Prevalence of urinary incontinence, impact on quality of life and associated factors in users of Primary Health Care Units in Governador Valadares

Prevalência de incontinência urinária, impacto na qualidade de vida e fatores associados em usuárias de Unidades de Atenção Primária à Saúde

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Abstract

Introduction: Urinary incontinence (UI) has a considerable negative impact on quality of life, resulting in psychosocial, emotional and health impairment, high costs to the health system and limited activities of daily living. **Objective:** To describe the proportion of women with UI and its impact on quality of life (QOL), and investigate the factors associated with this condition among users of Primary Health Care Units (PHCUs) in the municipality of Governador Valadares, Minas Gerais state (MG), Brazil. **Methods:** Cross-sectional study with female users of the municipal PHCUs. A questionnaire compiled by the researchers was used for data collection. Participants who reported urine leakage in any situation completed the International Consultation on Incontinence Questionnaire - Short Form (ICIQ-SF). **Results:** A total of 201 women took part in the study, 36.32% of whom had UI and obtained a score of 7, indicating a moderate impact on their QOL. Urinary incontinence was associated with age, income, body mass index and parity. **Conclusion:** The proportion of women with UI corroborates the prevalence described by the International Continence Society (ICS), moderately impacting quality of life and indicating normalization of the problem. Urinary incontinence was also correlated with age, income, BMI and number of pregnancies. This demonstrates the need for health education strategies at PHCUs to prevent and treat UI in this group, as well as intersectoral activities to improve the income of the population in order to control modifiable risk factors.

Keywords: Primary Health Care. Quality of life. Urinary incontinence. Women's Health.

Resumo

Introdução: *A incontinência urinária (IU) causa considerável impacto negativo na qualidade de vida, ocasionando prejuízo psicossocial, emocional e higiênico, além de alto custo para o sistema de saúde e limitações nas atividades de vida diária.* **Objetivo:** *Descrever a proporção de mulheres com IU e o seu impacto na qualidade de vida, bem como investigar os fatores associados a essa condição de saúde entre usuárias de Unidades de Atenção Primária à Saúde (UAPS) do município de Governador Valadares, MG.* **Métodos:** *Estudo transversal realizado entre mulheres usuárias de UAPS do município. Um questionário elaborado pelas pesquisadoras foi utilizado para coleta de dados. As participantes que relataram queixa de perda urinária em qualquer situação responderam ao International Consultation on Incontinence Questionnaire - Short Form (ICIQ-SF).* **Resultados:** *Participaram do estudo 201 mulheres. A proporção de mulheres com incontinência urinária foi de 36,32% e entre essas o escore do ICIQ-SF teve mediana igual a 7 pontos, indicando impacto moderado na qualidade de vida. A incontinência urinária associou-se à idade, renda, índice de massa corporal e paridade.* **Conclusão:** *A proporção de mulheres com IU está de acordo com a prevalência descrita pela International Continence Society (ICS), impactando moderadamente na qualidade de vida, o que indica uma normalização do problema. Ademais, a IU esteve associada à idade, renda, IMC e número de gestações. Assim, estratégias de educação em saúde para esse grupo são necessárias, a fim de prevenir e tratar a IU nas UAPS, bem como ações intersetoriais para melhorar a renda da população, no sentido de controlar os fatores de risco que são modificáveis.*

Palavras-chave: *Atenção Primária. Qualidade de vida. Incontinência urinária.*

Introduction

Urinary incontinence (UI), defined as the involuntary leakage of urine, predominantly affects women.[1,2] The most common forms of UI are stress incontinence, when urine leaks during exertion such as coughing or sneezing, increasing intra-abdominal pressure; urge incontinence, when involuntary urine leakage is preceded by an intense urge to urinate and mixed incontinence, referring to a combination of stress and urge incontinence. Additionally, overactive bladder is a combination of symptoms that result in the need to urinate more frequently and at night, with or without urge incontinence, in the absence of a urinary tract infection or any other obvious pathology.[1,2]

