

# GYNECOLOGICAL AND OBSTETRIC PROFILE, URINARY LOSS AND QUALITY OF LIFE OF ELDERLY WOMEN WITH URINARY INCONTINENCE

## PERFIL GINECOLÓGICO E OBSTÉTRICO, PERDA URINÁRIA E QUALIDADE DE VIDA DE IDOSAS COM INCONTINÊNCIA URINÁRIA

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**Abstract: Introduction:** The prevalence of urinary incontinence (UI) in postmenopausal women can reach 30% to 70%, being considered a global public health problem. **Objective:** To describe the gynecological and obstetrical profile of elderly women with UI, quantify urine loss and assess the impact on quality of life. **Methodology:** This is a quantitative, cross-sectional study performed with elderly women linked to social groups in Santo Antônio da Patrulha/RS. Data collection was performed through the International Consultation on Incontinence Questionnaire - Short Form (ICIQ-SF); an initial interview; the King's Health Questionnaire (KHQ) and the 1-hour Pad Test. **Results:** The sample consisted of 25 elderly women, 60% had a vaginal birth and 32% had pelvic organ prolapse. Mixed urinary incontinence was the most prevalent (64%), with a mean of  $4.5 \pm 8.2$  g of urine lost in the Pad Test, and the most affected KHQ domains were UI impact ( $49.6 \pm 24$ ) and measurements of gravity ( $42.3 \pm 22.4$ ). Correlation was found between the Pad Test and the domains of general health perception ( $r=0.51$ ;  $p=0.041$ ), sleep and mood ( $r=0.59$ ;  $p=0.016$ ) of the KHQ and frequency ( $r= -0.48$ ;  $p= 0.047$ ) of the ICIQ-SF. **Conclusion:** The elderly women had mild UI, and the associations suggest that the greater the urinary loss, the worse the sleep quality and the general perception of health, and the lower the frequency of occurrence of losses.

**Keywords:** Urinary incontinence; Quality of life; Women's Health; Aging.

# INTRODUCTION

For the International Continence Society (ICS), urinary incontinence (UI) is defined as any involuntary loss of urine<sup>(1)</sup>. It can be classified as stress incontinence (EUI), when there is urinary loss after physical exercise, coughing or sneezing; urgency or urge incontinence (IUU), when urinary loss occurs next to a strong desire to urinate; mixed (IUM), when there is stress incontinence and urgency simultaneously; and unconscious, when there is urinary loss without urgency or recognition of extravasation<sup>(2)</sup>.

Worldwide, UI affects 27% of the population, with a frequency twice as high in women as in men. In Brazil, prevalence rates in menopause women can reach 30% to 70%. Due to the high incidence and prevalence rates - and due to the great impact on people's quality of life - UI is considered a global public health problem<sup>(2)</sup>.

UI may be the result of dysfunctions of neural control of the bladder, pelvic muscles or mechanical trauma to the pelvic floor. The highest risk is associated with increasing age, history of vaginal delivery, use of forceps, episiotomy, newborn weight (NB) greater than 3,000 grams (g), obesity and menopause<sup>(2-3)</sup>. Neurological conditions (such as stroke and Parkinson's disease), use of some medications (diuretics increase urinary volume and anxiolytics decrease awareness of bladder fullness), urinary tract infection, constipation, reduced mobility, smoking, previous gynecological surgeries and a history of high-effort work activities are also risk factors for UI<sup>(2)</sup>.

UI can negatively influence quality of life by limiting activities of daily living, restricting social life - for fear that episodes of urine loss will occur in public -, affect hygiene and sexual function, triggering feelings of depression and low self-esteem. It also generates expenses on the purchase and dependence on tampons, geriatric diapers and medicines, increasing costs within the family budget<sup>(4)</sup>.

Quantifying and classifying urine loss, while investigating how much this loss influences the quality of life of these women, provides a broader analysis of the impact of UI within the biopsychosocial context and the individuality of each woman<sup>(5)</sup>. Thus, this research aimed to describe the gynecological and obstetric profile of elderly women with UI, as well as to quantify urine loss and evaluate the impact on quality of life.

