

LEVEL OF KNOWLEDGE AMONG PHYSIOTHERAPY STUDENTS CONCERNING THE MANAGEMENT OF STRESS URINARY INCONTINENCE IN WOMEN: A COMPARISON BETWEEN TWO UNIVERSITIES

JOANNA WITKOŚ^{1 A,B,D-F}

• ORCID: 0000-0002-5813-113X

MAGDALENA HARTMAN-PETRYCKA^{2 C,D}

• ORCID: 0000-0003-3986-3295

¹ Faculty of Medicine and Health Science,
Andrzej Frycz Modrzewski Krakow University, Kraków,
Poland

² Department of Basic Biomedical Science, Faculty of Pharma-
ceutical Sciences in Sosnowiec, Medical University of Silesia,
Katowice, Kasztanowa Street 3, 41-200 Sosnowiec, Poland

A – study design, **B** – data collection, **C** – statistical analysis, **D** – interpretation of data, **E** – manuscript preparation, **F** – literature review, **G** – sourcing of funding

ABSTRACT

Background: The health and financial burden imposed by chronic non-communicable diseases is expected to increase in parallel with the rapid rate of global population aging. Stress urinary incontinence (SUI) is an important health problem. Medical professionals should thus provide their patients with knowledge about the appropriate prevention and treatment of chronic diseases, including SUI.

Aim of the study: This study compared the level of knowledge concerning the risk factors, prevention, and treatment of SUI in women between physiotherapy graduates at two different Universities with a focus on medicine (Med) and physical education (PE).

Material and methods: This study included final-year physiotherapy students (n=401). Respondents provided answers to open-ended questions used to measure their knowledge about SUI in women.

Results: The complete and correct definition of SUI was provided by 64.4% of the students at University Med, and 56.3% of the students at University PE. Students at University Med, in comparison with the students at University PE, had a significantly higher awareness of the risk factors (86.4% vs. 69.4%), prevention methods (85.6% vs. 68.7%), and conservative (92.4% vs. 77.8%) as well as surgical treatment (28.0% vs 6.7%) of SUI in women (p<0.001).

Conclusions: There is a need for greater emphasis on education about SUI in order to better prepare physiotherapy graduate students to provide optimal care to their female patients. The disciplinary focus of Universities that provide graduate programs in physiotherapy plays a significant role in gaining knowledge about SUI.

KEYWORDS: primary healthcare, physiotherapy, stress urinary incontinence

BACKGROUND

The expected increase in healthcare expenditure imposed by chronic non-communicable diseases (NCDs) over the coming decades is linked in part to a rapid increase in global population aging. This de-

velopment significantly influences the requirements of medical professionals needed in order to prevent and treat age-related chronic illnesses [1-4]. Health is an important and precious value, since only a healthy person can fully benefit from all aspects of professional and private life, including entertain-

ment and sport. Health has a significant influence on quality of life, social connectedness, and earning potential [5-7].

Stress urinary incontinence (SUI) is often regarded as a taboo topic, which necessitates a frank and open discussion about this often overlooked chronic illness. SUI occurs when coughing, sneezing, laughing, or during heavy physical activity, all of which increase intra-abdominal pressure leading to involuntary urine leakage [8]. SUI is the most common form of urinary incontinence, and can occur at any age. Representatives of the International Health Organization estimate that more than 200 million people in both developing and developed countries suffer from SUI. It affects individuals irrespective of biological sex, although the majority (67%) of affected patients are women [9,10]. SUI worsens the occupational, social, mental, physical, and sexual wellbeing of women. The cost involved in treating and rehabilitating SUI in women, including household expenditure on purchasing female hygiene and absorbent products, is enormous [11,12]. Indeed, SUI imposes a significant medical, personal, social, and financial burden. The financial impact of SUI is expected to increase in parallel with the increasing age of the global population.

