

## A Descriptive Cross-Sectional Study Determining the Prevalence and Factors of Urinary Incontinence among Postmenopausal Women Outpatient Service in a Tertiary Health Care Center

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### Abstract

**Aim:** The aim of the present study was to assess the type of urinary incontinence in postmenopausal women visiting outpatient in a tertiary health care sector and to determine the risk factors of urinary incontinence.

**Methods:** A hospital-based cross-sectional study was carried out in the OBG Department, Postmenopausal women of age 45–90 years, who came to the OBG department, were studied. 200 patients were interviewed in the 4 months of duration. All women with severe illness, mental illness, and those who refused to give consent were excluded.

**Results:** In the present study, 80% were vaginal delivery followed by LSCS. In 91% cases, delivery was assisted by Obstetrician. 70% were tea drinker and 96% patients were taking diuretics. The total prevalence of urinary incontinence in our study was 20%. Stress incontinence accounted for 12%, followed by mixed urinary incontinence, contributing 6% and finally, urge urinary incontinence - 2%. In this study, prevalence of urinary incontinence was more or less similar in women aged 75 and above (27%), women between 45 and 59 years (26.8%) and 60 and 74 years (25%). Of 15 variables studied, only 4 were found to be significant using bivariable analysis. These variables were chronic cough (P = 0.005), recurrent urinary tract infections (UTI) (P < 0.001), duration of labor (P = 0.025), and the type of delivery (0.032). Multivariable analysis was done using binary logistic regression - stepwise backward elimination method. All the variables having P value 0.2 or less were put in the model which included age, occupation, parity, menopausal age, duration of labor, type of delivery, diabetes mellitus, chronic cough, recurrent UTI, and physical activity. Chronic cough, recurrent UTI, and duration of labor were found to be independent risk factors.

**Conclusion:** Stress incontinence was found to be the major type of urinary incontinence in the postmenopausal women. Those having history of chronic cough, prolonged duration of labor, and recurrent UTI should be screened regularly for urinary incontinence.

**Keywords:** Postmenopausal Women, Urinary Incontinence.

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### Introduction

Urinary continence is quite common among women but it is not frequently reported. It significantly impacts the quality of life (QoL) of women. The International Continence Society defined urinary incontinence as the complaint of any involuntary leakage of urine which is a social or hygienic problem. [1] It has been estimated that globally 200 million are affected by urinary incontinence and this number may increase to 423 million. [2,3] As the age increases, prevalence of urinary incontinence increases. As per Norton P et al<sup>3</sup> study it was found that 7% women (age 20-39 years) were found to be suffering from moderate to severe

urinary incontinence, 17% in the age group of 40-59 years, 23% in the age of 60-79 years and 32% in the age of more than or equal to 80 years.

Due to under-reporting of this problem, these number might not be reflecting the true picture of the disease burden. [4] Some of the prominent risk factors of urinary incontinence are increasing age, higher parity, overweight and obesity, tendency to constipation, respiratory disease and vaginal deliveries. [5] Although it is not associated with mortality but there is significant morbidity as the lack of ability to control urine is distressing and

unpleasant. It is associated with lot of stress, social issues and thus affects quality of life. [6] Urinary incontinence not only affects the physical and psychological well-being but also has an adverse impact on quality of life related to social and sexual health. [7] Urinary incontinence has been classified as social disease by World Health Organization. This is due to the fact that urinary incontinence has been said to affect more than 5% of the general population. Incidence of urinary incontinence in women with postmenopausal status and around menopause is 30-60%. In women with age 50-60 years and more than 80 years, the incidence is around 50%. [8,9]

If the leakage of the urine takes place involuntarily while doing any strenuous activity, it is called as stress urinary incontinence and it is very common form of urinary incontinence. Another type is urgency incontinence where there is urgency along with involuntary urine loss. Mixed incontinence is one type in which the involuntary urine loss is associated with some effort like cough etc along with urgency. [10,11]

The aim of the present study was to assess the type of urinary incontinence in postmenopausal women visiting outpatient in a tertiary health care sector and to determine the risk factors of urinary incontinence.

### Materials and Methods

A hospital-based cross-sectional study was carried out in the OBG Department. Postmenopausal women of age 45–90 years, who came to the OBG

department, were studied. Department of Community Medicine, Government Medical College and Hospital, Miraj, Maharashtra, India, 200 patients were interviewed in the 4 months of duration. All women with severe illness, mental illness, and those who refused to give consent were excluded.

