

# Clinical study of urinary incontinence in women at a tertiary care centre

Savitha Desai<sup>1</sup>, Shraddha S. Sabnis<sup>2</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Ayaan Institute of Medical Sciences, Kanaka Mamidi Village, Moinabad, Telangana, India

<sup>2</sup>Department of Obstetrics and Advanced Laparoscopy, Wockhardt Hospital, Nashik, Maharashtra, India

## Abstract

**Background:** Urinary Incontinence is often underreported, undiagnosed and untreated. Though the prevalence increases with age it can occur even in younger age women. Validated questionnaires are available to establish the association of risk factors and diagnose the type of incontinence.

**Objective:** To study risk factors and the impact of Urinary Incontinence on quality of life in women.

**Methods:** Descriptive Cross-Sectional study was carried out among 230 women with symptoms of urinary incontinence. ICIQ-FLUTS a brief and psychometrically robust patient-completed questionnaire for evaluating female lower urinary tract symptoms and impact on quality of life (QoL) was used. The data was analysed using proportions.

**Results:** Most commonly affected age group was 41-50 years (42%). Storage phase symptoms were seen in 78.6% women, and Incontinence was seen in 36.08% women. Stress incontinence was commonest (55.65%) with an average bothersome score of 3.1/10. Moderate to severe degree of Stress Incontinence with a score >5/10 was seen in 15.65% of women. Frequency incontinence was seen in 33.47% of respondents. Average bothersome score of stress and urge incontinence was 3.1/10. They showed as average score of 1.36 and 1.44 respectively. Nocturia was commonest symptom in storage phase symptoms (78.69%). Urgency and Frequency was noted in 55.65% and 50.43% of women respectively. Intermittency was the commonest in voiding phase symptoms seen in 19.56% with an average score of 1.44/4.

**Conclusion:** Stress urinary incontinence was the most common type of urinary incontinence. Urinary incontinence significantly affected the quality of life of women.

**Key words:** incontinence, urge, quality of life, bothersome

## 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"<sup>[1]</sup>.

It has been estimated that globally 200 million are affected by urinary incontinence and this number may increase to 423 million<sup>[2,3]</sup>. 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<sup>[3]</sup>. Due to under-reporting of this problem, these number might not be reflecting the true picture of the disease burden<sup>[4]</sup>.

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<sup>[5]</sup>.

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<sup>[6]</sup>.

Urinary incontinence not only affects the physical and psychological well-being but also has an adverse

## Corresponding Author:

**Dr. Shraddha S. Sabnis,**

Senior Consultant, Department of Obstetrics and Advanced Laparoscopy, Wockhardt Hospital, Nashik, Maharashtra, India.

E-mail: drshraddhasabnis@gmail.com

impact on quality of life related to social and sexual health<sup>[7]</sup>. 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%<sup>[8,9]</sup>.

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<sup>[10,11]</sup>. Bladder or sphincter disorder results in a symptom of urinary incontinence. But this symptom character affects the quality of life of women significantly in any age group. It has been shown by epidemiological studies that severity of urinary incontinence is directly related with reduced quality of life<sup>[11,12]</sup>.

Holistic well-being is affected badly by urinary incontinence<sup>[12,13]</sup>. There is loss of self confidence and social events are more likely to be missed by women thus affecting the social life apart from psychological health and sexual life. Urinary incontinence is also a risk factor for other diseases<sup>[11,13]</sup>.

In India, women generally do not reveal the symptom of urinary incontinence due to culture pressure. The health seeking behaviour is low in India especially for urinary incontinence and also a very low quality of life due to factors like low levels of awareness, embarrassment, financial problems and fear associated with the treatment<sup>[13,14]</sup>.

This study was undertaken to study the age specific prevalence rates and risk factors associated with it using International Consultation on Incontinence Questionnaire Female Lower Urinary Tract Symptoms Modules (ICIQ-FLUTS) questionnaire.

#### **Material and methods:**

This was a descriptive cross-sectional study carried out from April 2013 to September 2013 at Krishna Institute of Medical Sciences, Secunderabad. Two hundred and thirty (n=230) women who attended for the routine at the out-patient department of Obstetrics and Gynecology with symptoms suggestive of urinary incontinence were enrolled in the study. They were explained about the purpose of the study, the questionnaire and informed consent was taken. Privacy and confidentiality were maintained. Junior doctors and paramedical staff were appointed to help

them in understanding the questions. Those who were identified to have the problem were counselled regarding the condition and guided them to approach the specialist. Institution Ethics committee permission was obtained.