According to the International Continence Society (ICS), the prevalence of UI among women varies between 25 and 45%, increasing with age.[2] Risk factors for UI described in the literature are age, pelvic floor muscle dysfunction, high blood pressure and diabetes, as well as gynecological and obstetric factors such as gynecological surgeries, menopause, number of pregnancies and deliveries, birthweight, episiotomy and having at least one traumatic vaginal delivery.[2,3]

UI has a considerable negative impact on quality of life (QOL), resulting in psychosocial, emotional and health impairment, high costs to the health system and limited activities of daily living.[4] It can also hamper work-related activities, resulting in less productive professionals or altering their work pace, in addition to increasing expenditure on incontinence underwear and other products.[4,5]

Its high prevalence, negative impact on the quality of life and functionality of women and elevated treatment and management costs classify UI as a public health issue.[6] This makes it important for the scientific community to investigate UI in as yet unexplored scenarios and populations, such as female users of Primary Health Care Units (PHCUs) in Governador Valadares, Minas Gerais state, Brazil.

Thus, given that no studies on the topic in this municipality were found, the present study aimed to describe the prevalence of women with UI and its impact on their quality of life, and investigate factors associated with the condition among PHCU users in Governador Valadares.

Methods

This was a cross-sectional study conducted from November 2017 to February 2018, in the municipality of Governador Valadares. The sample consisted of female PHCU users, aged 18 years or over. The PHCUs were chosen by draw, with at least one unit selected in each of the 19 municipal regions and two PHCUs drawn in each of the three largest regions, totaling 22 of the 59 existing units in the city. Women under 18 years old, those who were pregnant, had difficulty understanding the questions and could not complete the questionnaire or refused to participate were excluded from the sample.

For those who fit in the inclusion criteria and accepted to participate, data were collected via an in-person interview by a previously trained interviewer. The questionnaire was compiled by the researchers and contained 19 questions. The explanatory variables were divided into the following four blocks:

1. Demographic and socioeconomic data: age (in years), marital status (married or common-law relationship), self-declared race/color (white, nonwhite), schooling level (0 to 4 years, 5 to 8 years, 9 to 11 years, 12 years or more) and household income (up to three minimum wages and three or more minimum wages).

2. Lifestyle: smoking (smoker, nonsmoker) and leisure time physical activity, such as walking/running, swimming and/or water aerobics, in the past four weeks (yes or no).

3. Health: body mass index (BMI), calculated based on self-reported weight and height (underweight, normal weight, overweight and obese); self-reported diseases (none, one or more); and self-perceived health, evaluated using the question "Would you say your health is very good, good, reasonable, poor or very poor?" and categorized as good (very good or good) or poor (reasonable, poor and very poor).

4. Gynecological and obstetric history: menopause (yes or no); hormone replacement therapy (yes or no); previous pelvic surgery (yes or no); number of pregnancies (quantity); type of delivery (vaginal, cesarean section, vaginal and cesarean section); use of forceps (yes or no); episiotomy (yes or no); and birthweight of largest newborn (in kilograms).

It was also questioned about the presence or not of UI symptoms, that was determined by the following question: "In the past four weeks, have you leaked urine when coughing or sneezing, before getting to the bathroom, while exercising or for no obvious reason?", adapted from question one of the International Consultation on Incontinence Questionnaire - Short Form (ICIQ-SF). Women who reported leaking urine in any of these situations were deemed to have UI symptoms and answered the ICIQ-SF.

The ICIQ-SF, a short specific questionnaire that assesses the impact of UI on quality of life and qualifies urine leakage, has been translated and validated for the Brazilian population. The instrument contains four questions that evaluate the frequency, severity and impact of UI, as well as a set of eight self-diagnostic items related to the causes of UI or situations experienced by the women. The total score is obtained by adding the first three questions and varies from zero to 21 points, whereby the higher the score the greater the impact of UI on quality of life.[7]

In descriptive analyses, frequencies were calculated for the categorical variables, and age, number of pregnancies and birthweight of largest newborn for the ICIQ-SF score; due to nonparametric distribution, median and interquartile range were calculated. In order to determine the association between the presence of UI symptoms and the categorical explanatory variables, the chi-squared and Fisher's exact tests were used, the latter when the expected value in each cell was lower than 5. The association between the response variable and age, number of pregnancies and birthweight of the largest newborn was assessed by the Mann-Whitney test for non-normal distribution. The analyses were performed using STATA software, version 13.0, considering a significance level of 5%.

