An appropriate number of tutors with experience in both teaching and research in physiotherapy may also have influenced the high opinion of MS and PE students regarding their own professional skills. The high opinion of their own professional skills expressed by these students is particularly important in the context of the students' plans to seek employment in other EU countries.

Finally, it should be stressed that the large number of well-educated Polish physiotherapists for whom the Polish labour market is not large enough and who believe that it is easy to find work in other EU countries may soon lead to considerable influx of these professionals to these countries. In the face of the rapid ageing of European societies, many Polish physiotherapists can be successfully employed, for example in professional care of elderly people, in these countries.

Limitations

Although the sample size is representative for Poland, there is a limitation to this research that should be borne in mind when assessing its implications. The limitation pertains to the assessment of professional abilities of the students. The results presented in the paper are derived from students' subjective evaluations of their competences, and were not verified against an objective yardstick, such as a test, practical examination or marks earned for different courses, which was mainly because the authors wanted to administer an anonymous survey.

Future directions

The study described in this paper will be continued in two directions.

In collaboration with career office staff from the different universities, the authors will monitor the careers of the study group to find out how many of the students find employment in other EU countries.

In 2008, the authors also launched an international research project dedicated to the study of professional attitudes of physiotherapy students (<http://www.wum.edu.pl/irp>). The questionnaire has now been completed by more than 500 students from the Czech Republic, Latvia, Spain and the UK. Subsequent papers will compare the professional attitudes of students from various European countries with respect to the employability of physiotherapists in these countries.

Ethical approval

None required.

Conflict of interest

None declared.

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