

“Urinary Incontinence: Prevalence, Knowledge and Attitude among rural females of Vadodara district: A Cross Sectional Study”

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URL: <https://ijptrs.com/view-issue/167/Fulltext>

DOI: [https://ijptrs.com/public/images/content/540sahil%20V3%20I2%20-%20Copy%20\(1\).pdf](https://ijptrs.com/public/images/content/540sahil%20V3%20I2%20-%20Copy%20(1).pdf)

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Submission: 12th Jan 2024

Revised: 22nd Jan 2024

Publish: 1st April 2024

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ABSTRACT

BACKGROUND: Urinary incontinence (UI) is a condition where individuals encounter involuntary urine leakage, leading to challenges in social interactions and individual hygiene. This issue not only affects physical health but also takes a toll on mental and social well-being, causing feelings of anxiety, shame, and social isolation. Globally, the prevalence of UI varies between 8% to 45%, with higher rates observed in developing regions like Asia. Despite its global prevalence, many people avoid asking help due to societal stigma and a lack of knowledge about its treatments. Research in various parts of the world has highlighted insufficient knowledge and unfavorable attitudes towards UI, particularly among women.

AIMS AND OBJECTIVES: There is a lack of evidence on the prevalence, knowledge, and attitude regarding Urinary Incontinence (UI) among the rural population in India. Therefore, the purpose of this study was to assess the prevalence, knowledge, and attitude of UI among rural females in the Vadodara district, Gujarat.

METHODS AND MATERIAL: The prevalence of UI was assessed using the Questionnaire for Female Urinary Incontinence Diagnosis (QUID), while knowledge and attitudes regarding UI were evaluated through the Incontinence Quiz questionnaire

RESULTS: Among 150 participants, 25.3% had urinary incontinence, predominantly stress UI (71%), followed by urge (28.9%) and mixed (15.7%) types. An Incontinence Quiz revealed a mean score of 3.70 ± 2.43 out of 14, indicating insufficient knowledge and negative attitudes toward UI

CONCLUSION: The study reveals a high prevalence of stress urinary incontinence in rural women in Vadodara, accompanied by inadequate knowledge and negative attitudes toward the condition. It is crucial to create awareness and provide health education to promote better understanding and a positive outlook towards urinary incontinence.

KEY WORDS: Urinary Incontinence, Rural Women, QUID, Incontinence Qu

INTRODUCTION:

As stated by the international continence society Urinary incontinence (UI) is “a condition in which involuntary loss of urine is objectively demonstrable and is a social and hygiene problem.¹ Urinary incontinence (UI) is not be a life-threatening condition, but it can have a significant impact on a person's overall health and well being, physically, mentally and socially.² This can cause feelings of anxiety, embarrassment, depression and isolation and make a negative effect on individual.^{3,4}

Different studies in the world have reported a prevalence rate of urinary incontinence ranging from 8% to 45%. Specifically, in 2008, approximately 250 million women in developing Asian countries were affected by urinary incontinence, and this number was projected to rise to 303 million by 2018.^{5,6} the prevalence of UI is associated with ageing, It impacts 7% of women between 20 to 39 years, 17% between 40 to 59 years, 23% between 60 to 79 years, and 32% in those aged 80 and above.⁷

Urinary incontinence is often not adequately addressed despite of its high prevalence, leading to low rates of seeking care. This reluctance is likely because of the social stigma associated to the condition, discomfort in discussing the problem openly, attempts to downplay the issue, and lack of awareness about the availability of effective treatments. These factors suggest a lack of knowledge regarding the management of urinary incontinence.^{8,9,10}

To effectively raise awareness, It is important to measure the extent of the public's knowledge of UI. yet, only few studies are available on this issue. A study conducted by Guillen Lopez et al in 2003 concluded that general knowledge about UI is inadequate among 325 Peru women.¹¹ similar study assessed awareness of UI in Qatar concluded that women have poor knowledge about the causes of UI and do not seek medical care because of shame, which causes the underreporting of cases.¹²

Despite of high prevalence and poor knowledge of UI worldwide, there is a lack of evidence addressing prevalence, knowledge and

awareness of UI among rural population of India. Therefore, the aims of this study were to identify the prevalence of UI and its subtypes among rural females of Vadodara district of Gujarat and to determine their knowledge toward this condition.