In 1999, the World Confederation for Physical Therapy [13] adopted a general definition of what the physiotherapy profession entails. Their policies define the physiotherapist as a person who provides services aimed at developing, maintaining, and restoring a maximum range of movement and level of functioning throughout the patient's lifespan. The physiotherapist is thus a medical professional who seeks to maximise the patient's quality of life by restoring their functional abilities to the maximum possible extent [14,15]. However, despite this common social perception, their skills extend beyond specialist treatment of musculoskeletal disorders. Physiotherapists working in general healthcare treat patients across all disciplines, irrespective of their specific medical diagnosis or level of functioning [16-19]. Physiotherapists work to improve the individual's health, thus contributing to better health for society at large. They provide various therapies aimed at preventing the development or exacerbation of age-related NCDs associated with environmental risk factors. In addition, physiotherapists cooperate with family members in order to and teach them how to adapt conditions at home to meet the health-related needs of the patient. Physiotherapists are expected to demonstrate emotional resistance and empathy when dealing with people who suffer from pain. Therefore, they should know how to motivate patients to undertake movement rehabilitation, frequently overcoming patient's unwillingness to incorporate therapy into their daily life [20-24].

SUI is an important problem which should receive more attention, and student physiotherapists should strive to gain the knowledge and skills needed to improve the quality of life of women suffering from this condition. They should inform patients about the risk factors for SUI, as well as educate them about the role physiotherapy can play in its prevention and treatment. These conversations should be considered as routine, and not limited to the occurrence of SUI during physical therapy. Physiotherapy students should be aware that shame and embarrassment concerning SUI are important reasons driving the reluctance of women to talk about this condition. In this situation, providing appropriate education and raising awareness with great tact and sensitivity are essential to bridge this communication divide and promote a sincere dialogue about SUI [16-20].

AIM OF THE STUDY

It is possible that limited training of medical students in communicating with and managing patients with SUI contributes to its perceived stigma compared to other NCDs. To the best of our knowledge, no studies to date have assessed to what extent medical and physiotherapy students are educated about the risk factors, prevention, diagnosis, as well as conservative and surgical treatment of SUI. In response to this knowledge gap, the aim of our study was to examine and compare the level of knowledge about these aspects of SUI among physiotherapy graduate students enrolled at two different Universities with a focus on medicine and physical education, respectively.

It was anticipated that our research would emphasize the importance of including education concerning SUI as part of the disciplinary focus of Universities that offer medical training. Our research is also intended to call attention to the serious and crucial issues surrounding SUI that physiotherapists should be aware of. It is thus our hope that this research would inspire physiotherapists to widen their breadth of knowledge concerning SUI, promote health education, and take greater action in order to benefit women suffering from this condition.

MATERIAL AND METHODS

Study design

This cross-sectional questionnaire-based study included 5th-year physiotherapy students in their 10th semester (n=401, 288 females, 113 males; mean age=25.4±3.8 years) who were in attendance during

mandatory classes on the day the surveys were administered.

Selection of research participants

The participants were selected from students enrolled across two Polish universities located in Katowice, known for their long history of providing quality education and training in physiotherapy. First, we selected 117 students (87 females, 30 males) enrolled at the Medical University of Silesia (University Med). We also included 284 students (201 females, 83 males) enrolled at the Jerzy Kukuczka Academy of Physical Education (University PE). The curricula at both faculties include mandatory classes aimed at educating students about SUI. These students were selected for inclusion in our research based on the observation that their future patients would include women with or at risk for SUI. In particular, physiotherapy students are required to have specialized knowledge about prophylaxis and preventive treatment, as such activities are included in their professional competences.

Assessment measures and data collection

The authors compiled a study questionnaire which was administered to all participants. This included open-ended questions used to assess their knowledge concerning the risk factors, prevention, diagnosis, as well as conservative and surgical treatment of SUI in women. The participants selected an appropriate definition of SUI from three columns of four available statements. The definition provided by the participant was considered as correct and complete when a correct statement was selected across all columns. This corresponded to a definition of SUI occurring when an increase in intra-abdominal pressure, associated with coughing, sneezing, laughing, or heavy physical work, is accompanied by the accidental release of urine [8-12].

Ethics statement

The Committee for Bioethics of the Medical University of Silesia in Katowice, Poland waived the need for ethics approval (KNW/0022/KB/40/18). Verbal informed consent was obtained from all potentially eligible participants. Written, involuntary consent from research participants is not however needed when data are acquired using survey-based ques-

tionnaires. Detailed documentation of participant consent was therefore not obtained, since this might have inferred refusal to participate in the research, despite all students having expressed their willingness to do so.

Statistical analysis

Statistical testing was performed using Excel (version 2016) and Statistica (version 9.0) software packages. Between-group differences were examined using the Chi-squared (X^2) test. A p-value threshold of 0.05 was used to indicate statistical significance.