# METODOLOGY

This is a quantitative, analytical, cross-sectional study carried out from January to February 2021. The target audience is elderly women linked to groups developed by the Secretariat of Social

Development, of the municipality of Santo Antônio da Patrulha - RS. This research was developed in the form of a partial requirement for obtaining the title of bachelor's degree in Physical Therapy - course completion work (TCC) - and the collections were conducted by the academic author of this work, under the supervision of the supervisor.

84 elderly women participated in the groups, who received telephone contact to present the research, as well as its objective and methodology. In this first contact, urine loss was asked and, for those who reported the complaint and showed interest in participating in the research, the *International Consultation on Incontinence Questionnaire - Short Form (ICIQ-SF)* was then applied. The ICIQ-SF is a self-administered questionnaire, composed of questions that evaluate urine loss and the type of incontinence presented, in addition to assessing the impact of UI and qualifying urinary losses according to frequency, quantity and severity<sup>(6)</sup>. At the end of the telephone contact, the face-to-face evaluation was scheduled.

Of the 84 women aged 60 years or older contacted, 31 had urine loss, 21 were excluded because they did not have UI and 32 showed no interest in participating in the study. Among the 31 women with urine loss, six gave up participating days before the face-to-face evaluation due to the pandemic, totaling a sample of 25 elderly women with UI who signed the Free and Informed Consent Form (ICF) and participated in the face-to-face evaluation.

Face-to-face data collection was developed individually with each volunteer, respecting the pre-scheduled times and the movement of people in the environment; it was carried out in an auditorium provided by the city hall. An interview prepared by the academic was initially applied, consisting of the following items: age, marital status, education, skin color, BMI, waist circumference, gynecological and obstetric profile, gynecological surgeries, medications, pathologies present and prior knowledge about UI.

The measurement of urine loss was made using the 1-hour Pad Test, defined by the ICS as an optional test for the evaluation of urinary incontinence, being a non-invasive method of quantifying and classifying urine loss<sup>(7)</sup>. An absorbent, previously weighed on a sanitized precision scale, was delivered to the volunteer. The participant was then instructed to ingest, during the first 15 minutes, 500 ml of water at rest in the sitting position. During these 15 minutes, *King's Health Questionnaire (KHQ)* was applied.

The KHQ, an instrument that evaluates the impact of UI on quality of life, consists of 21 questions, divided into eight domains, namely the general perception of health, impact of UI, limitations of daily activities, physical limitations, social limitations, personal relationship, emotions and sleep/disposition. The KHQ is scored from 0 to 100, individually in its domains, and the higher the score, the worse the QoL in that domain<sup>(8)</sup>.

After rest and application of the KHQ, the volunteer was instructed to perform the following tasks: going up and down a flight of stairs, repeating at least twice, and interspersing with walks, for 15 minutes. Sit and get up 10 times, make 10 vigorous coughs, run in the same place for 1 (one) minute, lift a small object from the floor 5 (five) times and wash your hands under running water for 1 (one) minute. At the end, the difference between the initial and final weight of the tampon was calculated. Losses of less than 1 g were considered insignificant; between 1 and 9 g, mild losses; between 10 and 49 g, moderate losses; and above 50 g, severe losses<sup>(7,9)</sup>.

During the performance of the activities, the volunteers were accompanied by the student and any changes that indicated the need to interrupt the task (such as dyspnea, loss of balance and dizziness) were monitored, in order to ensure total safety during the performance of the test. At the end, a booklet with information about the pelvic floor and exercises for the region was made available, along with physiotherapeutic guidelines.

Data analysis was performed in the Statistical Package for the Social Sciences, version 26 (SPSS Inc., Chicago, IL, USA). The results will be presented as means, standard deviations, absolute and relative frequencies. In order to verify the assumptions of normality of data and homogeneity of variances, the Shapiro-Wilk and Levene tests were used, respectively. The relationship of the 1-hour Pad Test with the ICIQ-SF and KHQ questionnaires was analyzed using Spearman's Correlation coefficient. A p-value <0.05 was considered statistically significant for all analyses.

