

## Original Research Article

# Prevalence of urinary incontinence in women

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### ABSTRACT

**Background:** Urinary incontinence (UI) is a common gynaecological problem among women, causing both physical and psychological distress in them. It is one of the neglected as well as an under-reported issue not only in India but globally also. Thus, this matter needs to be addressed and explored because of the paucity of the literature available especially on Indian population. Therefore, the aim of the study was to find out the prevalence of UI in women which will aid in addressing such critical issues.

**Methods:** Data was collected by using an online survey via Google forms sent through social media. Total 118 women respondents aged between 20-70 years participated by filling the form. It included an Informed Consent form, Socio-demographic details, Obstetric and Gynaecological history along with a QUID questionnaire. UI was classified as stress, urge and mixed type.

**Results:** The overall prevalence of UI was found to be 27.1%. Stress UI (43.7%) was the most common type followed by Mixed UI (31.2%) and then the Urge UI (25%).

**Conclusions:** The study outlines a prevalence of 27.1% of UI among women, as a result making it a substantial problem in the society. Emphasis should be laid on the need of creating vigorous awareness among women as well as on the timely introduction of different physiotherapy-cum-rehabilitative programs in order to abate such problems.

**Keywords:** Prevalence, Urinary incontinence, Stress urinary incontinence, Mixed urinary incontinence, Urge urinary incontinence

### INTRODUCTION

Urinary incontinence is defined as “complaint of any involuntary loss of urine.” It is a common gynaecological problem among women which creates distress and have negative impact on their quality of life.<sup>1,2</sup> It is usually one of the most neglected and under-reported areas of woman’s health as most of them are either hesitant to report about their symptoms or they take it as a normal part of aging process.<sup>3</sup> It may lead to anxiety, depression, sleep disturbances and even falls and fractures in such cases.<sup>4</sup> The overall prevalence of UI ranges from 8-45% in women across the world.<sup>5</sup> Prevalence of UI in middle aged women is nearly 30%-40% and about 50% in older women.<sup>6</sup> Potential risk factors for UI include increasing

age, parity, vaginal deliveries, obesity, pelvic surgery, diabetes mellitus, depression, constipation, and chronic respiratory problem.<sup>7</sup>

UI can be classified into 3 types according to the etiology and pathophysiology i.e., Stress UI (SUI), Urge UI (UII) and Mixed UI (MUI). According to the International Urogynecological Association (IUGA) and the International Continence Society (ICS), SUI is defined as complaint of involuntary loss of urine during exertion or on coughing, sneezing, or laughing. Physical exertion increases intra-abdominal pressure which causes urine to leak. Urgency UI or Urge UI is also known as overactive bladder and it is associated with involuntary contractions of the detrusor muscles of the bladder at inappropriate

times. It is the complaint of involuntary loss of urine associated with urgency. MUI is defined as the complaint of involuntary loss of urine associated with urgency and with effort or physical exertion or on sneezing or coughing.<sup>8</sup>

According to the available literature, very scarce data is available in India regarding the prevalence of urinary incontinence and other urological problems. Most of the women usually feel uneasy to talk about it or they think it is untreatable. That is why it is amongst one of the ignored areas in concern to women’s health not only in India but globally also. Thus, the aim of the study was to find out the prevalence of UI in women which will not only help in adding up to the existing literature but also in addressing such critical issues which will bring the awareness among women by imparting knowledge. Hence this will aid in designing appropriate preventive and rehabilitative protocols according to the findings and will help in curtailing such problems in women in near future.

**METHODS**

It is a cross-sectional study which was conducted from February 2022- March 2022 to estimate the prevalence of UI among females aged between 20-70 years. Total 118 women participated in the study. The primary outcome

measure used in this study was QUID questionnaire (Questionnaire for female urinary incontinence diagnosis).<sup>9</sup>

**Procedure**

For data collection, an online questionnaire was made available to the female volunteers via Google forms which was sent randomly through social media (Wat’s app). All the participants gave their consent before participating in the survey. It was divided into 4 sections which included: Informed Consent Form, Socio-demographic details (7 questions), Obstetric and Gynaecological history (12 questions) and the QUID questionnaire. It is a self-administered, 6-item questionnaire designed to distinguish between SUI and UUI. The QUID is a short, reliable, and valid tool for diagnosing the type of UI.<sup>9</sup> The first three questions were used to diagnose SUI and next three questions to diagnose UUI. Each item was given a score of 0-5 (0-none of the time, 1- rarely, 2- once in a while, 3- often, 4- most of the time and 5-all the time). Individuals with a total score of ≥4 for the first three questions were diagnosed with SUI and ≥6 for the last three questions were diagnosed with UUI (Figure 1). As the study was of a survey format, ethics committee review was not taken. However, the principles of the Declaration of Helsinki were observed while conducting the study.

