

Urinary Incontinence as a Significant Health and Social Problem of Women

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Abstract:

The issue of urinary incontinence is the most commonly discussed issue in the field of urology and urological nursing. It occurs all over the world. 45% of the population suffers from it. An average time from the onset of the first symptoms until the visit to the doctor's is 3 years. It occurs at any age, regardless of gender, still women suffer from it more often and the prevalence of affected female-patients increases with age. However, at present, as an exception that proves the rule, we are increasingly often encountering this problem in younger people. This disease affects every area of patients' lives. Social, professional and private life are all being subordinated to this issue, which significantly affects the comfort and quality of life.

Urinary incontinence

Urinary incontinence is a very delicate problem, it is a "complaint of any involuntary loss of urine". Urinary incontinence is currently defined as involuntary leakage of urine. Urinary incontinence belongs to the group of lower urinary tract dysfunctions (1). As soon as some element of the entire urinary system does not work as it is supposed to, urinary incontinence can occur. The most commonly used classification according to ICS is:

- Urethral urinary incontinence: urge, stress, mixed, reflex, ischuriaparadoxa.
- Extra-urethral urinary incontinence: congenital, acquired (fistulas) (2).

Stress incontinence occurs in situations when, as a result of a certain happening or activity, the pressure in the abdominal cavity rises to such an extent that the bladder cannot resist. On the other hand, urge incontinence is manifested by an inability to stop urine leakage or by an overwhelming need to urinate. Some women have experience with mixed incontinence, when they experience symptoms of stress as well as of urgent nature, usually one of which is predominant. Another and less common type of urinary incontinence is overflow incontinence, in which the bladder does not empty completely and urine leaks spontaneously while the bladder is being gradually filled. There are also other types of incontinence, but they are rare and occur as a result of a certain abnormality of the excretory system (3). All of these types of urinary incontinence are characterized according to symptom, cause, and evidence. For most patients, urinary incontinence is one of the last taboos of medicine. An untreated form of urinary incontinence turns into a chronic form and thus causes patients not only health problems, but also serious mental and social problems (4).

Epidemiology of urinary incontinence in Slovakia and abroad

The age of the population is increasing and, along with this gratifying development, the incidence of some diseases and conditions - urinary incontinence including - is increasing. In its annual report from the 7th Global Incontinence Forum, GFI Forum 2018 reported the percentage distribution of the incontinence-affected population on each continent. The largest num-

ber of affected population is in Europe with 9.9%, followed by North America 9%, Asia 8.4%, South America 8.2% and Africa 7.2%. Urinary incontinence affects men and women of all ages, but most often the elderly. 25% of people over the age of 60 and 55.6% of people aged 80 and over suffer from this disease. A 2012 survey conducted by the Incoforum in collaboration with Dicio Agency pointed out that incontinence affects a large population, not just the patients themselves. As many as 89% of respondents were familiar with the concept of incontinence. However, only 2/3 of the population actually perceived information about this problem. Surprisingly, up to 15% of those who suffer from this condition do not seek help at all. Prof. Svihra, a leading expert in the field of urology, says that: incontinence significantly reduces the quality of life; brings feelings of shame; inferiority; frustration; can even lead to depression (5). According to the analysis of INFOSTAT from 2018, it is assumed that Slovakia is going to be one of the fastest aging countries in the European Union. The Demographic Research Institute states that by 2040, 540,000 men and 680,000 women over the age of 70 will live in Slovakia, and thus the number of incontinent people will increase to 900,000 (6). This will result in a high increase in health and social care costs. According to epidemiological estimates, there are 160,000 women living in Slovakia with moderate to severe urinary incontinence. The overall prevalence of urinary incontinence in the Slovak Republic is 25% which indicates that the estimated number is about 530,000 women: 220,000 women do not use any incontinence aids; 180,000 women use at least one pad or diaper a day. At the estimated consumption, about 60 million pieces of pads or diapers per year should be used in Slovakia. Urinary incontinence is caused or exacerbated by age, parity and obesity. Prevention of urinary incontinence is also an important task. Prevention is a method of protection that minimizes risks in the first stages of danger or threat (7).

