

Women's Awareness of Physiotherapeutic Methods in the Treatment of Urinary Incontinence

Świadomość kobiet dotycząca metod fizjoterapeutycznych w leczeniu nietrzymania moczu

A – preparing concepts
B – formulating methods
C – conducting research
D – processing results
E – interpretation and conclusions
F – editing the final version

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Abstract

Introduction: The article is devoted to the problems of urinary incontinence among women and their knowledge about the treatment of this disease. The authors sought to determine the current state of women's knowledge of the physiotherapeutic methods used in the treatment of urinary incontinence. The aim of the study was to examine women's awareness of methods of physiotherapeutic treatment of urinary incontinence.

Materials and methods: The study included 187 women with a locomotor diagnosis, aged 18-93 years currently being treated in a rehabilitation clinic. The subjects were divided into two groups: I – those with symptoms of urinary incontinence, consisting of 87 women and II – those without symptoms of urinary incontinence, healthy – consisting of 100 individuals.

Results: The general level of knowledge of women regarding physiotherapeutic methods of treatment of urinary incontinence was low. These women were not aware of the possibilities offered by physiotherapy in the treatment of urinary incontinence. Women do not know the latest methods used by physiotherapists in UI therapy. The problem of incontinence among women is significant and requires health professionals to increase women's awareness of this health issue.

Conclusions:

1. Women with urinary incontinence have low levels of awareness regarding preventive treatment methods.
2. Women with urinary incontinence too infrequently seek preventive treatment.
3. It appears justified to implement women's education in the areas of prevention and treatment of incontinence.
4. Raising women's awareness regarding this intimate health issue is recommended.
5. Health education in the area of urinary incontinence may have a positive influence on reducing shame and anxiety.

Key words: urinary incontinence, women physiotherapy, pelvic floor muscles

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Streszczenie

Wstęp: Praca jest poświęcona problemom nietrzymania moczu wśród kobiet i ich wiedzy na temat leczenia tego schorzenia. Autorzy podjęli się weryfikacji wiedzy kobiet, co do stosowanych metod fizjoterapeutycznych w leczeniu nietrzymania moczu. Celem pracy było zbadanie świadomości kobiet dotyczącej metod fizjoterapeutycznego leczenia nietrzymania moczu.

Materiał i metody: Do badań włączono 227 kobiet, w wieku od 18 do 93 lat leczonych w przychodni rehabilitacyjnej, z powodu chorób narządu ruchu. Badanych podzielono na dwie grupy: z objawami nietrzymania moczu, którą stanowiło 87 kobiet oraz na grupę kobiet bez objawów nietrzymania moczu, zdrowych – 100. Podziału dokonano na podstawie odpowiedzi ankietowanych. Narzędziem zastosowanym do badania był autorski kwestionariusz ankiety dotyczący metod leczenia nietrzymania moczu.

Wyniki: Poziom wiedzy kobiet na temat fizjoterapeutycznych metod leczenia nietrzymania moczu był niski. Kobiety nie posiadają wiedzy dotyczącej możliwości jakie daje fizjoterapia w leczeniu nietrzymania moczu. Kobiety nie znają najnowszych metod stosowanych przez fizjoterapeutów wykorzystywanych do terapii NTM. Problem nietrzymania moczu wśród kobiet wymaga podjęcia działań mających na celu edukację i zwiększenie świadomości kobiet dotyczącej tego problemu zdrowotnego.

Wnioski:

1. Kobiety z problemem nietrzymania moczu mają niski poziom świadomości dotyczący metod leczenia zachowawczego.
2. Uzasadnione wydaje się być wprowadzenie edukacji kobiet w zakresie profilaktyki oraz leczenia problemu inkontynencji.
3. Wskazane jest podnoszenie świadomości kobiet dotyczącej ich zdrowia intymnego.
4. Edukacja zdrowotna w zakresie leczenia nietrzymania moczu może pozytywnie wpłynąć na zmniejszenie poczucia wstydu i lęku.

Słowa kluczowe: nietrzymanie moczu, fizjoterapia kobieca, mięśnie dna miednicy

Introduction

The involuntary leakage of urine from the bladder is a problem that affects up to 15% of the population. Urinary incontinence (UI) affects women and men of all ages. Because of its prevalence, especially among women, the World Health Organization (WHO) has declared urinary incontinence a lifestyle disease along with diabetes, coronary heart disease and obesity. An involuntary leakage of urine is a hygiene and social problem [1,2]. It is estimated that the problem affects one third of postmenopausal women. According to epidemiological studies, symptoms of urinary incontinence occur in 4 -10% of twenty-year-olds, 60% of sixty-year-olds and 70-80% of women aged over 65 years [3].