RESULTS

Descriptive data

The complete and correct definition of SUI in women was given by 64.4% (76) (students enrolled at University Med, and 56.3% (160) students at University PE (Figure 1).

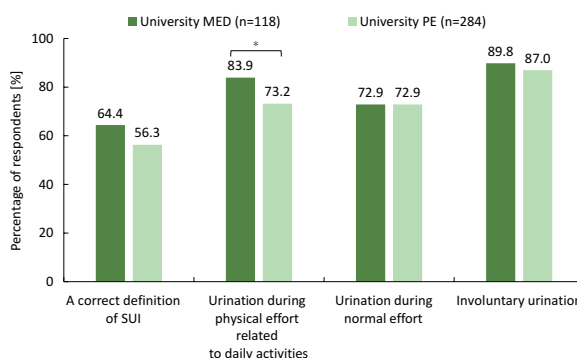


Figure 1. The percentage of physiotherapy students at Universities Med and PE who correctly defined SUI (*p=0.02)

A significantly higher number of students at University Med 83.9% (99) correctly identified the types of effort which contribute to the onset of SUI symptoms compared to the students at University PE 73.2% (208) (p=0.02).

The distribution of students at University Med 72.9% (86) compared to students at University PE 72.9% (207) who identified the effort associated with SUI as “normal” instead of and “significant” or “professional” was the same. There was no statistically significant difference between the number of students at University Med 89.8% (106) and the number of students at University PE 87.0% (247) who reported that SUI is accompanied by “involuntary urination”, as illustrated in Figure 1.

Summary of participant responses

The two student groups differed significantly ($p < 0.001$) in terms of their knowledge concerning the risk factors, prevention, as well as conservative and surgical treatment of SUI in women ($p < 0.001$), as shown in Figure 2.

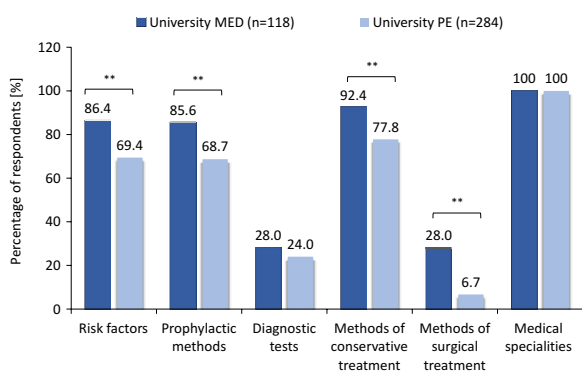


Figure 2. The percentage of physiotherapy students at Universities Med and PE who expressed knowledge of risk factors, prophylactic methods, diagnostic tests and methods of conservative and surgical treatment (** $p < 0.001$)

The number of correct answers provided concerning the risk factors and prevention methods for SUI was significantly higher in students at University Med 87% (103) compared to students at University PE 70% (199). The correct methods used in the conservative treatment of SUI were provided by 92.4% (109) of the students at University Med compared to 77.8% (221) of the students at University PE. In comparison, the correct methods used in the surgical treatment of SUI were provided by 28.0% (33) students at University Med compared to 6.7% (23) at University PE. The correct information concerning the test used to diagnose SUI was provided by 28% (33) students at University Med and 24% (68) students at University PE. The correct response concerning the medical specialties which are involved in treating SUI was provided by all respondents (Figure 2).

Participant responses compared between student groups

Second, we compared the knowledge of SUI risk factors, prevention methods, diagnostic tests, treatment strategies, and specialties best positioned to treat affected women between students at University Med and students at University PE. This was expressed as indication indices calculated as proportion frequencies between the two groups (Figure 3). All indices except surgical treatment tended to favour a higher level of knowledge among students at Univer-

sity Med, although this was not statistically significant (Figure 3).