	None of the time Score=0	Rarely Score=1	Once in a while Score=2	Often Score=3	Most of the time Score=4	All of the time Score=5
Do you leak urine (even small drops), wet yourself, or wet your pads or undergarments:						
1. When you cough or sneeze?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. When you bend down or lift something up?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. When you walk quickly, jog or exercise?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. While you are undressing in order to use the toilet?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Do you get such a strong and uncomfortable need to urinate that you leak urine (even small drops) or wet yourself before reaching the toilet?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Do you have to rush to the bathroom because you get a sudden, strong need to urinate?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Figure 1: Questionnaire for urinary incontinence.**

**Statistical analysis**

The statistical measures obtained were frequency and the percentages.

**RESULTS**

Out of 118 women, 32 (27.1%) reported for UI. The mean age of women who participated in the study was 44.84 years. Maximum respondents (n=43, 36.4%) belonged to the 50-60 years of age group. 97.5% (n=115) of the subjects were from urban area while only 2.5% (n=03)

were from rural area. 91.2% (n=106) of women were married, 7.6% (n=09) were un-married, 1.7% (n=02) were divorced while 0.8% (n=01) were widow. Based on educational qualification, 81.4% (n=96) females were post-graduates, 16.1% (n=19) were under-graduates and 2.5% (n=03) were high-school pass outs. 65.3% (n=77) female respondents were professionals whereas 34.7% (n=41) were housewives. 50.9% (n=60) of the women were doing some form of exercises on routine basis while 49.1% (n=58) were not doing any routine exercises. Majority of the females were non-lactating (94.7%, n=112) mothers (Table 1).

**Table 1: Socio demographic characteristics of the study participants.**

Characteristics	Frequency	Percentage	
Age (in years)	20-30	17	14.4
	30-40	31	26.2
	40-50	19	16.1
	50-60	43	36.4
	60-70	08	6.7
Address	Urban	115	97.5
	Rural	03	2.5
Educational qualifications	High school	03	2.5
	Graduate	19	16.1
	Post- graduate	96	81.4
Occupation	Housewife	41	34.7
	Professional	77	65.3
Status	Unmarried	9	7.6
	Married	106	91.2
	Divorced	02	1.7
	Widow	01	0.8
Do you exercise regularly?	Yes	60	50.9
	No	58	49.1
Are you a lactating mother?	Yes	6	5.1
	No	112	94.7

**Table 2: Obstetric and gynaecological characteristics of the study participants.**

Characteristics	Frequency	Percentage	
Are you pregnant?	Yes	03	2.5
	No	115	97.5
How many children do you have?	None	22	18.6
	1	29	24.6
	2	63	54.5
	3	03	02.5
	4	01	0.8
	≥5	0	0
	What is the age of the youngest child?		
	1-10	26	27.6
	10-20	21	22.3
	20-30	38	40.4
	30-40	08	8.4
	40-50	01	1
What was the mode of delivery?	Cesarean section (C-Section)	30	30.9
	Normal vaginal delivery (NVD)	56	57.7
	Delivery with help of forceps (DWF)	05	6.3
	Vacuum-assisted vaginal delivery	02	2.1
	Cesarian section after a trial of labor	03	3.1
Did you have any complications during pregnancy?	Yes	10	10.4
	No	86	89.58
Do you suffer from any gynaecological problem?	Yes	43	36.4
	No	75	63.5
Have you sought any treatment for your problem?	Yes	13	11
	No	30	25.4
	Not needed	103	87.2
If yes, then kindly mark the treatment taken.	Advice from gynaecologist	08	61.5
	Exercises	03	23

Continued.