Research objectives

- Finding out the degree of incontinence that most often affects women
- To verify what factors affect the presence and degree of urinary incontinence in women.

Methods of data analysis

Our research sample consisted of deliberately selected respondents. In the descriptive part of the research, we used the tools of descriptive statistics. We processed the obtained data using the Microsoft Office 2017 spreadsheet. All the women had the opportunity to participate, whether it was nurses, auxiliary medical staff and, of course, patients. We tested the hypotheses with inductive statistics tools. In the hypotheses, with correlation coefficient, we verified the degree of stress, urge as well as of the overflow incontinence in relation to the age and weight of the respondents. We made a decision on the significance of differences based on the calculated p-value and the significance level of 0.05.

Demographic data

82 women took part in the research. Their age distribution is shown in Table 1 Age of the respondents. The youngest respondent was 19 years old, the oldest 70 years old. The average age of the respondents was 40.37 years. The most numerous age group consisted of respondents in the age category of 41 to 50 years, with 26 (31.7%) women. The least represented group was the age category of 60 and over, with 4 women, they accounted for 4.9% of the sample.

Table 1 Age of the respondents

Age of the respondents	number	%
Up to 30 years	20	24.4%
31 -40 years	23	28%
41 -50 years	26	31.7%
51 -60 years	9	11%
60 years and over	4	4.9%
Total	82	100%
Average	40.37	

In the questionnaire, we determined the height and weight of the respondents and based on these data, we calculated the BMI index and then evaluated it according to the BMI classification. We found that with BMI below 18.5, 7.4%

of respondents had weight lower than normal. 40.7% of the respondents had normal weight, i.e. their BMI was in the range of 18.5 to 24.9. 32.1% of the participating women were overweight (BMI from 25 to 29.9). Based on BMI values, 13.6% of the respondents had class 1 obesity; 2.5% had class 2 obesity; 3.7% had class 3 obesity.

Table 2 Weight evaluation

Weight evaluation		Number	%
Underweight	BMI <18,5	6	7.4%
Normal weight	BMI 18,5-24,9	33	40.7%
Overweight	BMI 25,0-29,9	26	32.1%
Class 1 obesity	BMI 30,0-34,9	11	13.6%
Class 2 obesity	BMI 35,0-39,9	2	2.5%
Class 3 obesity	BMI >=40,0	3	3.7%
Total		81	100%

Incontinence rate in women

The degree of incontinence is assessed mainly according to subjective symptoms - urine leakage in normal life situations. Therefore, we determined the presence of urine leakage as well as its amount during various activities. Based on the answers, we divided the respondents into 4 groups. The first group consisted of women who do not suffer from stress incontinence, the other groups included women with the corresponding degree of stress incontinence. 20.7% of the respondents had no problems with urine leakage. According to our findings, 31.7% of the participating women had occasional problems, especially when coughing, sneezing or doing similar physical activities. Stage 2 stress incontinence affects 35.4% of the respondents and stage 3 affects 12.2% of the respondents.

Table 3 Degree of stress incontinence

Degree of stress incontinence	Number	%
None	17	20,7%
Stage 1	26	31,7%
Stage 2	29	35,4%
Stage 3	10	12,2%
Total	82	100,0%

Another type of incontinence is urine leakage when the bladder is full, also called an overflow incontinence. 34.1% of the participating women do not have this problem at all. Exactly half of the respondents rarely experience this problem. At the same time, 40.2% of those women stated that in such situations they would only leak a few drops and 9.8% would leak a medium amount of urine. With a full bladder, 12.2% of the participating women leak urine more often. Out of them, 3.7% state that it is only a drop, in 6.1% the amount is medium and in 2.4% the amount is more than 30 ml. The other 3.7% of the women always have a problem with overflow with a full bladder. 1.2% of them leak a medium amount and 2.4% leak a lot of urine - over 30 ml.