The present study was approved by the Research Ethics Committee of the University of Vale do Rio dos Sinos (UNISINOS) under opinion No. 4,394,465 and the ethical principles were respected in accordance with the provisions of Resolution 466/12 of the National Health Council. All participants read and signed the informed consent form.

## RESULTS

Twenty-five elderly women participated in the research and the baseline characteristics of the sample are shown in Table 1. The elderly participants had an average age of  $70.4 \pm 4.4$  years, most of them were married (52%), self-declared white (96%), lived with a spouse and/or other family members (84%), were retired (96%) and with incomplete elementary school (52%). Most of the elderly women denied smoking (92%) and alcohol consumption (100%). The average value of body mass index (BMI) was  $28.1 \pm 4.3$  kg/m<sup>2</sup>, of which 48% were classified overweight, with an average abdominal circumference of  $98.1 \pm 10.4$  cm. Regarding the pathologies, 76% of the sample reported systemic arterial hypertension (SAH) and 28% depression, and 96% made regular use of some

medication, but only 24% were met the polypharmacy criterion, defined by the use of five or more medications<sup>(10)</sup>.

Table 1 – Baseline Characteristics of the sample (n=25)

<b>Variable</b>	<b>Value</b>
<b>Age (years)</b>	70,4 ± 4,4
<b>Marital State, n (%)</b>	
Married	13 (52)
Widow	5 (20)
Separated	1 (4)
Stable Union	3 (12)
<b>Skin Color, n (%)</b>	
Whitte	24 (96)
Black	1 (4)
<b>Family Arrangement, n (%)</b>	
Live Alone	4 (16)
Lives with spouse/other family members	21 (84)
<b>Retired, n (%)</b>	
Yes	24 (96)
No	1 (4)
<b>Education, n (%)</b>	
Ed. Incomplete fundamental	13 (52)
Ed. Complete fundamental	6 (24)
Ed. Complete high school	4 (16)
Ed. graduated	2 (8)
<b>Smoking History, n (%)</b>	
No	23 (92)
Yes	2 (8)
<b>Alcoholism, n (%)</b>	
No	25 (100)
<b>BMI, kg/m<sup>2</sup></b>	28,1 ± 4,3
<b>BMI classification, n (%)</b>	
Normal	4 (16)
Overweight	12 (48)
Grade I Obesity	6 (24)
Grade II Obesity	3 (12)
<b>Abdominal Circunference, cm</b>	98,1 ± 10,4
<b>Pathologies*, n (%)</b>	
HAS	19 (76)
Depression	7 (28)
Anxiety	4 (16)
Diabetes	3 (12)
<b>Medication Use, n (%)</b>	
Yes	24 (96)

No	1 (4)
Polypharmacy	6 (24)

Source: Prepared by the author.

Caption: BMI = body mass index, \* = each volunteer could have more than one pathology.

The sample characteristics regarding obstetric history and menopause can be seen in Table 2. There was an average age of onset of menopause of  $49.1 \pm 5.2$  years, an average of  $3.8 \pm 1.3$  pregnancies,  $3.5 \pm 1.2$  deliveries, most of which underwent prenatal care (64%). Most reported NB weight greater than 3000 g (72%), 12% had at least one stillborn newborn, 60% had vaginal delivery and 76% received hospital care during childbirth. 32% had a history of abortion and 32% underwent episiotomy and forceps delivery. The average time elapsed since the last delivery was  $38.4 \pm 6.1$  years.