Characteristics	Frequency	Percentage	
	Electrical stimulation	0	0
	Cupping	0	0
	Ayurvedic/homeopathic	0	0
	Others	02	15.3
<b>Do you suffer from any of these health problems?</b>	Diabetes	08	6.7
	Chronic constipation	08	6.7
	Chronic urinary tract infection	01	0.9
	Chronic cough	02	1.6
	Asthma	01	0.9
	Any neurological problem	04	3.3
	None of the above	94	79.6
<b>Have you undergone hysterectomy or any other surgery of abdomen?</b>	Yes	10	8.5
	No	108	91.5
<b>Do you have any vaginal discharge?</b>	Yes	28	23.7
	No	90	76.2
<b>Does your urine leak?</b>	Yes	32	27.1
	No	86	72.8

**Table 3: Prevalence of UI among the study participants.**

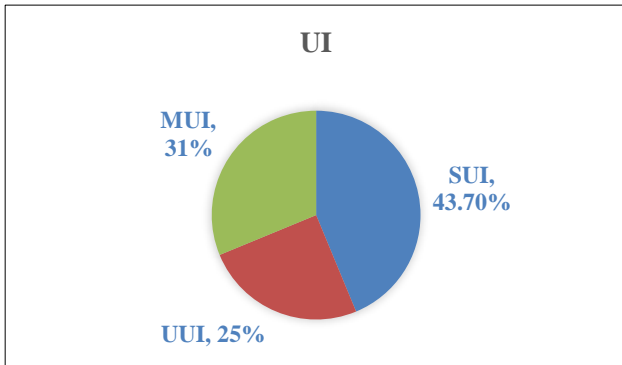
Type of UI	Age (in years)	No. of subjects	Total percentage
<b>Stress UI</b>	20-30	0	0
	30-40	04	12.5
	40-50	01	3.1
	50-60	08	25
	60-70	01	3.1
<b>Urge UI</b>	20-30	0	0
	30-40	02	6.2
	40-50	0	0
	50-60	04	12.5
	60-70	02	6.2
<b>Mixed UI</b>	20-30	01	3.1
	30-40	01	3.1
	40-50	02	6.2
	50-60	06	18.7
	60-70	0	0

According to the obstetric and gynaecological data of the study, 97.5% (n=115) respondents were not pregnant. Maximum respondents had two children (n=63, 54.5%), 24.1% (n=29) had one child, 18.6% (n=22) had no children, 2.5% (n=03) had three children while 0.8% (n=01) had four children. Most of the respondents (n=38, 40.4%) youngest child's age was between 20-30 years of age group. Regarding the mode of delivery, 58.3% (n=56) of the respondents had normal vaginal delivery, 31.2% (n=30) had caesarean section, 5.2% (n=05) reported that they had delivery with help of forceps while 2.1% (n=02) had vacuum-assisted vaginal delivery and 3.1% (n=03) had caesarean section after a trial of labour. 89.58% (n=86) of women had no complications during their pregnancy whereas 10.4% (n=10) reported of some sort of complications during their pregnancy. 36.4% (n=43) of women informed that they suffer from any

gynaecological problem whereas 63.5% (n=75) of women have no such problems.

When asked about whether they have sought any treatment for their problem, out of 43 women, 13 (11%) had taken some sought of treatment for their problem while 30 (25.4%) had not taken any sought of treatment. In respect to the treatment taken, 8 (61.5%) out of 13 women took advice from the gynaecologist for their problem, 3 (23%) did exercises and 2 (15.3%) took some other treatment. Regarding the health issues among the women, most of the respondent (79.4%) had no health issues while 8 (6.8%) of them reported of having diabetes and chronic constipation, 4 (3.3%) respondents suffered from neurological problem, 2 (1.6%) had chronic cough and 1 (0.9%) suffered from asthma and chronic urinary tract infection. There were 10 (8.5%) respondents who had a history of hysterectomy or any other abdominal

surgery whereas 108 (91.5%) women had no such history. 28 (23.7%) women out of 118 (76.2%) reported for abnormal vaginal discharge (Table 2).