Table 4 Full bladder urine leakage

Frequency/amount	none	very little-drops	medium – up to 30 ml	a lot – over 30 ml	total
Never	34.1%				34.1%
Rarely		40.2%	9.8%		50%
More often		3.7%	6.1%	2.4%	12.2%
Always			1.2%	2.4%	3.7%
Total	34.1%	4.9%	17.1%	4.9%	100%

Another type of incontinence is urge incontinence. In the questionnaire, we asked the respondents how often they felt a sudden and intense urge to urinate, which is a typical symptom of urge incontinence. Approximately a quarter of the respondents (25.6%) said it did not happen to them at all. Almost half of the respondents (48.8%) admitted that it happened to them rarely. More often experience it 18.3% of the participating women and very often 7.3% of the respondents.

Table 5 Urge incontinence

Sudden and intense urge to urinate	Number	%
Never	21	25.6%
Rarely	40	48.8%
More often	15	18.3%
Very often	6	7.3%
Total	82	100%

Hypothesis verification

After the descriptive part, we will focus on verifying the hypotheses using inductive statistics tools.

Hypothesis 1: *We assume that there is a statistically significant association between women's age and urinary incontinence.*

Considering relevant items, we determined the degree of stress, urge and overflow incontinence. To verify the first hypothesis, we calculated and verified the correlation coefficient between age and the type of incontinence. The results are shown in Table 6.

Table 6 Correlation between age and incontinence

Correlations			
Age			
Spearman's rho	Stress incontinence	Correlation Coefficient	.222
		Sig.(2-tailed)	.045
		N	82
	Overflow incontinence	Correlation Coefficient	.185
		Sig.(2-tailed)	.096
		N	82
	Urge Incontinence	Correlation Coefficient	.018
		Sig.(2-tailed)	.876
		N	82

The correlation coefficient between age and stress incontinence is 0.222. This positive value expresses a direct, but only slight dependence of the variables. Thus, it can be said that the degree

of stress incontinence increases with age very slightly. However, the p-value of 0.045 is below the significance level. Therefore, we evaluate this dependence as statistically significant. In the second type - *the overflow incontinence* - the correlation coefficient is slightly lower. It reaches a value of 0.185. There is a slight direct relationship between age and this type of incontinence. However, the p-value of 0.096 is above the significance level. Therefore, this dependence has not been confirmed, it is not statistically significant. For the *urge incontinence*, the correlation coefficient is 0.018. This value is very close to zero, so there is no dependence between the variables. The p-value of 0.876 is much higher than all the common levels of significance. *Hypothesis 1 was confirmed in stress incontinence. There is a direct link between age and stress incontinence. Older women generally have higher rate of stress incontinence.*

Hypothesis 2: *We assume that there is a statistically significant association between overweight and incontinence in women.*

In this hypothesis, we verified the degree of stress, urge and overflow incontinence in relation to possible overweight in women. We evaluated overweight, obesity or normal healthy weight using BMI. The calculated correlation coefficients and the corresponding p-values are displayed in Table 7.

Table 7 Correlation between overweight and incontinence

Correlations			
Age			
Spearman's rho	Stress incontinence	Correlation Coefficient	.336
		Sig.(2-tailed)	.006
		N	82
	Overflow incontinence	Correlation Coefficient	.274
		Sig.(2-tailed)	.013
		N	81
	Urge Incontinence	Correlation Coefficient	.142
		Sig.(2-tailed)	.206
		N	81

The correlation coefficient between BMI and *stress incontinence* is 0.336. This value is in the interval of the middle direct connection of the variables. It is therefore true that the degree of overweight or obesity slightly increases the likelihood of incontinence in women. The corresponding p-value of 0.006 confirms the statistical significance of this correlation. In the second type of incontinence, *the overflow incontinence*, the correlation coefficient is slightly lower. It reaches the value of 0.274. This value also indicates a slight direct relationship. The p-value of 0.013 is also below the significance level of 0.05. Thus, again, the interrelationship is statistically significant. For *the urge incontinence*, the correlation coefficient is 0.142. This positive value again means a direct connection. However, the corresponding p-value of 0.206 indicates that this is only a trivial, insignificant relationship. There is a slight direct relationship between age and this type of incontinence. However, the p-value of 0.096 is above the level of significance. Therefore, this dependence has not been confirmed, it is not statistically significant.