Table 2 –Features of obstetric history and menopause (n=25)

Variable	Value
<b>Age of onset of menopause</b>	49,1 ± 5,2
<b>Number of pregnancies</b>	3,8 ± 1,3
<b>Number of deliveries</b>	3,5 ± 1,2
<b>Prenatal follow-up, n (%)</b>	16 (64)
<b>NB Weight, n (%)</b>	
All with > 3000 g	18 (72)
All with < 3000 g	1 (4)
Mixed	6 (24)
<b>Stillborn RN, n (%)</b>	
None	22 (88)
≥ 1	3 (12)
<b>Type of delivery, n (%)</b>	
Vaginal	15 (60)
Cesarean	2 (8)
Both	8 (32)
<b>Type of assistance, n (%)</b>	
Hospital	19 (76)
Hospital and home	6 (24)
<b>Abortion History, n (%)</b>	
No	17 (68)
Yes	8 (32)
<b>Performance of episiotomy, n (%)</b>	8 (32)
<b>Delivery with forceps, n (%)</b>	8 (32)
<b>Time elapsed since last delivery, years</b>	38,4 ± 6,1

Source: Prepared by the authors.

Subtitle: NB = newborn.

The characteristics of the gynecological history, time of UI and knowledge of the treatment are presented in Table 3. Active sex life was reported by 44% of the elderly women, 68% reported that they used the contraceptive pill during their reproductive life, 32% of the participants had prolapse of pelvic organs and 32% underwent surgery to correct them, in addition to 20% who underwent perineoplasty and hysterectomy. The average time of UI was  $8.6 \pm 13.2$  years, 68% of the elderly women believed it was not normal to lose urine and 56% said they were aware of the physiotherapeutic performance in the treatment of UI. The use of absorbents was present in 32% of the sample.

Table 3 - Gynecological history, time of UI and knowledge of treatment (n=25)

Variable	Value
<b>Active sex life</b>	11 (44)
<b>Use of contraceptive method during reproductive life</b>	
Contraceptive pill	17 (68)
Did not use	3 (12)
Others	5 (20)
<b>History of gynecological conditions*</b>	
Pelvic organ prolapse	8 (32)
Fibroids	6 (24)
Abnormal vaginal bleeding	4 (16)
Recurrent urinary infection	3 (12)
Breast Cancer	3 (12)
Others	4 (16)
<b>History of gynecological surgeries</b>	
Surgery to correct pelvic organ prolapses	8 (32)
Perineoplasty	5 (20)
Hysterectomy	5 (20)
Others	7 (28)
<b>IU Time, years</b>	$8,6 \pm 13,2$
<b>Believes the loss of urine is abnormal</b>	17 (68)
<b>Know about the role of Physiotherapy in UI</b>	14 (56)
<b>Use of absorbents</b>	
No	17 (68)
Yes	8 (32)

. Source: Prepared by the authors.

Caption: UI = urinary incontinence, \* = each volunteer could have more than one gynecological condition.

Table 4 presents data on UI and quality of life. Mixed UI (IUM) was the most identified (64%), the most observed frequency of urine loss was once a week or less (68%), with a small amount (68%) and an average impact of  $5.6 \pm 1.5$  points on quality of life. The average amount of urine lost in the

Pad Test was  $4.5 \pm 8.2$  g, and this average was classified as mild loss. The KHQ domains with the highest means were UI impact ( $49.6 \pm 24$ ) and severity measures ( $42.3 \pm 22.4$ ).

Table 4 – UI type and averages of ICIQ-SF, Pad Test e KHQ (n=25)

Variable	Value
<b>UI Tipe</b>	
MUI	16 (64)
IUU	6 (24)
SUI	3 (12)
<b>ICIQ-SF – Frequency</b>	
One a week or less	17 (68)
Two or three times a week	5 (20)
Once a day	1 (4)
Several times a day	2 (8)
<b>ICIQ-SF – Quantity</b>	
Amount Small	17 (68)
Amount Moderate	7 (28)
Amount Lots	1 (4)
<b>ICIQ-SF - Impact</b>	$5,6 \pm 1,5$
<b>Pad Test (g)</b>	$4,5 \pm 8,2$
<b>KHQ</b>	
General health perception	$38,5 \pm 19,5$
Impact of urinary incontinence	$49,6 \pm 24$
ADL Limitations	$35,7 \pm 24,3$
Physical Limitations	$31 \pm 23,6$
Social Limitations	$22,4 \pm 19,4$
Personal Relationships	$8,8 \pm 17,7$
Emotions	$26,8 \pm 26,2$
Sleep and mood	$33,6 \pm 20,6$
Gravity Measurements	$42,3 \pm 22,4$
MUI IUU SUI	

