The level of awareness of selected university female students about urinary stress incontinence among women

Poziom świadomości studentek wybranych uczelni na temat wysiłkowego nietrzymania moczu u kobiet

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Summary

Introduction: Urinary stress incontinence is one of the most common chronic diseases affecting women It has a significant impact on all areas of life, deteriorating its quality at the same time. It is not only a huge medical problem, but also a social and psychological one. The purpose of the study was to examine the level of awareness and knowledge of medical and non-medical female students about urinary stress incontinence.

Materials and methods: The study was conducted electronically using own survey questionnaire consisting of 24 questions. The study involved 107 women, including 71 medical and 36 non-medical female students, aged 20-26. The evaluation of the results analysis was made using the Statistica 13 software. A significance level of 0.05 was assumed in all tests performed (Pearson's Chi-2 test of independence).

Results: Female students have an average level of knowledge about urinary stress incontinence. Statistically significant differences in the level of knowledge were found between female students of various majors. A group of medical female students had more complete knowledge.

Conclusions: There is a need for continuous education of women of all ages regarding prophylaxis, risk factors and treatment of urinary stress incontinence.

Keywords: urinary stress incontinence, knowledge, awareness, female students

Introduction

According to WHO, urinary incontinence, defined as involuntary leakage of urine through the urethra in situations related to increased intra-abdominal pressure, is a global hygienic and social problem. The incontinence is a complex problem that should be treated as a symptom and not a separate disease entity [1].

It is estimated that there are around 200 million people with symptoms of urinary incontinence worldwide and this condition is one of the ten most serious health and social problems. In Poland, about 4–6 million people suffer from urinary incontinence, but there is still a lack of accurate and comprehensive epidemiological studies. Incontinence is twice as common for women than for men and appears in all age groups, including younger groups under the age of 40. Although the incidence of urinary incontinence increases with age – the largest number of patients falls on the fifth and eighth decade of life, but among young women this problem is not uncommon today. At a young age it is about 10–15%, at middle age about 35–40% of people, while at the age over 60 as much as 50% of women are complaining [2]. In fact, the number of young women with urinary incontinence problems may be higher because a significant proportion are ashamed of their medical condition and hide it [1]. The concealment of urinary incontinence symptoms before the healthcare professionals, often referred to in the literature, indicates a lack of proper communication between medical personnel and the patient, and low public awareness of this topic. Therefore, pro-health education in this area and preparation of all medical students for comprehensive work with a patient with urinary incontinence is becoming important [3]. Studies carried out so far show that the average time that passes from the appearance of the first symptoms of losing urine to the time of seeking medical assistance in Poland is up to 9 years [4]. Although urinary incontinence is not seen as a life-threatening disease, it is a serious dysfunction. It causes the withdrawal of a woman from

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professional, sociable, social and family life, significantly deteriorating her quality of life [5]. The medical condition can be successfully treated, and it is not an unavoidable consequence of childbirth or aging, hence it is important to promote knowledge and awareness on this subject among all women [6].

The purpose of the study was to check the knowledge of young girls about the problem of urinary incontinence and the principles of prophylaxis in this area based on the questionnaire survey of female students of several Polish universities (Lesser Poland Voivodeship).

Materials and methods

To assess the level of knowledge of female students, a questionnaire survey method was used. Own online survey consisted of 24 single and multiple choice questions regarding knowledge of risk factors, diagnostics, prophylaxis and treatment of urinary stress incontinence as well as possible incidents of urinary incontinence. It was voluntary and anonymous; addressed to female students of several medical and non-medical universities in Lesser Poland. Data was being collected from January to March 2019. The evaluation of the results analysis was made using the Statistica 13 software. A significance level of 0.05 (p=0.05) was assumed in all tests performed (Pearson's Chi-2 test of independence).

The study involved 107 women, including 71 medical and 36 non-medical female students, aged 20–26. Female students were divided into functional medical majors – medicine, nursing, physiotherapy, midwifery and non-functional medical ones – pharmacy, dentistry, dietetics, public health, medical and non-medical rescue.

Results

The analysis covered formally correctly completed questionnaires of 107 female students of selected universities. The average age of the respondents was 22.3 years.

In the group under the study, 22% of subjects studied non-functional medical majors, 44% studied functional medical majors, while 34% were in non-medical majors.