Hypothesis 2 has been confirmed for stress incontinence and overflow incontinence. The relationship with overweight is direct. Generally, obese and overweight women suffer more often from stress incontinence and overflow incontinence than other women.

Discussion

Urinary incontinence is not only a health problem, but also a serious psychological and social problem causing various limitations in professional and social life, and it also has an impact on the financial and sexual areas of one's life. The World Health Organization (WHO) estimates that approximately 5-8% of the population in all countries of the world suffer from urinary incontinence. As this issue presents a global, societal, hygienic, and economic problem, we investigated the factors that affect urinary incontinence in women. 82 women took part in the research. Their age distribution was as follows: the youngest respondent was 19 and the oldest was 70 years old. The average age of the respondents was 40.37 years. The most numerous age group consisted of respondents in the age category from 41 to 50 years, in this age category there were 26 (31.7%) women. The least represented was the

age category of 60 and over, with only 4 women that accounted for 4.9% of the sample. Considering that we have linked overweight / obesity to urinary incontinence, we were also interested in this anthropometric data. Based on height and weight, we calculated the BMI index of the respondents: We then evaluated this index according to the BMI classification. The results showed that 7.4% of the participating women had weight under the normal weight with BMI below 18.5. 40.7% of the respondents had normal weight, i.e. BMI in the range from 18.5 to 24.9. 32.1% of the women were overweight (BMI from 25 to 29.9). According to BMI, 13.6% of the respondents had class 1 obesity; 2.5% had class 2; 3.7% had class 3 obesity.

In our research, we determined the degree of stress, urge and overflow incontinence. Our results show that, *stress incontinence* affects 79.3% of the respondents. The author Marencak also states that about 20% of women around the age of 45 suffered from stress incontinence. The incidence of this condition is increasing in older age groups. Urinary incontinence affects a significant percentage of women aged 20–80, while on average 25–27.6% of Slovak women suffer from urinary incontinence (8).

Another type of incontinence is urinary incontinence when the bladder is full, a so-called overflow incontinence. Exactly half of the respondents experience this only rarely. At the same time, 40.2% of those women stated that in such situations they would only leak a few drops and 9.8% would leak a medium amount of urine. With a full bladder, 12.2% of the respondents leak urine more often. 3.7% of them state that in these situations it was only a drop, in 6.1% the amount was medium and in 2.4% the amount was more than 30 ml. The other 3.7% of the women always have a problem with overflow with a full bladder. 1.2% of them leak a medium amount and 2.4% leak a lot of urine - over 30 ml.

Another type of incontinence is *urge incontinence*. In the questionnaire, we asked the respondents how often they felt a sudden and intense urge to urinate, which is a typical symptom of urge incontinence. Almost half of the respondents (48.8%) admitted that it happened to them rarely. More often experienced it 18.3% of the participating women and very often 7.3% of the respondents. Burgio *et al.* published an epidemiological

research paper on the incidence of urge incontinence. The research was carried out in 1972. It monitored the incidence of urinary incontinence in geriatric patients. An estimated prevalence in 15 - year - old women is 5%; in 60 year old women it is 72%.

The first study on the prevalence of urinary incontinence in women in Central Europe was conducted in Austria. The prevalence reached 26.3%, with an estimated number of 850,000 incontinent women out of a total of 3.2 million women over the age of 18 (8).

From the point of view of social work, it is desirable to provide specialist counseling to people with incontinence and to show them directly to a financial contribution for increased hygiene-related expenses compensation (10). We tested the hypotheses, the degree of stress, urge and overflow incontinence in relation to the age and weight of the respondents using a correlation coefficient. There is a positive value between the age of the respondents and *stress incontinence*, which expresses a direct, but only slight dependence of the variables. Thus, it can be said that the degree of stress incontinence increases with age very slightly. However, the p-value of 0.045 is below the significance level of 0.05. Therefore, we evaluate this dependence as statistically significant.