The study was approved by the Research Ethics Committee of the Federal University of Juiz de Fora (CAAE 72527917.2.0000.5147) and all the participants provided written informed consent.

Results

Participants were 201 women with a median age of 46 years, most of whom were married or in a common-law relationship (67.7%) and had a high school diploma (45.3%). In terms of income, 78.6% had a household income of less than three minimum wages and most (65.7%) self-declared as nonwhite. With respect to lifestyle, most of the women were nonsmokers (96.02%) and did not engage in physical activity (72.6%). In regard to health, approximately half (50.8%) of the participants were normal weight, most (61.1%) had no diseases and 74.6% perceived their health as good (Table 1).

In terms of the gynecological and obstetric history of the women studied, most (75.6%) were undergoing menopause and 65.2% had been submitted to pelvic surgery. The median number of pregnancies was two. Most of the participants reported only one vaginal delivery (44.56%), without forceps (89.3%), but with an episiotomy (60.1%). The remaining sample characterization data are presented in Table 2.

Table 1 - Sample characterization regarding demographic and socioeconomic, lifestyle, and health variables

Variable	n (median)	Total (n = 201) (1Q-3Q)
Age (years)	46	38-55
Marital status		
Married or common-law relationship	136	67.6
Schooling level (years)		
0 to 4	46	22.9
5 to 8	36	17.9
9 to 11	91	45.3
≥ 12	28	13.9
Income		
Up to 3 minimum weight	158	78.6
BMI		
Normal weight	102	50.8
Overweight	57	28.4
Obese	42	20.9
Race		
White	69	34.3
Nonwhite	132	65.7
Smoking		
Nonsmoker	193	96.0
Plyshical activity		
Yes	55	27.4
Comorbidity[1]		
Yes	123	61.1
Self-perceived health		
Good	150	74.6

Note: BMI = body mass index. [1]Woman who reported one or more diseases, such as: high blood pressure, diabetes mellitus, among others.

The proportion of women with UI was 36.32% (95%CI: 29.61 – 43.02%). The median ICIQ-SF score was 7 points, with 5 points corresponding to the first quartile and 9 to the third.

The data in Table 3 show the results of association analyses. According to these findings, UI was associated with age (p = 0.042), income (p = 0.045), BMI (p = 0.020) and number of pregnancies (p = 0.002). The remaining variables were not associated with UI in the sample investigated.

Table 2 - Sample characterization regarding gynecological and obstetric variables

Variable	n (median)	Total (n = 201) (1Q-3Q)
Menopause		
Yes	49	24.4
HRT		
Yes	13	6.5
Previous pelvic surgery		
Yes	131	65.2
Number of pregnancies	2	2.0 - 3.0
Type of delivery		
Vaginal	86	44.5
Cesarean section	80	41.5
Vaginal and cesarean section	27	13.9
Forceps[1]		
Yes	12	10.6
Episiotomy[2]		
Yes	68	60.1
BLNB	3,5	3.2 - 3.8

Note: HRT = hormone replacement therapy; BLNB = birthweight of largest newborn. [1]Sixty-eight participants had undergone a cesarean section, meaning there is no information on the use of forceps or episiotomy; the total sample for these variables was 133. [2]Missing data for eight participants who could not recall this information.