In answering the questions about the factors predisposing to the occurrence of urinary stress incontinence, the respondents most often indicated urological diseases (95%), age and menopause (87%) as well as obesity (70%). The least frequently mentioned answers were: competitive sports (16%), congenital defect of connective tissue (30%), heavy physical work (41%) and lack of pre – and postnatal rehabilitation (41%) (Table 1).

Based on the test ($p<0.0001$), a significant relationship was found between the major and the level of knowledge about the factors predisposing to urinary stress incontinence. Female students of non-functional medical studies most often pointed to urological diseases as well as the age and period of menopause, female students of functional medical studies for urological diseases as well as complicated natural births and frequent births, while non-medical female students most often pointed to urological diseases. Female students of functional medical majors most often pointed to hard physical work and the lack of pre – and postnatal rehabilitation.

The next question is *„Who can be affected by the problem of urinary stress incontinence?"* (Table 2). Based on the test ($p<0.0001$), a significant relationship was found between the major and the level of knowledge about possibility of occurrence of urinary stress incontinence. Female students of non-functional medical and functional medical studies most often pointed to all women regardless of age, while non-medical female students most often pointed to elderly women and postmenopausal women.

The next questions concerned the prophylaxis of the discussed dysfunction to occur (Table 3). Among the preventive factors of urinary stress incontinence, the respondents most often indicated a healthy lifestyle (92%) and regular pelvic floor muscle exercises (90%), while the least response was obtained by hormone replacement therapy (19%) and avoidance of excessive physical exertion (29%). Perinatal prophylaxis as prevention of urinary stress incontinence was indicated only by 48% of the respondents (Table 4).

Based on the test ($p<0.0001$), a significant relationship was found between the major and the level of knowledge about the prophylaxis of urinary stress incontinence. Non-functional medical female students most often pointed to a healthy lifestyle and regular pelvic floor muscle exercises, functional medical female students to a healthy lifestyle, regular pelvic floor muscle exercises, moderate physical activity and perinatal prophylaxis, while non-medical female students most often pointed to a healthy lifestyle and regular pelvic floor muscle exercises.

The knowledge of basic methods of diagnosis and treatment in the case of urinary stress incontinence was also checked (Table 5). Among the diagnostic methods of urinary stress incontinence, the respondents most frequently pointed to urodynamic examination (50%) and ultrasound (50%). 41% declared they knew the diagnosis of urinary stress incontinence using the sanitary pad test and 29% knew the surface electromyography method. Only 19% of respondents indicated a post-void retention test of urine volume, while as much as 36% of persons did not know any diagnostic method (Table 6).

Based on the test ($p<0.0001$), a significant relationship was found between the major and the level of knowledge about the diagnostic methods for urinary stress incontinence. Female students of non-functional medical studies most often pointed to urodynamic examination and ultrasound, female students of functional medical studies pointed to the sanitary pad test and urodynamic examination, while non-medical female students most often did not know any diagnostic method.

Among the methods of treating urinary stress incontinence, the respondents most often indicate treatment using isometric

Table 1.
Major and the answer to the question:
„Which of the following factors may predispose to urinary stress incontinence?"

	Medical, non-functional	Medical, functional	Non-medical	Total
Smoking tobacco	15	30	5	50
Column %	9%	6%	3%	
Constipation	10	38	2	50
Column %	6%	8%	1%	
Obesity	19	40	16	75
Column %	12%	8%	10%	
Congenital defect of connective tissue	3	26	3	32
Column %	2%	5%	2%	
Hard physical work	**4**	**34**	**6**	**44**
Column %	2%	7%	4%	
Recurrent urinary tract inflammation	13	40	14	67
Column %	8%	8%	9%	
Neurological diseases	15	28	5	48
Column %	9%	6%	3%	
Urological diseases	23	46	33	102
Column %	14%	9%	21%	
Complex childbirth and frequent births	10	42	6	58
Column %	6%	9%	4%	
Lack of pre- and postnatal rehabilitation	**2**	**39**	**3**	**44**
Column %	1%	8%	2%	
Gynecological operations	16	37	16	69
Column %	10%	8%	10%	
Competitive sports	1	14	2	17
Column %	1%	3%	1%	
Age and period of menopause	22	41	30	93
Column %	13%	8%	19%	
No physical exercises	11	33	16	60
Column %	7%	7%	10%	
Total	164	488	157	809

Table 2.
Major and the answer to the question:
„Who can be affected by the problem of urinary stress incontinence?"

