

ORIGINAL ARTICLE

Prevalence and Awareness of Urinary Incontinence among Postmenopausal Women

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ABSTRACT

Background: Urinary incontinence (UI) is a prevalent yet often underreported health issue among postmenopausal women, significantly affecting quality of life. In Bangladesh, limited data exist regarding the prevalence and awareness of this issue in rural healthcare settings, creating a gap in targeted interventions. **Objective:** To determine the prevalence of and awareness regarding urinary incontinence among postmenopausal women in rural Bangladesh. **Methods & Materials:** A prospective cohort study was conducted at the Upazila Health Complex, Pirgonj, Thakurgaon, Bangladesh, from January 2023 to December 2024. A total of 147 postmenopausal women were selected using a purposive sampling technique. Data were collected through face-to-face interviews using a structured questionnaire and were analyzed using SPSS version 23.0. **Results:** The study revealed a high prevalence of urinary incontinence, affecting 78 participants (53.1%) out of 147. Among those experiencing UI, stress incontinence was the most common type (44.9%), followed by mixed incontinence (30.8%) and urgency incontinence (24.3%). Despite the high prevalence, awareness regarding UI was significantly low. Only 32 (21.8%) of all participants considered it a medical condition, and merely 18 (12.2%) were aware of available treatment options. Furthermore, a substantial majority (73.5%) had never discussed their symptoms with a healthcare provider. **Conclusion:** Urinary incontinence is highly prevalent among postmenopausal women in rural Bangladesh, yet awareness of the condition as a treatable medical issue remains critically low. This highlights an urgent need for community-based health education programs to improve awareness, reduce stigma, and encourage affected women to seek timely medical care.

Keywords: Awareness, Menopause, Postmenopausal, Prevalence, Urinary incontinence, Women.

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INTRODUCTION

Urinary incontinence (UI), defined as the involuntary leakage of urine by the International Continence Society, represents a significant yet frequently under-addressed health concern among postmenopausal women worldwide [1]. The menopausal transition, characterized by declining estrogen levels, leads to anatomical and physiological changes in the lower urinary tract, including reduced urethral closure pressure, diminished pelvic floor muscle strength, and atrophy of urogenital tissues, all of which predispose women to the development of incontinence [2,3]. The global burden of UI among postmenopausal women is substantial, with prevalence estimates varying considerably across populations. A study among Chinese perimenopausal and postmenopausal women reported stress urinary incontinence (SUI) prevalence of 48.7% in postmenopausal participants, with obesity, vaginal delivery, and diabetes identified as significant risk factors [4]. Similarly, research from Turkey found that 50.5% of postmenopausal women attending

primary healthcare centers had a history of incontinence, with significant negative impacts on quality of life, particularly psychosocial health [5]. In Iran, a cross-sectional study among postmenopausal women demonstrated that longer menopausal duration and higher parity were associated with increased odds of urgency and mixed incontinence [6]. Beyond physical discomfort, UI imposes profound psychological and social consequences. Affected women frequently experience embarrassment, social isolation, anxiety, and diminished self-esteem [7]. A study examining the effect of UI on quality of life and self-esteem among postmenopausal women found significant negative correlations between incontinence severity and both health-related quality of life and psychological well-being [8]. The condition restricts daily activities, limits occupational participation, and may contribute to depressive symptoms, transforming what many consider a minor physical complaint into a pervasive life-limiting condition. In the South Asian context, emerging evidence suggests that UI prevalence may be particularly high.