**Figure 2: Distribution of study population based on the presence of UI.**

Out of 118 women, 32 (27.1%) reported the problem of UI which was diagnosed by using QUID questionnaire. Thus, SUI was found to be the most common type among them. In the present study, 43.7% prevalence of SUI was seen followed by 31.2% prevalence of MUI and 25% for UUI (Figure 2). The most affected age group was between 50-60 years in all the types of UI. 24 (75%) women out of 32 who reported UI had two children, 7 (22.5%) had one child and 1 (3.2%) had 3 children. 50% (n=16) of women had vaginal discharge along with UI. The most common mode of delivery among women who reported UI was normal vaginal delivery (n=19, 59.3%) (Table 3).

## DISCUSSION

The observed overall prevalence of UI in this study was 27.1%. Similar prevalence of UI was also reported in Gujarat (29.3%) and in West Bengal (27.7%).<sup>10,11</sup> Various other studies have also reported of similar results where prevalence of UI has been reported between 25%-45%.<sup>5,12,13</sup> SUI was commonest type of UI reported by 43.7% of females followed by MUI (31.2%) and UUI (25%). These results were identical to other studies where the SUI was found to be the commonest type of UI among women.<sup>10,14</sup> In the present study the prevalence of UI increased with the progressing age and these findings were consistent with other studies where same results were reported.<sup>13</sup> In a study done by Nojomi et al., UI was higher among the age group >55 years of age.<sup>15</sup> Aging may lead to changes in lower urinary system which can further decrease the detrusor muscle contraction, decrease pelvic floor muscle resistance, and increase in the residual volume.<sup>16</sup> Advanced age, inadequate estrogen levels, previous vaginal surgery and certain neurologic lesions are associated with poor urethral sphincter function and thus are potential risk factors for UI.<sup>17</sup> It was also seen that 19 (59.3%) women out of 32 who reported of UI, had a history of normal vaginal delivery (NVD). The pelvic floor supports the bladder and urethra. If this area gets

stretched, weakened, or damaged during pregnancy or child birth, then it may lead to SUI.<sup>6</sup> NVD causes stretching and tearing of the pelvic floor muscles, which may lead to incontinence. This agrees to many other studies that showed there is increased prevalence of UI after vaginal deliveries.<sup>2,18,19</sup> In our study, 75% of women who reported for UI, had two children. Thus, with increase in parity the prevalence of UI also increases. This is in accord with a similar study which states that women with  $\geq 2$  parity have increased risk for UI, especially SUI.<sup>20</sup> Studies report that repeated deliveries cause damage to the perineal muscles as well as the soft tissues around the perineal area leading to UI.<sup>6</sup> Total 23.7% (n=28) of women complained of vaginal discharge. Out of 32 women, who had UI, 16 (50%) women had vaginal discharge along with UI. Urinary symptoms and vaginal discharge can be present at the same time and can co-occur in conditions like sexually-transmitted infections and in cases of vaginitis. Vaginitis of any cause could be associated with urinary infection and incontinence.<sup>22</sup> 36.4% of women reported that they suffer from any gynaecological problem while out of them only 11% (n=13) of women reported that they sought any treatment for their gynaecological issues. Such problems are mostly overlooked and under-reported due to shyness, embarrassment, and hesitancy.<sup>3,21,23</sup> According to Dionko et al., only 40% of patients bring their issue to the physicians.<sup>24</sup> In one survey, only 22% of men and 45% of women experiencing weekly incontinence sought medical care.<sup>18</sup> The problem of UI is more prevalent in India because many women most of the times do not seek any treatment for their health problems.<sup>23</sup> Therefore, all these factors indicate that UI is a prevalent problem among women which needs attention. Emphasis should be laid on the need of creating vigorous awareness among women as well as on the timely introduction of different physiotherapy-cum-rehabilitative programs in order to abate such problems. Pelvic floor exercises can play an instrumental role in UI as well as in perinatal and post-natal phases.

## Limitations

Small sample size. Recall bias might be present for some while filling the questions in obstetric and gynaecological part. All the data was self-reported by the study participants. It was not filled under the supervision of therapist.

## CONCLUSION

The study outlines a prevalence of 27.1% of UI among women, as a result making it a substantial problem in the society. SUI is the most common form of UI. The results of the study cannot be generalized much because of heterogeneity of the definition of UI and variance of sample size among the studies. Future studies are recommended where large sample size can be taken. Educating women regarding exercises and other



rehabilitative protocols may improve the treatment seeking trends towards this problem.

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