There were 12 questions (Nocturia, Urgency, Bladder pain, Frequency, Hesitancy, Straining, Intermittency, Urge, urinary incontinence, Frequency of urinary incontinence, Stress urinary incontinence, Unexplained urinary incontinence, Nocturnal enuresis) related to International Consultation on Incontinence Questionnaire Female Lower Urinary Tract Symptoms Modules (ICIQ-FLUTS) pertaining to presence of symptoms in the last 4 weeks. The ICIQ-FLUTS is a questionnaire for evaluating female lower urinary tract symptoms and impact on quality of life (QoL) in research and clinical practice across the world. The ICIQ-FLUTS is derived from the fully validated BFLUTS-SF questionnaire<sup>[15]</sup>. This is a simple tool based on study questionnaire and hence this tool was used in the present study. Percentage category (0-4) scale was used depending on the symptom and the severity. Degree of bothersome was assessed on a scale on 0-10 to assess the impact on QoL.

Pregnant patients and patients attending outpatient with urinary problems were excluded from the study. The routine profile of the patient, past medical and surgical history was taken and the intrapartum history was prompted and the history was taken in detail, like the duration of labour, use of forceps and history of perineal tears was noted. Some patients could not answer these questions. Based on their responses, they were classified to have nocturia, frequency of urination, dysuria, stress incontinence, urge incontinence and mixed incontinence.

#### **ICIQ-FLUTS questionnaire<sup>[15]</sup>**

The ICIQ-FLUTS is a brief and psychometrically robust patient-completed questionnaire for evaluating female lower urinary tract symptoms and impact on quality of life (QoL) in research and clinical practice across the world. The ICIQ-FLUTS is derived from the fully validated BFLUTS-SF questionnaire and provides a brief and robust measure to assess the impact of urinary symptoms on outcome. It is scored on a scale from 0-16 for symptoms of filling, 0-12 for voiding symptoms and 0-20 for incontinence symptoms.

Other scoring systems used are IPSS- used for both men and women, OABSS- Overactive Bladder symptom Score and CLSS- Core Lower Urinary Tract Symptom Score. To evaluate LUTS, the International Prostate Symptom Score (IPSS) is most commonly used for both men and women<sup>[3,4]</sup>. However, this questionnaire was originally developed

specifically for benign prostatic hyperplasia (BPH)<sup>[3]</sup>. In addition, IPSS does not consider symptoms of stress incontinence, urgency incontinence, and pain, which are likely to be prevalent in women. Therefore, the IPSS questionnaire may not be sufficient for the assessment of LUTS in women. The ICIQ-SF is used for incontinence symptoms and is thus not appropriate for general use. Overactive Bladder Symptom Score (OABSS) questionnaire for overactive bladder (OAB) symptoms<sup>[7]</sup> and the Core Lower urinary tract Symptom Score (CLSS) questionnaire for core or important symptoms is useful for pathological conditions and disease specific conditions.

**Statistical analysis:** The data was analysed using proportions after the data was entered in the Microsoft Excel Worksheet.

## Results

**Table 1: Distribution of study subjects as per age**

Age (years)	Number	%
20-30	39	17
31-40	30	13
41-50	97	42
51-60	46	20
61-70	18	8
Total	230	100

42% were in the age group between 41 to 50 years with a median age group being 44.5 years. 20% were between 51 to 60 followed by 17% between 20 to 30 years, 13% between 31 to 40 and only 8% between 61 to 70 years. (Table 1)

**Table 2: Distribution of study subjects as per mode of delivery and other parameters**

Variable		Number	%
Mode of delivery	Vaginal	170	73.91
	Caesarean section	54	23.47
	Forceps	4	1.7
Parity	Nulliparous	2	0.86
Menopause	Yes	134	58.26

The mode of delivery revealed vaginal in 73.91%, caesarean in 23.47% and forceps was used in 1.7% of cases. And 0.86% were nulliparous, Perineal tear at the time of delivery was observed in 0.86% of women. Menopause was an associated factor in 58.28% of women. Natural menopause was observed in 23.91 and postsurgical menopause was observed in 17.86% of women. (Table 2)

**Table 3: Frequency of symptoms as per ICIQ-FLUTS Questionnaire**

Symptoms		Prevalence		Average score (4)	Average of bothersome (10)
		No.	%		
Storage phase symptoms	Nocturia	181	78.7	1.75	3.8
	Urgency	128	55.7	1.6	3.3
	Dysuria	43	18.7	1.3	2.7
	Frequency	116	50.4	1.4	3.3
Voiding phase symptoms	Hesitancy	32	13.9	1.25	2.6
	Straining	24	10.4	1.33	2.4
	Intermittency	45	19.6	1.44	2.9
Incontinence symptoms	Urge	83	36.1	1.36	3.1
	Frequency	77	33.5	1.4	3.2
	Stress	128	55.6	1.5	3.1
	Nocturia	14	10.9	1.2	2.5

Among storage phase symptoms, nocturia was most common in 78.7% of cases while intermittency was most common (19.6%) among voiding phase symptoms and stress incontinence was most common (55.6%) among incontinence symptoms. Nocturia had the highest average bothersome score of 3.8/10 among all symptoms and straining had the least bothersome score of 2.4/10. Urgency and frequency had bothersome score of 3.3/10 each (Table 3).