According to the literature, there are various reasons for incontinence [4,5]. Due to the different pathophysiology, we distinguish several types of urinary incontinence, and the most common are: stress urinary incontinence (50-70%), overactive bladder (OAB), and mixed form (10-20%) [6].

In the case of stress urinary incontinence, the leakage occurs during the increased pressures in the abdominal cavity caused by but not limited to physical activity, coughing and sneezing. The reason for the lack of control over urine retention is the reversal of the pressure gradients between the bladder and the urethra. The intraurethral pressure in the physiological mechanism of continence should be greater than in the bladder. The reason for the reduced pressure in the urethra is the disturbance of the pelvic floor stability and the change of the vesicourethral angle (properly 120 degrees). The pelvic floor organ stability is affected by the proper blood supply of the urethral mucosa, efficiency of the pubic-ureteral ligament and pelvic floor muscles. Disorder of any of these elements may lead to a problem with incontinence [4,5].

An OAB can also be associated with uncontrolled urine leakage. A characteristic symptom of OAB is frequent urination of small quantities of urine (approximately 350 ml) combined with strong pressure. Urine loss most often occurs on the way to the toilet, urgent urinary incontinence. The most

common causes are abnormal habits that can lead to detrusor-sphincter disorder (dyssynergia). The form of mixed incontinence is a combination of the pathophysiology of both types of urinary incontinence discussed above. Due to this, it is difficult to treat this type of urinary incontinence [4,5].

There are many risk factors for urinary incontinence, including: being female, menopausal age, obesity, previous births, hysterectomy and other gynecological operations, smoking, constipation, genetic factors, estrogen deficiency, heavy physical work or intensive training [7-10].

Urinary incontinence diagnosis is based primarily on a thoroughly interview covering topics such as: the nature of the dysfunction, number of childbirths, past gynecological operations, medications and lifestyle. Medical history examination should be supplemented with standardized questionnaires (Gaudenza, King's Health Questionnaire, UDI-6SF, MESA, ICIQ-SF), as well as analysis of a 3-day urination log. Depending on the indications, additional tests are also used, e.g. the pad test [2, 11-13].

Physical examination includes assessment of posture and breathing mechanism and assessment of pelvic floor muscles. Examination of the pelvic floor muscles should start with visual and palpation assessment per vaginam. In addition, sEMG, diagnostic ultrasound, dynamometric and manometric tests are used. The function of the pelvic floor muscles are assessed using the PERFECT system (P-force, E-toughness, R-repeats, F-quick-shrink fibers, E-elevation, C-activation of synergistic muscles, T- contraction during the coughing test). In the assessment of this muscle group, the initial tension and the possibility of relaxation are also important. It is inappropriate to recommend pelvic floor muscle exercises without testing, because only 30% of women can contract this muscle group correctly [14,15]. In the diagnostics of the lower urinary tract, laboratory tests and urodynamic tests are also used [16-18].

There are many methods available for treating urinary incontinence [16,19]. The treatment of urinary incontinence in women is an interdisciplinary problem [20]. Chmielewska emphasizes the role of prophylaxis in the treatment of incontinence, with an emphasis on early prevention (elimination of risk factors) and secondary prevention (early diagnosis and development prevention) [7].

Physiotherapeutic methods that are highly effective are recommended as first choice therapy.

If surgical treatment is necessary, physiotherapy should be used as a complementary method. The most popular physiotherapeutic method is pelvic floor muscle training. This requires the conscious, correct activation of this muscle group, training parameters are the exercises are selected individually based on examination. In the initial stage of learning, imaginative methods and visualization may be used [7]. Exercises may be supplemented with biofeedback and/or electrostimulation. Thanks to the use of surface electrodes and a vaginal electrode, the patient sees on the monitor screen how her muscles function and can contract or relax them when a certain signal is received [21].

Other physiotherapeutic methods used are vibration training, magnet therapy and behavioral training. Along with the development of new technologies, there were also exercises with a mobile application and a special kGoal [23, 24] vaginal sensor.

The most important element of therapy is the change in habits that is necessary, especially in the case of OAB [25]. Therapeutic management should also include posture correction that has an effect on the functioning of the pelvic floor [26]. The patient in the process of physiotherapy should be aware of the causes of their problem, which is why education regarding anatomy and physiology is so important [3].