Source: Prepared by the authors, based on Tamanini et al. (2004), Tamanini et al. (2003) and Krhut et al. (2014).

Caption: ICIQ-SF = *International Consultation on Incontinence Questionnaire - Short Form*, KHQ = King's Health Questionnaire, ADLs = activities of daily living, MUI = mixed UI, UUI = urge UI, SUI = stress UI.

When the results of the Pad Test were related to the domains of the ICIQ-SF and KHQ questionnaires, a regular, directly proportional and statistically significant correlation was observed between the Pad Test and the domains of general perception of health and sleep and disposition of the KHQ. Thus, the greater the urinary loss identified, the worse the general perception of health ( $r = 0.51$ ;  $p = 0.041$ ) and the worse the quality of sleep and disposition ( $r = 0.59$ ;  $p = 0.016$ ) and vice versa.



In addition, there was a regular, inversely proportional and statistically significant correlation between the Pad Test and the frequency of urinary loss in the ICIQ-SF ( $r = -0.48$ ;  $p = 0.047$ ). That is, the elderly women who had a higher volume of urine loss in the absorbent test reported a lower frequency of urine loss in the ICIQ-SF and vice versa.

## DISCUSSION

A considerable part of the sample was overweight and obese, corroborating the findings of Reigota et al.<sup>(11)</sup>, who evaluated the prevalence of UI and its association with multimorbidity in Brazilian women over 50 years of age; and identified that almost two-thirds of women with urinary loss had a BMI greater than 25 kg/m<sup>2</sup>, and this variable was associated with UI. In the research by Nygaard et al.<sup>(12)</sup>, the authors showed that, among obese women with indication for bariatric surgery, 53% of them had UI with a predominance of moderate severity of symptoms.

Regarding the presence of pathologies, hypertension and depression were the main health problems reported. Studies already carried out indicate a prevalence of hypertension that can vary from 48% to 75% in elderly women with UI<sup>(13-14)</sup>. When tracking depressive symptoms in women with UI, the most recent studies bring prevalences of 30% to 45%, highlighting the importance of a multidimensional evaluation aimed at these women<sup>(15-17)</sup>.

As for the obstetric history of the elderly women evaluated in this study, vaginal delivery was predominant, with newborn weight greater than 3000g and approximately one third of them underwent episiotomy and forceps delivery. Rodrigues et al.<sup>(18)</sup> observed a prevalence of 55% of vaginal delivery in women with UI, a result similar to that of the present study, but 51% of them underwent episiotomy, which expressed a higher percentage. In the study by Silva, Soler and Wysocki<sup>(19)</sup>, of 150 women undergoing urodynamic study, 41% of them underwent episiotomy and 75% had NB greater than 3000 g, and these results are very close to those of the present study.

Tähtinen et al.<sup>(20)</sup>, when assessing the risk of UI in the different types of vaginal delivery, found that forceps delivery increased the risk of SUI when compared to delivery with vacuum extractor. A finding that is in line with the present study, because, adding up the percentages of MUI and SUI found, it can be said that more than 75% of the elderly women suffered from loss of urine on exertion.

Also in relation to the obstetric profile of the sample, an average greater than 3 (three) was observed, both for pregnancies and parity. Corroborating the findings of the present study, Virtuoso, Menezes and Mazo<sup>(21)</sup> found a predominance of up to three vaginal deliveries (61%) and four or more pregnancies (63%) in elderly women with UI. Current evidence has also shown that parity and the

highest number of vaginal deliveries were variables associated with UI, and parity  $\geq 2$  can increase the risk of UI compared to nulliparity<sup>(22-23)</sup>.