A Pakistani study involving 100 postmenopausal women reported a striking prevalence of 71%, with SUI being the most common subtype (45%), followed by urge incontinence (36%) and mixed incontinence (19%) [9]. The study identified diabetes as a significant associated factor, highlighting the complex interplay between metabolic and urogenital health in this population. In Bangladesh specifically, a cluster randomized trial investigating exercise interventions for UI among older women in rural villages demonstrated that structured group-based programs could effectively manage symptoms, yet the study also revealed substantial unmet needs and limited access to care [10]. The trial enrolled women aged 60-75 years and found that many participants had never previously sought or received treatment for their symptoms, underscoring the hidden nature of this condition in resource-limited settings. Awareness regarding UI as a treatable medical condition remains critically low, particularly in rural and low-resource settings. A large population-based survey among women in rural China found that the overall awareness rate of UI was only 24.7%, with older age, lower education levels, and reduced income significantly associated with decreased awareness [11]. Furthermore, merely one-third of respondents believed they should seek medical help for UI, reflecting deeply ingrained perceptions of incontinence as a normal consequence of aging rather than a condition amenable to intervention. Similar findings emerged from a Bangladeshi study conducted in a tertiary-level hospital, where, despite higher prevalence estimates, help-seeking behavior remained limited due to embarrassment, normalization of symptoms, and lack of knowledge regarding treatment options [12]. The discrepancy between high prevalence and low awareness is compounded by multiple factors in rural Bangladeshi settings, including limited healthcare infrastructure, scarcity of specialized continence services, cultural taboos surrounding discussion of urinary symptoms, and competing health priorities [13]. Women in Upazila-level health complexes often present with advanced symptoms only when quality of life has been severely compromised, missing opportunities for early intervention with conservative measures such as pelvic floor muscle training, lifestyle modifications, and behavioral therapies. Despite the recognized burden of UI globally, data specific to postmenopausal women attending primary and secondary care facilities in northern Bangladesh remain scarce. Understanding the local prevalence, subtype distribution, and awareness levels is essential for developing contextually appropriate health education programs and clinical services. The present study, conducted at the Upazila Health Complex in Pirgonj, Thakurgaon, Bangladesh, aims to address this knowledge gap by investigating the prevalence of and

awareness of urinary incontinence among postmenopausal women in this rural setting.

METHODS & MATERIALS

This prospective cohort study was conducted at the Upazila Health Complex, Pirgonj, Thakurgaon, Bangladesh, from January 2023 to December 2024. The study population consisted of postmenopausal women who attended the outpatient department for various health concerns during the study period.

Inclusion criteria: Women were eligible for inclusion if they were aged 45 years or above, had experienced natural menopause (defined as cessation of menstruation for at least 12 consecutive months), and provided informed consent to participate in the study.

Exclusion criteria: Included Women with cognitive impairment that affected their ability to comprehend and respond to interview questions, those with temporary urinary symptoms attributable to an acute urinary tract infection, pregnant women, and individuals with diagnosed neurological conditions that potentially affected bladder function.

Study procedure: A total of 147 postmenopausal women were enrolled through purposive sampling. Data were collected through face-to-face interviews conducted by trained female healthcare workers in a private setting to ensure participant comfort and confidentiality. A structured questionnaire was employed, comprising three sections: sociodemographic characteristics, assessment of urinary incontinence using the International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form (ICIQ-UI SF), and awareness assessment questions evaluating knowledge regarding UI as a medical condition and available treatment options. Clinical measurements, including height, weight, and blood pressure, were recorded.

Data analysis: Collected data were coded, entered, and analyzed using SPSS version 23.0. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were computed to summarize sociodemographic characteristics, UI prevalence, and awareness levels.

RESULTS

A total of 147 postmenopausal women participated in the study. The mean age of participants was 58.4 ± 7.2 years, with the largest proportion (40.1%) belonging to the 51-60 year's age group (Figure 1).

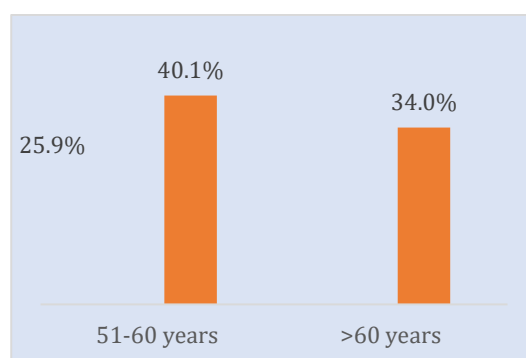


Figure 1: Age distribution (n=147).