It is difficult to determine exactly the number of women who are affected by the problem of uncontrolled outflow of urine. According to reports, the problem of urinary incontinence affects at least one third of woman. The difficulty in establishing an exact number is that women often do not report issues of urinary incontinence to their health care provider. The reasons for this phenomenon are, among others, a sense of shame, anxiety, but also the common opinion that urinary incontinence is normal after pregnancy and during menopause [30].

Community activities and publicizing the problem are important to change this situation. It is important that women are aware of what to do and where to turn to with their ailment.

The aim of the study was to assess women's awareness of the physiotherapeutic methods used in the treatment of urinary incontinence. The collected data will help determine what information should be discussed as part of educational or preventive activities.

The following research questions were asked:

1. What is the familiarity with methods of preventive treatment among women?
2. How many women with involuntary urinary leakage problem participate in preventive treatment?
3. What methods of preventive treatment are most popular among women?

Materials and methods

After obtaining the consent of the Bioethical Commission at the University of Rehabilitation No. 22/2017 dated 04/05/2017, as well as written consent of subjects to be tested, 227 women were included in the study. The subjects were patients of a rehabilitation clinic in Warsaw, being treated for a variety of locomotor conditions.

Criteria for inclusion: above 18 years of age. The exclusion criteria were lack of consent for participation in the study, stroke, demyelinating disorders and cancer, as well as spinal cord injuries.

The analysis of the questionnaire was conducted for 227 women examined, of which 40 persons (21%) were excluded from further analysis due to non-compliance with the inclusion criteria for the study group.

Respondents were divided into two groups: I- those with symptoms of incontinence, (n=87) and II- those without symptoms of urinary incontinence (n=100).

The questionnaire used in this study (created by the author) consisted of questions about age, body height, body weight, number and type of childbirths and surgeries. Then they were questioned about neurological, neoplastic diseases, spinal cord injuries, as well as the occurrence of pain in the lumbar spine. Subsequent questions concerned the occurrence of problems with incontinence and knowledge of the correct number of urinations during the day. The last part of the survey was a table in which seven methods of physiotherapeutic treatment of urinary incontinence were mentioned and in which the subjects were asked to determine the level of familiarity with each method ("Not familiar", "Slightly Familiar", "Familiar", "Used Presently") marking an "X" in the appropriate place.

Statistical analysis. The non-parametric Mann-Whitney U test and the chi-squared test were used to analyze the test results. The calculations were performed using statistical and computational

packages (Statistica 12.5, Windows Excel). The significance level as set at $p < 0.05$.

Results

The groups were significantly different in terms of age, number of deliveries, type of delivery ($p = 0.001$). The characteristics of both groups are presented in Table 1.

Tab. 1. Characteristics of the studied group

	UI	HEALTHY	p
Age (years)	59 ± 16	47 ± 22	$p < 0,001$
Height (cm)	165 ± 6,92	165 ± 13,99	$p = 0,1$
Weight (kg)	67 ± 9,73	66 ± 11,40	$p = 0,5$
Number of deliveries	2 ± 1,01	1 ± 1,22	$p < 0,001$
	NC: 126 CS: 37	NC: 80 CS: 40	$p = 0,001$ $p = 0,6$

UI* - group I with urinary incontinence problems

HEALTHY* - group II women without symptoms of urinary incontinence

NC*- Natural childbirth

CS*- Caesarean section

In Group I, 23% of women underwent gynecological surgery (most often hysterectomy), versus 8% of Group II ($p < 0.001$).

In group I, pain was reported more frequently in the lumbar spine area (51%), whereas only 25% of those in group II reported lumbar pain ($p < 0.001$).

In the group of women with UI, 76% of women reported having symptoms of OAB. Among women without the problem of involuntary urine leakage, 36% of women reported this problem ($p < 0.001$).

The correct answer to the question regarding the knowledge of physiological number of toilet visits per day was known by only 10% of women with UI and 11% of those unaffected by UI. Most often, women declared that you can use the toilet any number of times.

The answers of women regarding awareness of the physiotherapeutic methods of UI treatment are presented in the Table 2. below.