	Medical, non-functional	Medical, functional	Non-medical	Total
Only elderly women	5	3	16	24
Column %	21%	6%	44%	
All women regardless of age	**17**	**43**	**7**	**67**
Column %	71%	91%	19%	
Only postmenopausal women	2	1	13	16
Column %	8%	2%	36%	
Total	24	47	36	107

Table 3.
Distribution of answers to the question:
„The prophylaxis of urinary stress incontinence consists of:"

	Quantity	Percentage
Healthy lifestyle	98	92%
Moderate physical activity	79	74%
Regular pelvic floor muscle exercises	96	90%
Avoiding excessive physical exercises	31	29%
Perinatal prophylaxis	**51**	**48%**
Treatment of urinary tract infections and medical conditions	63	59%
Frequent medical check-ups	39	36%
Hormone replacement therapy	20	19%

Table 4.
Major and the answer to the question:
„The prophylaxis of urinary stress incontinence consists of:"

	Medical, non-functional	Medical, functional	Non-medical
Healthy lifestyle	24	45	29
Column %	23%	17%	29%
Moderate physical activity	17	41	21
Column %	16%	15%	21%
Regular pelvic floor muscle exercises	23	47	26
Column %	22%	17%	26%
Avoiding excessive physical exercises	**2**	**28**	**1**

Table 5.
Distribution of answers to the question:
„Which of the following diagnostic methods of urinary stress incontinence are you familiar with?"

	Quantity	Percentage
Sanitary pad test	44	41%
Urodynamic examination	54	50%
Surface electromyography	31	29%
Post-void retention test of urine volume	20	19%
Exercise tests	21	20%
Ultrasound	53	50%
I don't know any method	38	36%

Table 6.
Major and the answer to the question:
„Which of the following diagnostic methods of urinary stress incontinence are you familiar with?"

	Medical, non-functional	Medical, functional	Non-medical	Total
Sanitary pad test	5	38	1	44
Column %	9%	22%	3%	
Urodynamic examination	20	34	0	54
Column %	37%	20%	0%	
Surface electromyography	4	27	0	31
Column %	7%	16%	0%	
Post-void retention test of urine volume	4	16	0	20
Column %	7%	9%	0%	
Exercise tests	1	19	1	21
Column %	2%	11%	3%	
Ultrasound	19	33	1	53
Column %	35%	19%	3%	
I don't know any method	1	3	34	38
Column %	2%	2%	92%	
Total	54	170	37	261

exercises (93%) and the use of vaginal cones (62%). Known methods of treating urinary stress incontinence also include pharmacotherapy (55%) and operations with or without tapes (56%). The least known methods of treatment are vibration training (13%) and magnetic stimulation (21%). Only 7% of respondents did not know any method of treating urinary stress incontinence (Table 7).

Based on the test ($p<0.0001$), a significant relationship was found between the major and the level of knowledge about the treatment of urinary stress incontinence. Non-functional medical female students most often pointed to treatment using isometric exercises, pharmacotherapy and surgery, functional medical female students pointed to isometric exercises and functional electrostimulation, while non-medical female students most often pointed to isometric exercises. Only functional medical female students pointed to biofeedback exercises, magnetic stimulation and vibration training as one of the methods of treating urinary stress incontinence (Table 8).

In the survey on the use of prophylaxis in the discussed medical condition, the following answers were obtained: 73% of respondents believe that preventive actions of urinary stress incontinence are important to a large extent, 10% of respondents believe that to a small extent, while 17% of respondents have no opinion on this topic (Table 9).

In the analyzed group, 44% of female students sometimes use prophylaxis of urinary stress incontinence, 32% of people have never thought about it, 13% do not use such prophylaxis because they do not have knowledge on this subject, 7% do not use prophylaxis despite the knowledge they have and only 4% female students always use prophylaxis of this disease (Table 10).

The opinion of female students on the creation of educational and information programs in the studied area was also checked. In the group under the study, 93% of respondents believe that it is beneficial and justified to create counseling in the area of urinary incontinence at women's counseling centers, hospitals and studios, 2% have the opposite opinion, while 5% of respondents have no opinion on this topic (Table 11) .

In addition, the entire group under the study was asked whether there were situations in which they had difficulty maintaining and controlling urine during various daily activities associated with increased intra-abdominal pressure. 69% of respondents have never had such incidents, 21% of students could not determine if they had an incident of urinary stress incontinence, while as many as 9% said that they had incidents of urinary incontinence.