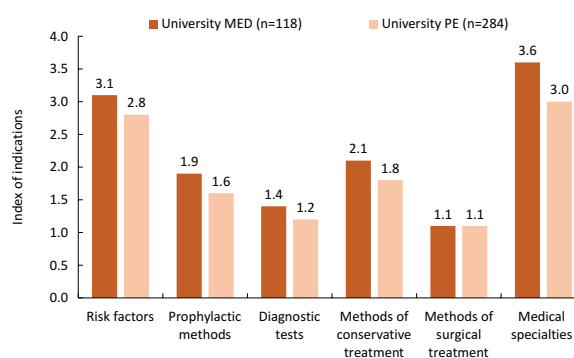


Figure 3. The index of indications of risk factors, prophylactic methods, diagnostic tests and methods of conservative and surgical treatment, and medical specialties helpful to treat stress urinary incontinence in the groups of physiotherapy students at Universities Med and PE

Risk factors, prevention and diagnosis of SUI

Third, we compared responses relevant to the risk factors, prevention measures, and diagnostic tests for SUI in women between the two student groups (Table 1).

The majority of students at both University Med 76.3% (90) and University PE 56% (159) identified pregnancy, childbirth, and its consequences as risk factors for SUI (Table 1). The following risk factors were correctly identified more often by students at University Med compared to students at University PE: pregnancy, childbirth and the its consequences ($p < 0.001$); neurological and other diseases ($p < 0.001$); urological diseases ($p < 0.001$); age and menopause ($p = 0.01$); and surgeries to the pelvic area ($p = 0.01$). Students at University Med compared to students at University PE less often reported the incorrect response of "other" ($p < 0.001$) (Table 1).

The most commonly reported preventive measures for SUI in women were Kegel exercises in both the University Med 45.8% (54) and University PE 28.5% (81) groups, and pelvic floor exercises in both the University Med 41.5% (49) and University PE 30.6% (87) groups. Students at University Med more often indicated the correct responses in terms of how to prevent SUI compared to students at PE. This was evident across the following prevention measures: Kegel exercises ($p < 0.001$), pelvic floor exercises ($p = 0.04$), physiotherapeutic procedures ($p < 0.001$), healthy lifestyle ($p = 0.01$), and physical activity ($p = 0.03$).

The students at University Med demonstrated greater knowledge of the following tests for SUI in women compared to the students at University PE. In

Table 1. The percentage of physiotherapy students from Universities MED and PE who mentioned specific risk factors, types of prophylaxis and diagnostic tests in urinary incontinence

Risk factors	Med	PE	Prophylaxis	Med	PE	Diagnostic tests	Med	PE
Pregnancy, childbirth and the consequences thereof	p<0.001		Kegel exercise	p<0.001		cough stress test, pad test, effort test	p<0.001	
	76.3 (90)	56.0 (159)		45.8 (54)	28.5 (81)		13.6 (16)	3.2 (9)
Age and menopause	p=0.01		pelvic floor muscle exercises	p=0.04		urodynamic examination	p<0.001	
	42.4 (50)	28.5 (81)		41.5 (49)	30.6 (87)		8.5 (10)	0.4 (1)
Neurological and other diseases	p<0.001		healthy lifestyle	p=0.01		gynaecological and urological examination	p=0.01	
	28.0 (33)	13.4 (38)		27.1 (32)	16.2 (46)		7.6 (9)	1.8 (5)
Urological diseases	p<0.001		physical activity	p=0.03		USG, EMG	p=0.01	
	27.1 (32)	13.4 (38)		15.3 (18)	8.1 (23)		7.6 (9)	1.4 (4)
Weakness of pelvic floor muscle	22.0 (26)	15.1 (43)	frequent health check-ups	12.7 (15)	8.8 (23)	pelvic floor muscle exercises	p<0.001	
							0.0 (0)	20.4 (58)
Obesity	19.5 (23)	16.9 (48)	physiotherapeutic procedures	p<0.001		others	0.8 (1)	1.4 (4)
				12.7 (15)	2.8 (8)			
Surgeries	p=0.01		educating women about the problem	5.1 (6)	5.3 (15)			
	16.1 (19)	6.0 (17)						
Lack of physical exercise	13.6 (16)	11.3 (32)	exercises of abdominal and urethral sphincter muscles	2.5 (3)	7.4 (21)			
Significant physical exercise	p=0.05		perinatal prophylaxis,	1.7 (2)	0.7 (2)			
	6.8 (8)	13.7 (39)						
Genetic and development defects	4.2 (5)	4.2 (12)	medication	1.7 (2)	1.1 (3)			
Psychological factors and stress	4.2 (5)	4.2 (12)	avoiding excessive effort	0.0 (0)	1.4 (4)			
Gynaecological diseases	1.7 (2)	2.8 (8)	others	0.0 (0)	0.7 (2)			
Others	p<0.001							
	5.1 (6)	10.2 (29)						