All postmenopausal women of age 45–90 arriving to the gynecology OP were informed, and consent was taken. Consent was obtained from the respondent or a respondent-approved family member through signature, when the respondent did not know how to put a signature and did not want to give a thumb impression.

The details of sociodemographic factors, amount of physical exercise, habits of tobacco smoking/chewing and alcohol, use of beverages, use of medications, and obstetric gynecological predisposing factors were assessed through an interview schedule. The type of incontinence was diagnosed using QUID questionnaire, a validated 6 questionnaire which is used to calculate the stress incontinence score, urge incontinence score, and mixed incontinence score. The data were collected and compiled in MS Excel. The data were analyzed in SPSS 16 trial version. After estimating the prevalence, a secondary case control analysis was done. Bi-variable analysis with urinary incontinence was done using Pearson's Chi-square test. Multivariable analysis was done using binary logistic regression.

### Results

**Table 1: Distribution of study participants based on obstetric factors, comorbidities, habits and medications**

Factors	N (%)
Hysterectomy	40 (20)
Pelvic organ prolapse surgery	8 (4)
Adnexal surgery	184 (92)
Dilatation and curettage	160 (80)
<b>Type of delivery</b>	
Vaginal delivery	160 (80)
LSCS	20 (10)
Vaginal delivery and LSCS	10 (5)
Not applicable	10 (5)
<b>Delivery assisted by</b>	
Obstetrician	182 (91)
Local midwife	12 (6)
Medical officer	2 (1)
Not applicable	4 (2)
<b>Physical activity IPAQ category</b>	
Active	160 (80)
Inactive	40 (20)
<b>Co-morbidities</b>	
Diabetes mellitus	60 (30)
Chronic cough	10 (5)
Recurrent UTI	24 (12)

Constipation	30 (15)
<b>Caffeine intake</b>	
Tea	140 (70)
Tea and coffee	36 (18)
Coffee	14 (7)
Nonuser of tea or coffee	10 (5)
<b>Medications</b>	
Diuretics	192 (96)
Anti-hypertensives	128 (64)

In the present study, 80% were vaginal delivery followed by LSCS. In 91% cases, delivery was assisted by Obstetrician. 70% were tea drinker and 96% patients were taking diuretics.

**Table 2: Distribution of different types of urinary incontinence (%)**

Types of urinary incontinence	N%
NUI	160 (80)
MUI	12 (6)
SUI	24 (12)
UII	4 (2)

The total prevalence of urinary incontinence in our study was 20%. Stress incontinence accounted for 12%, followed by mixed urinary incontinence, contributing 6% and finally, urge urinary incontinence - 2%.

**Table 3: Proportion of urinary incontinent and normal individuals in different age groups**

Age groups	Normal %	Urinary incontinent %
45-59	73.2	26.8
60-74	75	25
>75	72.7	27.3

In this study, prevalence of urinary incontinence was more or less similar in women aged 75 and above (27%), women between 45 and 59 years (26.8%) and 60 and 74 years (25%).

**Table 4: Bivariable analysis - risk factors associated with urinary incontinence**

Variable	Category	P	Crude OR	95% CI of Crude OR
Age	<75	0.174	0.620	0.331-1.225
Occupation	Homemaker	0.075	0.590	0.324-1.073
Physical activity	Inactivity	0.160	1.146	0.864-2.417
Parity	Unipara	0.100	0.518	0.234-1.147
Diabetes	No	0.135	0.700	0.438-1.119
Age at menopause	>45	0.148	1.433	0.880-2.335
Chronic cough	Yes	0.005	3.816	1.383-10.530
Recurrent UTI	Yes	<0.001	4.201	2.273-7.989
Duration of labour	<8 h	0.025	0.600	0.379-0.950
Type of delivery	Vaginal	0.032	2.553	1.47-6.222

Of 15 variables studied, only 4 were found to be significant using bivariable analysis. These variables were chronic cough (P = 0.005), recurrent urinary tract infections (UTI) (P < 0.001), duration of labor (P = 0.025), and the type of delivery (0.032).

**Table 5: Multivariable analysis - independent risk factors of urinary incontinence**

Variable	Category	P	Adjusted OR	95% CI of Adjusted OR
Chronic cough	Yes	0.014	3.843	1.315-11.229
Recurrent UTI	Yes	<0.001	4.110	2.164-7.808
Duration of labour	<8 h	0.022	0.570	0.352-0.921

Multivariable analysis was done using binary logistic regression - stepwise backward elimination method. All the variables having P value 0.2 or less were put in the model which included age, occupation, parity, menopausal age, duration of labor, type of delivery, diabetes mellitus, chronic cough, recurrent UTI, and physical activity. Chronic cough, recurrent UTI, and duration of labor were found to be independent risk factors.