Discussion

The problem of urinary stress incontinence in women is not considered a life-threatening condition, however due to the prevalence of it, WHO assess it as one of the most serious health problems of today [7].

The conducted own study shows that only a small proportion of students could fully define the medical condition. Medical students of the group under the study showed much better knowledge. Similarly, differences in the level of knowledge

Table 7.
Distribution of answers to the question:
„The methods of treating urinary stress incontinence known by you include:"

	Quantity	Percentage
Treatment with isometric exercises (Kegel exercises)	99	93%
Vaginal cones	66	62%
Exercises using biofeedback	37	35%
Magnetic stimulation	22	21%
Vibration training	14	13%
Functional electrostimulation	49	46%
Pharmacotherapy	59	55%
Operations with or without the use of tapes	60	56%
I don't know any method	7	7%

Table 8.
Major and the answer to the question:
„The methods of treating urinary stress incontinence known by you include:"

	Medical, non-functional	Medical, functional	Non-medical	Total
Treatment with isometric exercises	24	47	28	99
Column %	25%	18%	57%	
Vaginal cones	21	35	10	66
Column %	22%	13%	20%	
Exercises using biofeedback	**0**	**37**	**0**	**37**
Column %	0%	14%	0%	
Magnetic stimulation	**0**	**22**	**0**	**22**
Column %	0%	8%	0%	
Vibration training	**0**	**14**	**0**	**14**
Column %	0%	5%	0%	
Functional electrostimulation	8	41	0	49
Column %	8%	15%	0%	
Pharmacotherapy	22	34	3	59
Column %	23%	13%	6%	
Operations with or without the use of tapes	22	37	1	60
Column %	23%	14%	2%	
I don't know any method	0	0	7	7
Column %	0%	0%	14%	
Total	97	267	49	413

Table 9.
Distribution of answers to the question:
„Do you think that the preventive action of urinary stress incontinence is important?"

	Quantity	Percentage
Yes, to a large extent	78	73%
Yes, but to a small extent	11	10%
I have no opinion	18	17%

Table 10.
Distribution of answers to the question:
„Do you use the prophylaxis of urinary stress incontinence?"

	Quantity	Percentage
No, because I don't know anything about it	14	13%
No, despite I do have knowledge about it	8	7%
Sometimes	47	44%
Yes, always	**4**	**4%**
I never thought about that	34	32%

Table 11.
Distribution of answers to the question:
„Do you consider it beneficial and justified to create counseling in the area of urinary incontinence at women's counseling centers, hospitals, in college?"

	Quantity	Percentage
Yes	100	93%
No	2	2%
I have no opinion	5	5%

about the urinary incontinence of students of individual majors of study are shown in the study by Witkoś, Hartman et al. [3] conducted on a group of 258 last year female students of nursing and midwifery. The group of midwifery female students showed fuller knowledge of risk factors, diagnostic tests and methods of treating urinary stress incontinence. Despite this, however, according to the authors, both groups did not show satisfactory knowledge about incontinence among women. Our own research also noted the higher level of knowledge among functional medical female students (medicine, nursing, physiotherapy, midwifery). The questionnaire survey of women conducted by Cichońska, Maciąg et al. [4] showed that only slightly more than half of women (56%) were aware of the existence of such a medical condition as urinary stress incontinence. This often leads to disregarding the first symptoms and not undergoing treatment.

Knowledge of risk factors, preventive methods, diagnostic methods and methods of treatment of urinary stress incontinence is not entirely satisfactory and also differed among female students. The most frequently mentioned predisposing factors were urological diseases, age and menopause, obesity, gynecological operations and recurrent urinary tract inflammation, which is consistent with reports from the literature [8], but for equally important factors such as hard physical work, lack of pre – and postnatal rehabilitation or incorrect sports practice would only be known to female students of functional medical majors (medicine, physiotherapy, nursing, midwifery). Exercises with barbells, crunches, running, jumping, fitness on trampolines cause a significant increase in intra-abdominal pressure. It should also be noted that many women perform exercises while exhaled, which significantly hinders pelvic floor muscles from working effectively. A huge load on the pelvic floor is the so-called „high impact sports" – they include jumps and weightlifting. Long-term workouts of this type cause significant weakening of the muscles and ligaments in the pelvis, which causes that basketball players, ballerinas, runners and persons practicing sports on the trampoline to complain on urinary stress incontinence [9], and today also younger women attending the gym.