Regarding the gynecological profile of the elderly women in this study, approximately one third of them had prolapse of pelvic organs, underwent correction surgery for them and some had previous hysterectomy. Juliato et al.<sup>(24)</sup>, when verifying the prevalence of UI in women, demonstrated that both anterior and posterior colporrhaphy and previous hysterectomy were factors associated with UI. España-Pons et al.<sup>(25)</sup> when applying the cough stress test - to check for loss of urine when coughing - to women waiting for pelvic organ prolapse surgery, found that of 297 women, 51% had a positive test.

In addition to the predominance of MUI, the most affected quality of life domains of the KHQ in the sample of this research were the impact of UI and severity measures. Corroborating these findings, Saboia et al.<sup>(26)</sup> investigated the impact of the type of UI on the quality of life of 556 women, and found that, in addition to MUI being the most prevalent, the UI impact domain (median 100) was also the one with the highest score - that is, the most negatively affected. Similar findings also in the study by Freitas et al.<sup>(27)</sup>, in which it was observed that the most affected quality of life domains were the impact of UI ( $54.1 \pm 24.8$ ), general perception of health ( $43.47 \pm 11.5$ ) and measures of severity ( $31.2 \pm 23.8$ ).

The average amount of urine lost by the volunteers in this research was classified as mild loss. The same result was also demonstrated by other authors in different studies, in which the average urine lost in the Pad Test was between 3 and 4 g in women with UI<sup>(9,28)</sup>.

In this study, there was a positive correlation between the Pad Test and the KHQ, suggesting that the elderly women with greater urine loss had worse general perception of health and worse quality of sleep and disposition. This result corroborates those evidenced by Moreno et al.<sup>(29)</sup>, who verified the prevalence of sleep disorders in 1,334 elderly people, demonstrating that the female sex, nocturia and UI were factors associated with difficulty sleeping.

However, the volunteers in this research, who presented a higher amount of urinary loss in the Pad Test, reported losing urine at a lower frequency in the ICIQ-SF. In the study by Wischnitzer et al.<sup>(30)</sup>, women who reported losing urine once or twice a week had a smaller amount in the Pad Test ( $8.9 \pm 10.6$  g) when compared to those who reported losing three times a week or more ( $13.1 \pm 13.6$  g). Such disagreement between the studies may be linked to differences in age and type of UI, because in the aforementioned study most women were between 20-50 years old and SUI was the most prevalent (97.7%). In addition, a lower frequency of urinary loss may also be related to a higher volume lost, as there is a longer time for bladder repletion to occur.

Finally, more research involving elderly women with UI should be conducted. It is suggested to carry out studies comparing the degree of muscle strength of the pelvic floor, or its electrical

activity, with gynecological and obstetric variables and urine loss; in order to strengthen and improve scientific evidence on the subject.

## CONCLUSION

It is concluded that the elderly women with UI participating in the community groups had urinary loss classified as mild, with losses in small quantities and low frequency of episodes. It was found that most of them had mixed UI and the quality of life domains most negatively affected were those of impact of UI and severity measures.

As for the obstetric history, there was a predominance of vaginal delivery, newborn weight greater than 3000g and more than a third of them underwent episiotomy and delivery with forceps. It is also observed that more than a third of them had prolapse of pelvic organs and underwent surgery to correct them. The associations verified in this research suggest that the greater the urine loss of the elderly, the worse the quality of sleep and disposition, the worse the general perception of health and the lower the frequency of urinary loss.

Since UI is a dysfunction that causes physical, social and psychological damage, leading to the limitation of activities of daily living and restriction in participation in groups and community, it is up to the physiotherapist to evaluate, intervene and prevent complications associated with UI. In addition, it is of great importance that the health professional brings quality information to this public, because adequate guidance and health education are important elements in the success of the physiotherapeutic intervention.

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