particular, correct responses were more frequently reported for the following diagnostic tests: the cough stress test ($p<0.001$), pad test ($p<0.001$), effort test ($p<0.001$), urodynamic examination ($p<0.001$), gynaecological and urological examination ($p=0.01$), diagnostic ultrasound imaging, and electromyography ($p=0.01$) (Table 1). In contrast, an incorrect response indicating the belief that pelvic floor muscle exercises can be used to diagnose SUI in women was reported by as many as 58 (20.4%) students at University PE.

Treatment strategies for SUI

Fourth, we compared responses relevant to the treatment of SUI in women between the two student groups (Table 2).

The students at University Med also demonstrated significantly greater knowledge concerning the conservative treatment of SUI compared to students at University PE for the following modalities: Kegel exercises (62.7% vs. 50%, $p=0.02$), pelvic floor exercises (51.7% vs. 25.7%, $p<0.001$), and general physical exercise (16.1% vs. 3.9%, $p<0.001$).

The surgical treatment modalities mentioned by the participants were imprecise, and included tapes, urethral surgery, artificial sphincter, and pelvic floor surgery, indicating that respondents were less familiar with these methods. In total 19.5% (23) students at University Med described surgical treatment with tapes, compared to only 3% (8) students at University PE ($p<0.001$) (Table 2).

Respondents were asked which specialists should be visited by a woman suffering from SUI.

Table 2. The percentage of physiotherapy students from Universities Med and PE who indicated certain methods of conservative and surgical treatment in urinary incontinence and certain types of specialists who treat urinary incontinence

Methods of conservative treatment	Med	PE	Methods of surgical treatment	Med	PE	Speciality	Med	PE
Kegel exercise	p=0.02		tapes	p<0.001		urology	p<0.001	
	62.7 (74)	50.0 (142)		19.5 (23)	3.0 (8)		94.1 (111)	75.4 (214)
Pelvic floor muscle exercises	p<0.001		urethra surgery, artificial sphincter	6.8 (8)	3.2 (9)	gynaecology	91.5 (108)	90.5 (257)
	51.7 (61)	25.7 (73)						
Physiotherapeutic procedures	34.7 (41)	31.3 (89)	surgeries regarding pelvic floor muscles	4.2 (5)	1.4 (4)	general medicine	p=0.03	
							57.6 (68)	45.8 (130)
General physical exercises	p<0.001					neurology	p=0.01	
	16.1 (19)	3.9 (11)					39.8 (47)	25.0 (71)
Exercises of urethral sphincter muscles	6.8 (8)	8.8 (25)				nephrology	34.7 (41)	41.5 (118)
Ball and vaginal cones	5.9 (7)	7.7 (22)				geriatrics	31.4 (37)	22.9 (65)
Medication	5.9 (7)	3.5 (10)				others	p=0.01	
							8.5 (10)	2.1 (6)
Visit to a specialist	0.0	1.1 (3)						
Others	7.6 (9)	6.0 (17)						

Their most frequent responses included: gynaecologists (University Med: 91.5% n=108; University PE: 90.5% n=257) and urologists (University Med: 94.1% n=111; University PE: 75.4% n=214) (Table 2). The students from University Med more frequently mentioned that SUI is also treated by general practitioners (p=0.03), neurologists (p=0.01) and other specialists (p=0.01) compared to students from University PE (Table 2).

DISCUSSION

This study touches upon the issue of educating future medical personnel who will have direct professional contact with women with or at risk of developing SUI. The presence of physiotherapists in the multidisciplinary healthcare team is a crucial component of service delivery, and these professionals are indispensable in addressing the adverse health and economic impact of NCDs. The study might provide inspiration for other researchers to consider the importance of physiotherapy training at University, as well as providing inspiration for medical professionals to address the burden imposed by SUI in women. The introduction of appropriate education on NCDs could provide a foundation for limiting health care expenditure on NCDs such as SUI.

Generalisability of our findings

Medical professions provide their patients with knowledge about the appropriate prevention and treatment of diseases. Indeed, illness prevention and early detection form the basis of public health. However, preventive measures cannot be taken if there is health no awareness, especially in those with risk factors for increased illness severity and mortality. This transfer of knowledge promises to support physiotherapists in addressing the negative impact of NCDs on health and wellbeing [14,20,24].