Tab. 2. Women's responses regarding familiarity with methods of physiotherapeutic treatment of UI

Treatment	Not familiar		Slightly Familiar		Familiar		Used Presently	
	UI	Healthy	UI	Healthy	UI	Healthy	UI	Healthy
Biofeedback	58,82	54,55	24,71	21,21	8,24	22,22	77,78	2,02
Pelvic floor exercises	21,84	20,00	22,99	19,00	20,69	38,00	34,48	23,00
Electrostimulation	42,53	36,00	20,69	35,00	28,74	28,00	8,05	1,00
Magnet therapy	41,86	44,44	29,07	29,29	24,42	25,25	4,65	1,01
kGoal	70,11	75,51	21,84	15,31	5,75	9,18	2,30	0,00
Vibratory training	62,79	57,00	22,09	28,00	15,12	15,00	0,00	0,00
Bladder training	36,78	35,00	26,44	33,00	19,54	29,00	17,24	3,00

There were no statistically significant differences between groups regarding awareness of methods:

1) Exercises of the pelvic floor muscles - 21% of women with UI and 38% of women without UI ($p = 0.6$)

2) Magnet therapy - 24% of women with UI and 25% of women without UI

3) kGoal - 70% of women with UI and 76% of women without UI do not know this method

4) Vibratory training - among women with incontinence 15% used vibratory training; 63% of women with UI and 57% of women without UI reported that they did not know this method of treatment

5) Bladder training - known only to 27% of women with UI and 37% of women without UI; over 30% of women do not know this method of treatment ($p = 0.6$)

6) Electrostimulation - statistically significant difference noted between groups regarding electrostimulation awareness 81% with UI vs. 28% no UI ($p = 0.03$)

7) Biofeedback – known to 29% of women with UI vs. 22% of women without UI ($p = 0.02$).

Discussion

Numerous authors emphasized the importance of the topic of UI due to the fact that it is a serious medical, social and economic problem. Urinary incontinence has a significant impact on the quality of women's lives in both professional, social and sexual areas [7,11,12,28]. Women report that the problem of UI is embarrassing, which could additionally influence the statistics and estimation of the scale of the problem [7]. A significant number of women, despite the problem, do not have adequate knowledge of methods of treatment of urinary incontinence, which could have an impact on the emotional state of patients [12]. The knowledge is acquired mainly via the Internet and TV, instead of

medical specialists [3,12]. A low level of knowledge about urinary incontinence is also confirmed in the above study.

Women have insufficient knowledge about methods of treatment of UI. The most popular method for women is pelvic floor muscle exercises, although this study did not check the exact knowledge whether women are able to properly tighten and train the pelvic floor muscles as it would require more detailed research that could accurately estimate the quality of knowledge in this area. The majority of women or simply did not know such methods of treatment as biofeedback, electrostimulation or magnet therapy exist. Additionally, kGoal and vibratory training are methods completely unknown to the respondents.

Women's knowledge of urinary incontinence was also studied by Derewiecki et al. In that study, 13,86% of respondents declared a very good level of knowledge about urinary incontinence. 69.31% of women reported that this is a shameful problem, and 35.64% stated that urinary incontinence has its greatest impact in the area of professional work. On the other hand, 35.65% of women do not know how to deal with the reported problem of UI. Methods of dealing with urinary incontinence which were mentioned by women are exercises (37.62%), inserts (27.72%), drug therapy (13.86%), more frequent urination, Botox, limiting fluid intake (0.99% each) [12].

Szymona-Pałkowska et al. focused their research, on women's knowledge regarding UI. They showed that an adequate level of knowledge may do more to reduce the sense of guilt, shame or feelings of injustice associated with the fact of being ill rather than to reduce anxiety. Patients with a higher level of knowledge about urinary incontinence less frequently indicated the term "Harmful" (describing their ailments as damaging, harmful) [3].

A study by Chmielewska et al. showed that the incidence of UI increases with age, and the highest

severity occurs in women over 71 years of age. The urinary leakage occurred most often during everyday activities, physical activity and during sneezing and coughing. Women with UI, who were classified as obese, were also more likely to report pain in the lumbo-sacral spine area [7].

In the studies of To Wong et al., 78.3% of respondents did not know that stress-based UI is an actual disease. In the presented study as well as in the Wong studies, women who did not give birth had UI significantly less often than those after multiple births. 18.8% of women reported that they continuously need to buy urological inserts due to urine leakage. Women's education in the area of problems with UI was insufficient, only 7% of respondents declared knowledge of continence as sufficient [29].

These and earlier, cited studies indicate the scale of the problem of UI and the need for education and preventive actions in this area.

Conclusions

1. Women with UI have low levels of awareness regarding preventive treatment methods.
2. Women with UI problems too rarely undertake preventive treatment.
3. It seems reasonable to implement women's education in the field of prevention and treatment of UI.
4. It is advisable to raise women's awareness of their intimate health.
5. Health education in the treatment of UI can positively affect the reduction of feelings of shame and anxiety.

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