The majority of women (70.7%) were housewives (*Figure 2*),

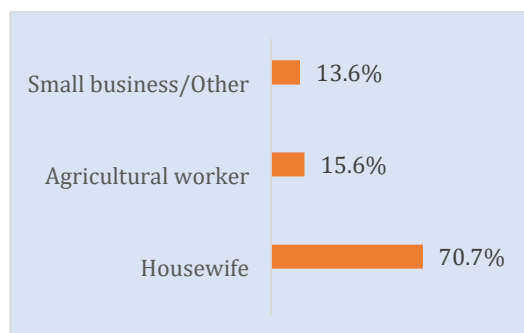


Figure 2: Distribution of occupation status.

And 57.1% had no formal education (*Figure 3*).

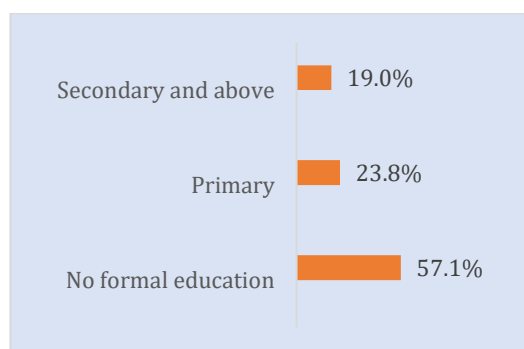


Figure 3: Educational status.

Regarding socioeconomic status, 44.2% of participants had a monthly family income below 10,000 BDT (*Figure 4*).

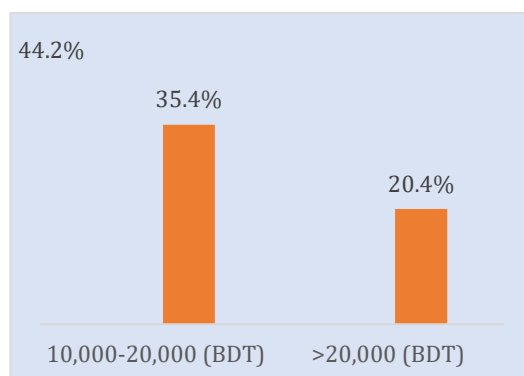


Figure 4: Monthly family income.

The obstetric and clinical characteristics of the participants are detailed in *Table I*.

Table I: Obstetric and clinical characteristics.

Characteristic	Category	n	%
Parity	1-2 children	26	17.7
	3-4 children	69	46.9
	≥5 children	52	35.4
Mode of delivery	All vaginal	119	81
	Cesarean section (any)	28	19
Menopausal duration	≤5 years	41	27.9
	6-10 years	58	39.5
	>10 years	48	32.6
BMI classification	Normal (18.5-24.9)	62	42.2
	Overweight (25-29.9)	55	37.4
	Obese (≥30)	30	20.4

Most women (78.2%) had a history of multiple deliveries (≥3 children), and 81.0% had experienced vaginal deliveries exclusively. The mean duration since menopause was 9.6 ± 6.8

years. The prevalence and types of urinary incontinence (UI) are presented in (Table II).

Table II: Prevalence and types of urinary incontinence.

Variable	Category	n	%
UI status	Present	78	53.1
	Absent	69	46.9
Type of UI (n=78)	Stress incontinence	35	44.9
	Urgency incontinence	19	24.3
	Mixed incontinence	24	30.8
	Mild (ICIQ score 1-5)	20	25.6
Severity of UI (n=78)	Moderate (ICIQ score 6-12)	38	48.7
	Severe (ICIQ score 13-21)	20	25.6

The overall prevalence of UI among study participants was 53.1% (78 out of 147). Among those with UI, stress incontinence was the most common subtype, affecting 44.9% (35 women), followed by mixed incontinence in 30.8% (24 women), and urgency incontinence in 24.3% (19 women). Using the ICIQ-UI SF scoring, the severity of incontinence was

classified as mild in 25.6% (20 women), moderate in 48.7% (38 women), and severe in 25.6% (20 women) of affected participants. Analysis of awareness regarding UI revealed concerning gaps (Table III).

Table III: Awareness and help-seeking behavior regarding UI.