Health education is one of the most important methods of preventing the development NCDs and their adverse social consequences. It should be targeted at protecting, maintaining, strengthening, and restoring health, as well as providing new, up-to-date information on how to combat NCDs such as SUI. Substantive preparation of healthcare professionals commenced during their undergraduate studies, and continued throughout their postgraduate education, has significant downstream effects on patient care. Education and knowledge about health-promoting behaviour should be expanded, particularly in terms of risk factors for NCDs, including SUI [2,3,6,20,24].

Physiotherapy students are focused on health and physical activity. Since they work in clinics and hospitals, they are obliged to provide healthcare education to their patients. This necessitates an ap-

appropriate level of undergraduate knowledge concerning chronic NCDs including SUI. It is the duty of the physiotherapists to educate their patients about the causes of SUI, facilitate their understanding of the problem, inform them about the consequences of neglecting or abandoning treatment, and to educate their patients about behaviours which predispose to or aggravate illness. It is up to physiotherapists to encourage a healthy lifestyle in order to avoid the development of NCDs. However, in order to fulfil these criteria and provide health education in clinics and hospitals, physiotherapists must be adequately prepared [13,15-19].

SUI is an embarrassing problem that forces a woman to change her way of life. Therefore, an attempt has been made in order to determine how future physiotherapists can be prepared to provide health education to and support their patients. The absolute priority is to detect illness among patients as early as possible, recognize these disorders, and refer patients for specialized treatment. However, without proper knowledge, the abovementioned tasks are not feasible, since a lack of knowledge limits the ability to provide health promotion.

This study examined the level of knowledge concerning SUI in women among a sample of physiotherapy graduate at two Universities. Millions of women do not seek treatment for SUI because they feel ashamed to talk about it, and medical personnel do not routinely inquire about it. This study appraised the need to educate future physiotherapists who will have direct professional contact with women with or at risk for developing SUI [25-28].

Interpretation

It is unsatisfactory that only 64.4% of students at University Med and 56.3% of students at University PE were able to provide a full and correct definition of SUI in women. A significant proportion of respondents thus did not know what the disease is. This fact is alarming, since the students were provided with multiple options in the questionnaire, and their task was only to select the correct definition. This raises the question of how these students will be able to recognize SUI in their future patients and refer them for specialist treatment.

Risk factors for SUI were identified by 86.4% of the students at University Med and 69.4% of the students at University PE. The index of indication per person was 3.1 and 2.8, respectively. Knowledge about SUI constitutes the basis for effective support for future patients. Not being familiar with risk factors for SUI [9, 10] means that the physiotherapist will not be able to convey appropriate knowledge about this condition to their patients, who will re-

main unaware of how to prevent its development or exacerbation.

Risk factors for SUI reported by the respondents in both groups are consistent with those reported in the literature [29-37], including pregnancy and childbirth, advancing age and menopause [38], obesity, and a weak pelvic floor [39]. However, the students at University PE placed greater emphasis on significant physical effort as a risk factor for SUI (13.7%) compared to students at University Med (6.8%). This discrepancy could be related to the specialized knowledge of University PE students about SUI in professional sportswomen who practice sport such as running or jumping.

It is important to prevent the development NCDs in at-risk population. In total, 85.6% of the students at University Med, and 68.7% of the students at University PE, had sufficient knowledge about the prevention of SUI, with the index of indications per person being 1.9 and 1.6, respectively. This observation suggests that students at University Med are well-prepared to educate their female patients about the prevention of SUI, including modalities such as pelvic floor exercises [40-42]. This was exactly the answer expected from physiotherapy students, since their professional training includes movement and physical measures. Their responsibilities include motivating patients to engage in moderate physical activity in order to prevent SUI by strengthening the pelvic floor muscles. However, only 27.1% of the students at University Med and 16.2% of the students at University PE regarded a healthy lifestyle as a preventive measure. The concept of a "healthy lifestyle" is very general, and each person can interpret it in a different way. Physiotherapists should provide professional and very precise terms regarding the specific preventive measures for a particular illness [37]. In this context 15.3% of the students at University Med and 8.1% of the students at University PE noted "physical activity" as a preventive measures for SUI. This answer is unfortunately laconic and imprecise, because it does not explicitly state what kind of physical activity is effective in preventing and even alleviating the symptoms of SUI in women.