## Discussion

Menopausal transition is a biological situation associated with reproductive function loss and various health problems. [12] Menopause, the permanent cessation of menstruation, results from the loss of ovarian follicular activity [13]; it occurs between 45 and 55 years of age. Women spend about one-third of their lives in the postmenopausal period. [14] Menopausal symptoms include

physical and vasomotor symptoms (hot flushes and night sweats), osteoporosis, urinary tract atrophy and infections, urinary incontinence (UI), increased risk of cardiovascular diseases, decreased libido, and sexual dysfunction. [15] In this study, prevalence of urinary incontinence was more or less similar in women aged 75 and above (27%), women between 45 and 59 years (26.8%) and 60 and 74 years (25%). Urinary incontinence is an important multifactorial health condition that can deteriorate one's quality of life. One thing we noticed during this study was that most of the women were oblivious of their condition and considered themselves as "normal" and considered urinary incontinence, as a "natural consequence" of aging. This may be the main reason why it always goes unnoticed and underreported and this clearly depicts the "iceberg phenomenon."

In the present study, 80% were vaginal delivery followed by LSCS. In 91% cases, delivery was assisted by Obstetrician. 70% were tea drinker and 96% patients were taking diuretics. The total prevalence of urinary incontinence in our study was 20%. Stress incontinence accounted for 12%, followed by mixed urinary incontinence, contributing 6% and finally, urge urinary incontinence - 2%. In this study, prevalence of urinary incontinence was more or less similar in women aged 75 and above (27%), women between 45 and 59 years (26.8%) and 60 and 74 years (25%). In a study done by Nojomi et al., urinary incontinence was higher among age group > 55 years. [16] Another study done by Singh et al. showed a low prevalence in age groups < 20 (7.6%), 31-40 years (11.6%) and > 70 years (20%) and the highest incidence among 61-70 years (42.8%). [11] Chronic cough, recurrent UTI, and duration of labor were obtained as independent risk factors. Chronic cough has a direct association with urinary incontinence. [17] If there is a sudden increase in the intra-abdominal pressure that may produce the exhaustion of pelvic floor muscles. Even a momentary relaxation of these muscles may leak urine. Recurrent UTIs may be treated as a trivial matter by the community for which they resort to home remedies and drinking fluids in plenty and hardly taken seriously as a medical condition. But it is widespread and requires a proper diagnosis and treatment. [18]

Prolonged labor may act as a direct cause for pelvic floor dysfunction like nerve or muscle damage, direct tissue stretching, and disruption. A gynecologist's intervention during labor in case it is prolonged will include episiotomy which prevents harmful perineal tears and reduces the risk of perineal weakness. This may decrease the risk of pelvic organ prolapse and urinary incontinence. [19] However, there are many other recent studies saying episiotomy is not effective. Prolonged labor

have been shown by other studies also as an associated factor for developing urinary incontinence, and physiological changes during delivery are attributed as a potential cause. [20] While this study shows a decrease in the incidence of urinary incontinence among those who underwent cesarean section, hence concluding that it is a protective factor, the study done by Nojomi et al. brought out no difference between those who underwent previous caesarean section and nulliparous women. However, in the same study, the previous vaginal delivery was a risk factor. [16] The significance of caesarean section in our study obtained in bivariable analysis was lost in multivariable analysis though. This may have been due to the presence of duration of labor as a variable in the model which came out as an independent risk factor. Longer durations are invariably associated with vaginal delivery.

Previous studies have shown that multiparity, diabetes mellitus, obesity, hysterectomy and other pelvic surgeries, physical activity, constipation, and high caffeine intake to be high risk factors of urinary incontinence. [21] In another study done by Kiran Panesar in the USA, pharmacologic agents including oral estrogens, alpha-blockers, sedatives, antidepressants, antipsychotics, angiotensin-converting enzyme inhibitors, loop diuretics, nonsteroidal anti-inflammatory drugs, and calcium channel blockers have been implicated to cause the onset and some degree of exacerbation of urinary incontinence. [22] Our study did not show any of these associations which might have been due to our secondary case-control mode of analysis rather than going for a case-control study.

### Conclusion

The prevalence of urinary incontinence in our study is 25% and is mainly contributed by stress incontinence. This study revealed chronic cough, recurrent UTI, and prolonged duration of labor to be independent risk factors for the development of urinary incontinence in postmenopausal women.

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