In the second type - *the overflow incontinence* - the correlation coefficient is slightly lower. It reaches a value of 0.185. There is a slight direct relationship between age and the second type of incontinence - *the overflow incontinence*, however, the p-value of 0.096 is above the significance level. Therefore, this dependence has not been confirmed, it is not statistically significant. For the *urge incontinence*, the correlation coefficient is 0.018. This value is very close to zero, so there is no dependence between the variables. The p-value of 0.876 is much higher than all the common levels of significance.

Hypothesis 1 was confirmed in stress incontinence. There is a direct link between age and stress incontinence. Older women generally have higher rate of stress incontinence. The prevalence of stress incontinence in women has been a subject of several studies in Europe. In France, the prevalence of stress incontinence is between 17% -28%; in Italy 4.6% -16.6%; in Spain 13.5% - 17.8%; in England it ranges from 24.5% -27.5%.

The prevalence of stress incontinence is very low in men: for example, 0.2% in Italy; 0.7% in Spain (10).

In the upcoming years, it is estimated that the number of incontinent patients in Europe will increase from 54 to 57 million. Similar development is expected for overactive bladder (OAB). In the future, an increase in aging population by 25% is expected and therefore the number of incontinent female-patients will increase, too (11). The correlation coefficient between BMI and *stress incontinence* is 0.336. This value is in the interval of the middle direct connection of the variables. It is therefore true that the degree of overweight or obesity slightly increases the likelihood of incontinence in women. The corresponding p-value of 0.006 confirms the statistical significance of this correlation. In the second type of incontinence, *the overflow incontinence*, the correlation coefficient is slightly lower. It reaches the value of 0.274. This value also indicates a slight direct relationship. The p-value of 0.013 is also below the significance level of 0.05. Thus, again, the interrelationship is statistically significant. For *urge incontinence*, the correlation coefficient is 0.142. Again, this positive value means a direct connection. However, the corresponding p-value of 0.206 indicates that this is only a trivial, insignificant relationship. There is a slight direct relationship between age and this type of incontinence. However, the p-value of 0.096 is above the level of significance. Therefore, this dependence has not been confirmed, it is not statistically significant.

Hypothesis 2 has been confirmed for stress incontinence and overflow incontinence. Generally, obese and overweight women suffer more often from stress incontinence and overflow incontinence than other women.

Due to those facts, it is necessary to:

- offer women suffering from urinary incontinence an opportunity to obtain information (leaflets, brochures, literature, contact information of experts in the field of urology, psychology),
- recommend appropriate incontinence products according to the type of urinary incontinence, given that different devices are needed for each type of incontinence.

It is necessary to give them the opportunity to try them and to provide advice on disposable

absorbent incontinence products (incontinence pads, pants, diapers, mats),

- recommend weight loss to obese patients based on their general condition, as obesity has been proved to increase the risk of urinary incontinence;
- organize effective training for nurses who come into contact with an incontinent patient - in gynecology, urology, general practitioners' out-patient clinics, etc.,
- organize conferences and professional events, ensure active professional participation in congresses,
- promote publications in professional and lay literature and magazines.

Conclusion

Urinary incontinence is a widespread and expensive health problem. It is associated with a significant burden on a woman. It causes problems to the women at all levels of their lives. Urinary incontinence puts a certain burden on the whole society, not only on the affected woman. The medical care for such women entails high economic costs for medications and compensatory aids. These costs are covered by public health insurance. The care also includes the costs of rehabilitation treatment. This treatment can be very beneficial in the first stage of urinary incontinence and it is not too financially limiting. Nowadays, we have more options for the treatment of incontinence, but first and foremost it is important that the woman is being treated. In Slovakia there is also a civic patient association called *InkoFórum*. It is a voluntary, independent patient organization focused on helping people suffering from incontinence (7). The association is the only patient platform in Slovakia that is being invited to join the working groups at the Ministry of Health. Thanks to this membership, we can actively shape the health policy in Slovakia. We have become a member of WFIP - the World Federation of Incontinent Patients. From this federation we receive interesting suggestions that help improve lives of patients with urinary incontinence.

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