SUBJECTS AND METHODS:

The study was carried out among females of different villages of Vadodara district in period of one year after getting ethical approval by Institutional Review Board. Consent was taken from the subjects prior to the cross-sectional study, using convenient sampling method out of 200, 150 women more than 30 years old giving consent for the study were included. Subjects having any neurological or psychological conditions, active pregnancy and undergone surgery within the last 12 weeks were excluded from the study.

After getting consent from the subjects a detailed subjective assessment was taken including demographic data (name, age, marital status, literacy level, occupation, etc.) gynecological & obstetrics history (menstrual history, no. of delivery, type of delivery, history of abortion, history of episiotomy, hysterectomy, hernia repair etc.) history of any existing medical conditions etc.

In the present study, the definition of UI was “any leakage of urine or accidental loss of control of urination which made you, your pads or undergarments wet in inappropriate times or places in the last 12 months”

Prevalence of UI was evaluated by the Questionnaire for female Urinary Incontinence Diagnosis (QUID). It contains total 6 questions to assess different types of UI:

Do you leak urine (even small drops), wet yourself, or wet your pads or undergarments:

1. When you cough or sneeze?
2. When you bend down or lift something up?
3. When you walk quickly, jog, or exercise?
4. While you are undressing to use the toilet?
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?

6. Do you have to rush to the bathroom because you get a sudden, strong need to urinate?

All of the questions refer to the “last 1 year”.

The extent of the condition was determined by summing up the scores from each question. The scores ranged between 0 and 5 on a scale of frequency of incontinence (0 is none of the time, 1 is rarely, 2 is sometimes, 3 is often, 4 is usually, and 5 is all the time).^{13, 14}

Internal consistency of the stress and urge items is good (Cronbach alpha = 0.72 and 0.79, respectively). Sensitivity and specificity of QUID are 85% and 71% respectively.¹⁴

A woman with a combined score of questions 1, 2 and 3 is ≥ 4 is classified as having stress incontinence and a woman with a combined score of ≥ 6 for questions 4, 5 and 6 is classified as having urge incontinence. Mixed urinary incontinence was identified among women diagnosed with both stress and urge urinary incontinence by the QUID.^{14, 15}

The Incontinence Quiz questionnaire was utilized to assess knowledge regarding UI. This tool was specifically designed to explore beliefs and understanding related to various aspects of UI, including its causes (items 2, 4, 5, and 10),

treatment options, and effects (items 1, 3, 6, 7, 11, and 14), communication between physicians and patients about UI (items 12 and 13), and the connection between aging and UI (items 8 and 9). Respondents were required to indicate their agreement, disagreement, or uncertainty for each item. Correct responses were determined for each item, and a cumulative score was calculated by summing up the number of correct answers, ranging from 0 to 14. A higher score reflected a better understanding and more positive attitudes toward managing UI.¹⁵

The data were analyzed by using the frequency distribution table, graphs by Statistical Packages for Social Sciences (SPSS) software

RESULTS:

A total of 150 of 200 enrolled subjects participated in the study; table 1 gives the socio demographic and reproductive characteristics of the study subjects.

According to the QUID out of 150 participants total 25.3% (38/150) had urinary incontinence. Among total subjects having incontinence, highest 71% were having stress UI (27/38), followed by 28.9 % (11/38) women had urge incontinence and 15.7 % (6/38) women had mix type of urinary incontinence.

Knowledge and attitude were checked using Incontinence quiz and specific responses are presented in table 3.

Demographic Variables of Subjects		
Characteristics		n (%)
Age (years)	30-39	60 (40)
	40-49	28 (18.6)
	50-59	32 (21.3)
	60 and above	26 (17.3)

Literacy level	Illiterate	39 (26)
	Primary Education	78 (52)
	Secondary Education	17 (11.3)
	Graduation	13 (8.6)
	Post Graduation	3 (2)
Marital status	Married	136 (90.6)
	Un Married	3 (2)
	Widow	11 (7.3)
Route of delivery	Vaginal	104 (69.3)
	Caesarean Section	18 (12)
	Both	18 (12)
	None	10 (6.6)
Menopausal history	Pre Menopausal	82 (54.6)
	Peri Menopausal	26 (17.3)
	Post Menopausal	42 (28)
History of any abdominal or reproductive surgery	Yes	47 (31.3)
	No	103 (68.6)