Discussion

With the exception of schooling level, the main demographic, socioeconomic, clinical and obstetric history characteristics of participants in the present study were similar to those of populations in other national and international investigations.[4,8,9] The results of the present study demonstrate that despite the low income of participants, most had a high schooling level. This contrasts with other Brazilian investigations, in which most women had only completed basic education.[4,8] This can be explained by the fact that our participants were middle-aged and may therefore have had better educational opportunities than the older women targeted by the aforementioned studies. Individuals treated under the Brazilian National Health System (SUS in Portuguese) exhibit low schooling levels and income, whereas those who use private healthcare are better educated, have a higher income and private health insurance.[10]

Table 3 - Association between urinary incontinence (UI) and the variables investigated

Variable	Women without UI		Women with UI		p-value
	n (median)	% (1Q-3Q)	n (median)	% (1Q-3Q)	
Age (years)	44	38 - 53	49	40 - 59	0.041*
Marital status					
Married or common-law relationship	39	30.5	26	35.6	0.453
Single/Widow/Divorced	89	69.5	47	64.4	
Schooling level (years)					
0 to 4	26	20.3	20	27.4	
5 to 8	21	16.4	15	20.6	0.241
9 to 11	59	46.0	32	43.8	
≥ 12					
Income (minimum wage)					
Up to 3	95	74.2	63	86.3	0.045**
3 or more	33	25.8	10	13.7	
Body mass index					
Normal weight	70	54.7	32	43.8	
Overweight	39	30.5	18	24.7	0.020**
Obese	19	14.8	23	31.5	
Race					
White	41	43.9	28	25.1	
Brown	64	61.1	32	34.9	0.716
Black	17	17.8	11	10.2	
Other	6	5.1	2	2.9	
Smoking					
Smoker	5	5.1	3	2.9	
Ex-smoker	17	19.1	13	10.9	0.652
Never smoked	106	103.8	57	59.2	
Physical activity					
Yes	40	31.3	15	20.6	0.102
No	88	68.8	58	79.5	
Comorbidity[1]					
No	83	64.8	40	54.7	0.273
Yes	45	35.1	33	45.2	
Self-perceived health					
Good	101	78.9	49	67.1	0.065
Poor	27	21.0	24	32.8	
Menopause					
Yes	28	21.9	21	28.8	0.274
No	100	78.1	52	71.2	
Hormone replacement therapy					
Yes	10	8.3	3	4.7	0.382
No	118	119.7	70	68.3	
Previous pelvic surgery					
Yes	81	63.3	50	68.5	0.456
No	47	36.7	23	31.5	
Number of pregnancies	2	1 - 3	3	2 - 4	0.021*
Type of delivery					
Vaginal	48	40.0	38	52.1	
Cesarean section	57	47.5	23	31.5	0.091
Vaginal and cesarean section	15	12.5	12	16.4	
Forceps					
Yes	6	9.5	6	12.0	0.671
No	57	90.4	44	88.0	
Episiotomy					
Yes	34	53.9	34	68.0	0.132
No	29	46.0	16	32.0	
BLNB	3.47	3.15 - 3.8	3.6	3.24 - 3.95	0.067*

Note: BLNB = birthweight of largest newborn. [1]Women who reported one or more diseases, such as high blood pressure, diabetes mellitus, among others. *Fisher's exact test significant at 5%. **Chi-squared test significant at 5%.

The proportion of women with UI in the present study was approximately 36%, which is consistent with the 25 to 45% described by the ICS for the female population.[2] However, other Brazilian studies have reported varying prevalences for different age groups. In a sample of women with an average age of 47.9 years, Junqueira et al.[11] found that 28% had UI, while a population-based study in São Paulo state in 2016 reported a UI prevalence of 52.3% in women over 50 years old.[4]

In regard to QOL, the median ICIQ-SF score recorded here was 7, representing a moderate impact (6-12) on the QOL of the women studied.[12] In a recent study, Alencar-Cruz and Lira-Lisboa[13] investigated incontinent women with an average age of 45.12 years and found that all the QOL domains of the King's Health Questionnaire were compromised, with the worst scores obtained for the impact of UI on QOL (average of 60.62). investigated incontinent women with an average age of 45.12 years and found that all the QOL domains of the King's Health Questionnaire were compromised, with the worst scores obtained for the impact of UI on QOL (average of 60.62).[4,13-15] The moderate impact observed on the sample may be because the women investigated were at the PHCUs seeking treatment for other health problems. Additionally, 67.12% of the women with UI perceived their health as good, meaning that since they may not view the condition as a health problem that needs treatment, its impact on their QOL is minimal.