## Discussion

Urinary Incontinence is a very distressing problem and requires more awareness among the patients as well as the physicians treating them. The epidemiological surveys help us to assess the magnitude of the population and guide us in proper diagnosis and treatment. This ICIQ\_FLUTS Questionnaire is a self-reported questionnaire module and carries many leading questions helping the in the diagnosis of

Urinary Incontinence. As in other studies our study also showed a strong association between the increasing age and Urinary incontinence. Stress Incontinence was found to be the commonest as found in other studies but we noted that urge incontinence definitely increases with age. Stress Incontinence was noted more often in menopausal and postmenopausal women, and as study by Mishra GD et al<sup>[16]</sup> observed that, mixed and Urge Incontinence increases with age. The overall prevalence rate of Stress Urinary Incontinence was 55.65% comparable with most other international studies. There are very few Indian studies of which Kumari S et al<sup>[17]</sup> (large prevalent studies) have also quoted Stress Urinary Incontinence was commonest followed by mixed and urge Incontinence. They showed in their studies the clear association of age, parity, vaginal deliveries, and instrumental deliveries in patients with Urinary Incontinence. Our study showed significant impact of quality of life especially in patients with Stress Incontinence. The draw back or limitation of this study was that the data collected were obtained solely on verbal response, and the perception of QOL may have been subjective, and not to forget the recall bias of their delivery history.

Bodhare TN et al<sup>[13]</sup> found that the prevalence of urinary incontinence was 10% among 552 women studied and was significantly associated with increasing age. Stress incontinence was commonest seen in 57% of cases followed by urge incontinence in 23% and 20% had mixed symptoms. Factors significantly associated with urinary incontinence were lower age at first delivery, a greater number of children, assisted delivery and prolonged duration of the labor. The significant predictors of the urinary incontinence found on regression analysis were chronic cough, chronic cough and presence of urinary tract infection. We did not study the associated factors with urinary incontinence

Biswas B et al<sup>[18]</sup> carried out a cross sectional study in the hospital settings among 170 females who were >50 years of age. The prevalence of urinary incontinence was 27.7%. Stress incontinence was the most common type (51%) of urinary incontinence; 32% were found to have mixed type and only 16.3% had urge incontinence. Illiterate women had 2.41 times more risk of having urinary incontinence compared to literate women; Women with non vaginal deliveries were at 3.37 times more at risk of urinary incontinence compared to women with vaginal deliveries. Women with previous gynecology operation were at 3.84 times more risk of urinary incontinence compared to women with no such history. Women with chronic

cough were at 2.69 times more at risk of urinary incontinence compared to women without chronic cough. Compared to this study we studied the types of urinary incontinence but the predictors were not included in the present study.

Akkus Y et al<sup>[19]</sup> carried out a cross sectional study involving 150 women of age 18-80 years. The prevalence of urinary incontinence was 86.7% most common being mixed incontinence (59.2%) followed by stress incontinence in 37.7% of cases. Most women reported significant adverse quality of life. Significant risk factors of urinary incontinence found in their study were smoking, post-menopausal status, prolapse of the uterus, caffeine use, macro-somia, history of episiotomy, family history of the urinary incontinence, use of hormone replacement therapy and multi-parity. We have not included the risk factors in the present study as done by this author in his study

Prabhu SA et al<sup>[20]</sup> carried out a cross sectional study among 355 women aged 20 years and more. The prevalence of urinary incontinence was 25.5% and it was found to be significantly associated with advancing age. More number of children, early return to the heavy work after delivery, prolonged duration of the labor was found to be some of the risk factors which were significantly associated with urinary incontinence. Significant predictors found in their study were constipation, hypertension, chronic cough and diabetes mellitus. Only 14.4% of the women in their study had agreed health seeking behaviour. After comparing with this study, present study has not studied the risk factors for urinary incontinence

Ganapathy T<sup>[21]</sup> studied 611 women and found that the prevalence of urinary incontinence was 23.08%. Among them, 54.61% presented with stress incontinence, 27.66% with urge incontinence and 17.73% with mixed type of urinary incontinence. The symptoms of the urinary incontinence were found to have a negative impact on the quality of life of women.

## Conclusion

Urinary incontinence was more common in elderly women compared to younger age women. Among storage phase symptoms, nocturia was most common. Among voiding phase symptoms, intermittency and among incontinence symptoms, stress incontinence was most common. Urinary incontinence significantly affected the quality of life of women.

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