Variable	Response	n	%
Considers UI a medical condition	Yes	32	21.8
	No (considers normal aging)	115	78.2
Aware of treatment options for UI	Yes	18	12.2
	No	129	87.8
Ever discussed UI with a healthcare provider	Yes	39	26.5
	No	108	73.5
Ever sought care for UI (among affected, n=78)	Yes	15	19.2
	No	63	80.8
Reasons for not seeking care (n=63)	Embarrassment	26	41.0
	Considered normal aging	20	32.1
	Unaware of treatment	10	16.7
	Financial constraints	7	10.2

Only 21.8% (32 women) of all participants considered urinary incontinence a medical condition requiring attention, while the remaining 78.2% (115 women) perceived it as a normal consequence of aging. Awareness of available treatment options was even lower, with merely 12.2% (18 women) reporting knowledge that UI could be treated. Furthermore, 73.5% (108 women) had never discussed their urinary symptoms with any healthcare provider, and among those who had experienced UI, only 19.2% (15 women) had ever sought medical care for their symptoms. When asked about

reasons for not seeking care among affected women, the most frequently cited barriers were embarrassment (41.0%), perception of UI as normal aging (32.1%), lack of knowledge about treatment availability (16.7%), and financial constraints (10.2%). Analysis of factors associated with UI prevalence revealed that older age, higher parity, and longer menopausal duration were significantly associated with increased likelihood of incontinence (Tables IV and V).

Table IV: Association between sociodemographic factors and UI prevalence.

Variable	Category	Total (n)	UI present n (%)	p-value
Age group	45-50 years	38	14 (36.8)	0.012
	51-60 years	59	31 (52.5)	
	>60 years	50	33 (68.3)	
Educational status	No formal education	84	58 (69.0)	0.002
	Primary	35	13 (37.1)	
	Secondary and above	28	7 (36.5)	
Monthly income	<10,000 BDT	65	40 (61.5)	0.078
	10,000-20,000 BDT	52	25 (48.1)	
	>20,000 BDT	30	13 (43.3)	
BMI	Normal	62	27 (43.5)	0.043
	Overweight	55	32 (58.2)	
	Obese	30	19 (63.3)	

Data analysis test: Chi-square test was used to compare proportions across groups.

As shown in Table 4, women aged above 60 years had significantly higher UI prevalence (68.3%) compared to those aged 51-60 years (52.5%) and 45-50 years (36.8%) ($p = 0.012$). Educational status was also significantly associated with UI prevalence: 69.0% among women with no formal education versus 36.5% among those with secondary or higher education ($p = 0.002$). A borderline significant association was observed with monthly income ($p = 0.078$).

Regarding obstetric factors (Table V), women with parity ≥ 5 demonstrated higher UI rates (64.7%) than those with parity 1-2 (38.5%) ($p = 0.008$). Menopausal duration exceeding 10 years was associated with a 68.8% UI prevalence, compared with 39.0% among women with shorter menopausal duration ($p = 0.019$).

Table V: Association between obstetric factors and UI prevalence.

Variable	Category	Total (n)	UI present n (%)	p-value
Parity	1-2 children	26	10 (38.5)	0.008
	3-4 children	69	35 (50.7)	
	≥ 5 children	52	33 (64.7)	
Mode of delivery	All vaginal	119	69 (58.0)	0.023
	Cesarean section (any)	28	9 (32.1)	
Menopausal duration	≤ 5 years	41	16 (39.0)	0.019
	6-10 years	58	29 (50.0)	
	>10 years	48	33 (68.8)	

Data analysis test: Chi-square test was used to compare proportions across groups.

DISCUSSION

The present study revealed a high prevalence of urinary incontinence (53.1%) among postmenopausal women attending a rural Upazila Health Complex in northern Bangladesh. This finding aligns with global estimates among postmenopausal populations, though it exceeds figures reported in some developed nations. The observed prevalence is comparable to findings from Pakistan, where 71% of postmenopausal women reported UI symptoms [9], and slightly higher than Turkish data reporting 50.5% prevalence among postmenopausal primary care attendees [5]. The variation across studies may reflect differences in sampling methods, assessment tools, and population characteristics, including parity, BMI, and healthcare-seeking behaviors. Stress incontinence emerged as the predominant subtype, affecting 44.9% of incontinent women, followed by mixed (30.8%) and urgency incontinence (24.3%). This distribution pattern is consistent with the pathophysiological changes accompanying menopause, where estrogen deficiency contributes to urethral sphincter weakness and pelvic floor muscle atrophy [2]. Similar subtype distributions were reported in Chinese postmenopausal women, with SUI accounting for 48.7% of cases [4]. The predominance of SUI in our population may also reflect the high prevalence of vaginal deliveries (81.0%) and multiparity (82.3% with ≥ 3 children), both established risk factors for pelvic floor damage and subsequent stress incontinence [6]. The severity assessment revealed that nearly three-quarters of affected women