In the study, as much as 90% of female students thought that regular pelvic floor muscle exercise is an effective prophylaxis and treatment method for urinary stress incontinence. Similarly, according to Hilde and Bo [10], Kegel exercises provide better support for the contents of the smaller pelvis, lengthening the functional length of the urethra and improving resting pressure in it, activating the periurethral striated muscles, normalizing the abdominoperineal reflex due to an increase in intra-abdominal pressure and improving the reception of sensory stimuli, e.g. during the sexual act. Data on this subject from our own study is satisfactory, however, it should be clarified how to perform such exercises, because 56% of respondents, however, give an incorrect pelvic floor muscle exercise pattern.

Urinary incontinence increases with age and is twice as common among women than among men. Today, however, this medical condition often affects younger people, pregnant wom-

en (65%) and women in the first year after giving birth (30%) [9]. Own study indicates that as many as 9% of female surveyed students admit that they have experienced incidents of stress urinary incontinence in the past. Ignoring the symptoms and not taking preventive measures results in withdrawal of the woman from professional, social and family life, forcing her to change her lifestyle [5]. It is the reason for the decrease in self-esteem and dignity, and thus also the cause of anxiety and depression. Therefore, an interdisciplinary approach to the problem of urinary incontinence becomes necessary [4,5].

According to the recommendations of the Main Council of Nurses and Midwives [11], teaching all women and instructing healthy behaviors in the area of prophylaxis of urinary stress incontinence is extremely important: prevention of intimate infections, active lifestyle, prevention of constipation, avoidance of excessive physical effort, perinatal prophylaxis, etc. Our own study shows that only 4% of all female students always try to use such prophylaxis, 44% sometimes implement it, 13% do not comply with these principles due to lack of knowledge, while as many as 32% of female students have never considered using such prophylaxis. A positive phenomenon is that 73% of women surveyed notice the need to introduce preventive measures.

Summarizing, it should be stated that the knowledge of non-medical and non-functional medical female students about urinary stress incontinence among women is not satisfactory. Women who do not study will probably have even lower knowledge than students. Based on the example of these young women, it can be stated that the whole society has low knowledge – so health education is necessary. Changes can also be expected by modifying classes at universities by discussing the most important aspects of the above issues. The presented study results also indicate the need to develop and implement a preventive program aimed at increasing the knowledge and awareness of all women about urinary stress incontinence, especially its prophylaxis.

Conclusions

1. The level of knowledge of female students about urinary stress incontinence is not satisfactory.
2. Statistically significant differences in the level of knowledge about urinary stress incontinence were found between groups of female students of medical and non-medical majors in favor of medical majors. The knowledge of functional medical female students was the most complete of all groups under the study.
3. Female students note the need to implement prophylaxis and education about urinary stress incontinence.
4. The results of the conducted study indicate the need to develop and implement preventive and educational programs for the whole society in the area of urinary stress incontinence.

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Streszczenie

Wstęp: Wysiłkowe nietrzymanie moczu jest jednym z najczęstszych przewlekłych schorzeń kobiecych. Ma znaczny wpływ na wszystkie sfery życia, jednocześnie pogarszając jego jakość. Stanowi nie tylko ogromny problem medyczny, ale również społeczny i psychologiczny. Celem pracy było zbadanie poziomu świadomości i wiedzy studentek kierunków medycznych i niemedycznych na temat wysiłkowego nietrzymania moczu.

Materiał i metody: Badanie przeprowadzono drogą elektroniczną za pomocą autorskiego kwestionariusza ankiety składającego się z 24 pytań. W badaniu wzięło udział 107 kobiet, w tym 71 studentek kierunków medycznych i 36 niemedycznych, w wieku od 20 do 26 lat. Oceny analizy wyników dokonano przy użyciu programu Statistica 13. We wszystkich przeprowadzonych testach (test Chi-2 niezależności Pearsona) przyjęto poziom istotności równy 0,05.

Wyniki: Studentki posiadają średni poziom wiedzy na temat wysiłkowego nietrzymania moczu. Stwierdzono statystycznie istotne różnice w poziomie wiedzy pomiędzy studentkami różnych kierunków. Pełniejszą wiedzę posiadała grupa studentek kierunków medycznych.

Wnioski: Istnieje potrzeba ciągłej edukacji kobiet w każdym wieku w zakresie profilaktyki, czynników ryzyka oraz leczenia wysiłkowego nietrzymania moczu.

Słowa kluczowe: wysiłkowe nietrzymanie moczu, wiedza, świadomość, studentki