Finally, in the present study UI was associated with age, income, BMI and number of pregnancies. The literature on the topic indicates that the prevalence of UI increases with age, as previously mentioned.[4,16] This is because aging is one of the main risk factors for UI, lowering estrogen levels in women undergoing menopause and reducing elastic and muscle fibers, resulting in weaker pelvic floor muscles (PFM).[17] Weakness in these muscles can reduce urethral closing pressure and support, altering UI mechanisms.[18]

With respect to income, Liu et al.[9] corroborated our results in reporting its association with the development of UI. The authors attributed this finding to the fact that individuals with a low income have limited access to healthcare services and occupations that require greater exertion, overloading the PFM. They concluded that people with higher earnings more often adopt preventive measures such as a healthy lifestyle, regular physical exercise and weight control, reducing their risk of developing UI.[9] Additionally, epidemiological studies

are categorical on the association between income and health-related outcomes, identifying low income as an important risk factor for different diseases, including dyslipidemia, heart disease, nervous system disorders, diabetes, respiratory diseases,[4,9,19,20] and microcephaly linked to the Zika virus.[21] A possible explanation for the correlation between income and other health events in these epidemiological studies is that people with a higher income have better access to health-related goods and services.[4,9,19-21]

In regard to BMI, a Brazilian population-based study[4] observed an association between BMI and UI, corroborating the results presented here. The literature highlights overweight and obesity as risk factors for UI.[2] There is evidence that obesity increases intra-abdominal pressure, predisposing these individuals to stress incontinence due to the resulting overload of the PFM, conjunctive tissue and pelvic floor innervation, which could lead to noticeable structural damage and neurological dysfunction.[2,22] On the other hand, metabolic syndrome associated with obesity predisposes individuals to stress incontinence.[2]

In regard to number of pregnancies, Nobrega et al.[23] reported a correlation between multiparity and UI, corroborating our findings. The PFM undergo anatomical and physiological changes during pregnancy, compromising their urinary continence function and making pregnancy an important risk factor for UI.[2] Additionally, the production of hormones such as relaxin during this period, which contributes to relaxing ligaments and structures, and multiparity, which heightens the response to hormones, may result in greater susceptibility to UI in subsequent pregancies.[24]

Certain methodological limitations of the present study should be taken into account when interpreting the results. The first is the lack of a clinical diagnosis of UI. Another potential limitation is information bias, since the data were self-reported and collected by means of a questionnaire. Additionally, the difficulty in establishing a temporal relationship between UI and associated factors precluded drawing conclusions on a causal relationship given the cross-sectional study design. Moreover, the conclusions of this study cannot be extrapolated to the general population because it involved a convenience sample of female health service users, who may differ from women in the general community. Finally, the sample size was not determined by calculation.

Conclusion

Despite its limitations, this study is important to the municipality of Governador Valadares, MG, since it is the first to investigate the topic.

It can be concluded that the proportion of women with UI in the city is consistent with that described by the ICS and that it has moderate impact on their quality of life. These findings could guide local healthcare professionals and administrators in proposing health promotion and UI prevention and treatment strategies based on the reality and context of these women. Given that factors associated with UI (BMI and income) are modifiable, health services, especially PHCUs, can develop strategies to prevent this condition, such as creating specific operational groups to train PFM and encouraging physical activity and a healthy diet in order to lower BMI. In regard to income, municipal administrators should adopt intersectoral initiatives to improve the income of this population, such as educational and economic policies. Finally, specific operational groups should be created to provide women with PFM exercises in order to prevent and/or treat UI.

Authors' contributions

CAA and CTV contributed to the idea formulation, study design, hypothesis and work objective. All authors contributed to the statistical analysis, writing of the manuscript, review and approval of the final version.

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