Table 1: Demographic Variables of Subjects

Demographic variables		Number of participants	Type of UI and Frequency (n)
Age	30-39	60	Stress UI: 3 Urge UI: 2 Mixed UI: 1
	40-49	28	Stress UI: 4 Urge UI: 2 Mixed UI: 2
	50-59	32	Stress UI: 10 Urge UI: 5 Mixed UI: 3
	60 and more	26	Stress UI: 10 Urge UI: 2 Mixed UI: 0
Marital status	Married	136	Stress UI: 24 Urge UI: 9 Mixed UI: 0
	Un Married	3	Stress UI: 0 Urge UI: 0 Mixed UI: 0
	Widow	11	Stress UI: 3 Urge UI: 2 Mixed UI: 0

Demographic variables		Number of participants	Type of UI and Frequency (n)
Route of delivery	Vaginal	114	Stress UI: 23 Urge UI: 11 Mixed UI: 6
	Caesarean Section	18	Stress UI: 2 Urge UI: 0 Mixed UI: 0
	Both	18	Stress UI: 2 Urge UI: 0 Mixed UI: 0
	None	10	Stress UI: 0 Urge UI: 0 Mixed UI: 0
Menopausal history	Pre Menopausal	82	Stress UI: 10 Urge UI: 5 Mixed UI: 4
	Peri Menopausal	26	Stress UI: 4 Urge UI: 2 Mixed UI: 0
	Post Menopausal	42	Stress UI: 13 Urge UI: 4 Mixed UI: 2

Table 2: Prevalence of different types of UI

Sentence for which correct answer is agree		Number and % of subjects who are		
		Agree	Disagree	Don't know
1	Most people who currently have involuntary urine loss live normal lives	57 (38)	65 (43.3)	28 (18.6)
2	Women are more likely than men to develop Urinary Incontinence	49 (32.6)	10 (6.6)	91 (60.6)
3	Many people with involuntary urine loss can be cured and almost everyone can experience significant improvement.	44 (29.3)	12 (8)	94 (62.6)
4	Involuntary loss of urine can be caused by several easily treatable medical conditions	54 (36)	39 (26)	57 (38)
5	any common over-the-counter medications can cause involuntary urine loss	53 (35.3)	33 (22)	64 (42.6)
6	There are exercises that can help control urine if one leaks when they cough, sneeze, or laugh	41 (27.3)	10 (6.6)	99 (66)
Sentence for which correct answer is disagree				
7	Once people start to lose control of their urine on a regular basis, they usually can never regain complete control over it again	52 (34.6)	42 (28)	56 (37.3)
8	Involuntary loss of urine, often called a leaky bladder or urinary incontinence is one of the results of normal aging.	55 (36.6)	22 (14.6)	73 (48.6)
9	Most people will involuntarily or accidentally lose control of their urine on a regular basis by the time they reach age 85	41 (27.3)	33 (22)	76 (50.6)
10	Involuntary urine loss is caused by only one or two conditions	37 (24.6)	43 (28.6)	70 (46.6)
11	Other than pads, diapers, and catheters, little can be done to treat or cure involuntary urine loss.	44 (29.3)	40 (26.6)	66 (44)
12	Most physicians ask their older patients whether they have bladder control problems.	43 (28.6)	18 (12)	89 (59.3)
13	Most people with involuntary urine loss talk to their doctors about it.	54 (36)	33 (22)	63 (42)
14	The best treatment for involuntary urine loss is usually surgery.	56 (37.3)	27 (18)	67 (44.6)

Table 3: Incontinence Quiz results

Total score from the Incontinence Quiz was calculated to measure knowledge and attitudes about UI. The mean of Incontinence Quiz score was 3.70 ± 2.43 out of 14, which was much lower than midpoint of 7.0, indicating that respondents had less knowledgeable and negative attitudes towards UI. Total 8 (5.3%) subjects answered all the items incorrectly. Only 14 (9.3%) subjects scored more than 7 and 136 (90.6%) subjects answered less than 7 items correctly.