The students at University PE emphasized the need to educate women about the problem more strongly than the students at University Med. Education should constitute the basis of all preventive methods for SUI. Unfortunately, only a very small percentage of students stressed the need for perinatal prophylaxis, which is also a key element of prevention. The greater the extent of soft tissue injuries during childbirth, the higher risk of developing SUI over time. In terms of their education, physiotherapy students should thus be made aware that certain high-risk women are more predisposed towards SUI, and intervention should be prioritized for these groups.

In addition to prevention, pelvic floor exercises and physiotherapeutic interventions play a role in the conservative treatment of SUI in women, a fact that was highlighted by most of the respondents in this study. These exercises, also known as Kegel exercises, can take various forms, and may involve the use of additional equipment, or be combined with a physical factor such as electrical current in order to strengthen muscle contractions [34-37,41,42]. It is unfortunate that some students provided less precise answers such as "general physical exercise". Physical activity other than pelvic floor exercise is not considered an effective conservative treatment for SUI.

A significant difference in the percentage of responses regarding the surgical treatment applied of SUI was observed. A higher proportion of students at University Med (28.0%) mentioned surgical treatment methods compared to the students at University PE (6.7%), even though the index of indications per person was 1.1 in both groups. The highest percentage of replies regarded the use of tapes, consistent with the real-world application of tension free vaginal tapes (TVT) as a surgical treatment option for SUI in women [43,44].

The diagnosis of SUI is the responsibility of physicians. However, a small percentage of physiotherapists also demonstrate adequate knowledge on this subject. We found large discrepancies regarding knowledge of students from the two Universities. The correct methods of diagnosis, including a cough stress test, test pad, effort test, and urodynamic examinations [45,46], were provided by of 22.1% of the students at University Med, but only 3.6% of the students at University PE. In addition, 20.4% of the students at University PE said that pelvic floor muscle exercises play a role in the diagnosis of SUI in women, which is incorrect. Physiotherapy students correctly selected specialists and physicians, including urologists, gynaecologists and family doctors, whom female patients with SUI should ideally consult.

The rapid rate of human population ageing is expected to be accompanied by an increased demand for healthcare services aimed at treating chronic NCDs, at a significant cost. This is said to have a preferential impact in the developing world. Comprehensive professional cooperation between specialists working in a healthcare team is important for improving effective healthcare service delivery. The presence of phys-

iotherapists in the multidisciplinary team is a crucially important factor and indispensable component of healthcare service delivery. Technological progress is providing clinicians with more options for contacting and reaching out to their patients and providing important knowledge concerning NCD prevention. This provides greater flexibility and generates new solutions for expanding healthcare knowledge. The introduction of appropriate education on chronic NCDs including SUI provides a foundation for limiting health care expenditures and achieving promising health outcomes in at-risk populations [14-19].

Limitations and research strengths

The main limitation of this study was that it only included students from two Universities in Poland. However, these Universities are two of the largest institutions in the Silesian region that provide healthcare education. The Medical University of Silesia is indeed one of the largest universities in Poland. Our study also has several strengths, including a large sample size and diverse research population.

CONCLUSIONS

In summary, physiotherapy students often lack satisfactory knowledge about SUI in women. However, we contend that most of the respondents showed promise in at least conducting a basic conversation about this topic with their future patients. It is however concerning that many students provided imprecise answers, and showed misconceptions about the measures needed to prevent, diagnose, and treat SUI. Research has shown that the disciplinary focus of Universities educating students of physiotherapy plays a significant role in gaining knowledge about SUI.

In conclusion, the students at University Med demonstrated greater knowledge concerning the risk factors, prevention methods, as well as conservative and surgical treatment of SUI in women compared to the students at University PE. The emphasis put on individual risk factors, diagnostic tests, conservative treatment methods, and medical specialties useful in treating SUI differed between the students of at the two Universities.

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Correspondence address:

Joanna Witkoś
Faculty of Medicine and Health Science
Andrzej Frycz Modrzewski Krakow University
G. Herlinga-Grudzińskiego Street 1
30-705 Kraków, Poland
E-mail: joannawitkos@yahoo.com

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