The cause of UI was screened by items 2, 4, 5 and 10, where 32.6 % subjects agreed to the item “Women are more likely than men to develop Urinary Incontinence”, in 4th item “Involuntary loss of urine can be caused by several easily treatable medical conditions” total 36% subjects answered correctly. 35.3% subjects agreed that any common over-the-counter medications can cause involuntary urine loss. 28.6 % gave correct answer of item 10 “Involuntary urine loss is caused by only one or two conditions” by not agreeing the sentence. Treatment and effects of UI related items were asked in items 1, 3, 6, 7, 11 and 14. Total 38% subjects agreed that “most people who currently have involuntary urine loss live normal lives”. Correct answer of 3rd item “Many people with involuntary urine loss can be cured and almost everyone can experience significant improvement” was given by 29.3% females.

Total 66% subjects didn't know that “There are exercises that can help control urine if one leaks when they cough, sneeze, or laugh”. Whereas total 34.6% subjects believed that “Once people start to lose control of their urine on a regular basis, they usually can never regain complete control over it again”, correct answer of 11th item “Other than pads, diapers, and catheters, little can be done to treat or cure involuntary urine loss” was given by 26.6% subjects. Total 37.3% gave incorrect answer of item states that “The best treatment for involuntary urine loss is usually surgery”.

Item 12 and 13 were about physician–patient discussion about UI in which only 12% subjects answered correctly of item “Most physicians ask their older patients whether they have bladder control problems”, the item 13th stated “Most people with involuntary urine loss talk to

their doctors about it” answered correctly by 22% subjects. Two items (8 and 9) query the relationship between aging and UI. Both are inaccurate. They elicited correct answers in 14.6% and 22% of the subjects respectively.

DISCUSSION

In present study prevalence of UI, knowledge and attitude towards UI was assessed among the females of rural Vadodara.

Prevalence of UI in current study was 25.3%. The finding of present study was similar to the results of studies by Biswas et al.¹⁶ among women aged 50 years and above in a rural health facility of West Bengal 27.7%, Pabhu and Shanbhag¹⁷ concluded 25.5% prevalence on women residing in a tribal area in Maharashtra. Singh et al.¹⁸ reported 21.8%, Ansar et al.¹⁹ concluded 23.9% prevalence of UI.

Prevalence of stress UI in present study was 71% whereas urge and mixed UI was 28.9% and 15.7% respectively. Similar studies on the prevalence of various type of UI concluded stress UI 51%, followed by mixed UI 32.7% and urge UI 16.3%¹⁶ another study by Agarwal BK, Agarwal N²⁰ revealed stress UI and 22% women had stress UI, 38% urge UI and 38% had mixed type of UI. Similar to current study stress UI was the commonest type in other studies^{18, 21, 22}. This variance in the prevalence may be due to different study settings, subjects and their possible risk factors and definition of UI used.

Another objective of this study was to evaluate knowledge and attitudes about UI. Results (mean of Incontinence Quiz score 3.70 ± 2.43 out of 14) suggested that rural women of Vadodara had less knowledgeable and more negative attitudes toward UI. Kubik and colleagues assessed Incontinence quiz in California where the mean cumulative Incontinence Quiz score was 5.46 ± 2.66 in minority women and 6.16 ± 2.86 in whites²³. Whereas the study conducted by Youngmi Kang concluded mean incontinence quiz score was 4.85 ± 2.75 out of 14²⁴. This variation suggests that subjects of current study had less knowledge and negative attitude about UI.

Reason behind the lack of knowledge could low literacy level, poor health education, lack of medical facilities among rural areas whereas misconceptions, beliefs, hesitation for asking help could be the reason for negative attitude of subjects.^{25, 26.}

CONCLUSION

The study's findings indicate a considerable prevalence of urinary incontinence; specifically stress urinary incontinence, among rural women. Additionally, the results show that women in the rural areas of Vadodara have insufficient knowledge and negative attitude about urinary incontinence, potentially leading to delayed or neglected treatment. To address this issue, it is crucial to create awareness and provide health education to promote better understanding and a positive outlook towards urinary incontinence.

FINANCIAL SUPPORT: None

CONFLICTS OF INTEREST: None

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