(74.3%) experienced moderate to severe incontinence, indicating substantial symptom burden. This finding has important clinical implications, as greater severity is associated with poorer quality of life, increased psychological distress, and higher healthcare utilization costs [7,8]. The significant proportion of moderate-to-severe cases suggests that many women may be presenting late in their symptom trajectory, potentially due to barriers in care-seeking identified in this study. A particularly concerning finding was the profound lack of awareness regarding UI as a medical condition. Only 21.8% of participants considered UI a health problem requiring attention, while the majority (78.2%) normalized it as an inevitable consequence of aging. This awareness rate is remarkably similar to findings from rural China, where only 24.7% of women demonstrated adequate UI awareness [11]. The low awareness in our setting may be attributable to limited health literacy, minimal exposure to health education campaigns addressing pelvic floor health, and cultural norms that discourage open discussion of urogenital symptoms [13]. Awareness of treatment options was even lower, with merely 12.2% of women knowing that UI could be effectively managed. This knowledge gap likely contributes to the extremely low care-seeking behavior observed, where only 19.2% of affected women had ever consulted a healthcare provider for their symptoms. The primary barriers identified-embarrassment (41.0%) and normalization of symptoms (32.1%)-echo findings from qualitative research in Bangladesh, where women described

UI as a "silent suffering" and expressed reluctance to discuss symptoms due to shame and stigma [13,14]. Similar barriers have been documented across South Asian settings, where cultural taboos surrounding bodily functions and gendered expectations of silence regarding women's health concerns perpetuate untreated morbidity [15]. The significant associations between UI and several demographic and obstetric factors warrant discussion. Higher UI prevalence among older women (>60 years: 68.3%) and those with longer menopausal duration (>10 years: 68.8%) supports the cumulative effect of aging and hormonal depletion on pelvic floor structures [3]. The strong association between higher parity and UI (≥ 5 children: 64.7%; $p=0.008$) reflects the mechanical trauma of repeated childbirth on pelvic support mechanisms, consistent with meta-analytic evidence identifying parity as a dominant risk factor for UI in low-resource settings where instrumental deliveries and prolonged labor are more common [16,17]. Educational attainment emerged as a significant protective factor, with UI prevalence among women with secondary education (36.5%) nearly half that among women with no formal education (69.0%; $p=0.002$). This association may reflect multiple pathways, including greater health literacy enabling early recognition and management, better access to healthcare information, and potential differences in occupational and lifestyle factors [18]. The inverse relationship between education and UI has been consistently reported across diverse populations, underscoring the importance of educational interventions in UI prevention and management [19,20]. BMI showed a graded association with UI prevalence, rising from 43.5% among normal-weight women to 63.3% among obese participants ($p=0.043$). This finding aligns with established evidence linking obesity to increased intra-abdominal pressure, chronic strain on pelvic floor muscles, and metabolic factors affecting connective tissue integrity [21,22]. The association between exclusive vaginal delivery and higher UI prevalence compared to women with any cesarean section (58.0% vs. 32.1%; $p=0.023$) reinforces the protective effect of cesarean delivery against pelvic floor trauma, though cesarean rates in this rural population remain low [23]. The finding that 73.5% of women had never discussed UI with any healthcare provider highlights a critical missed opportunity for intervention. Even when women attend healthcare facilities for other conditions, providers rarely inquire about urinary symptoms, and women seldom volunteer such complaints [24]. This silence perpetuates the misconception that UI is not a legitimate health concern and delays access to effective conservative treatments, including pelvic floor muscle training, lifestyle modifications, and behavioral therapies that could significantly improve symptoms and quality of life [10,25]. The strengths of this study include its focus on a rural Bangladeshi population previously underrepresented in UI research and the use of validated assessment tools. However, several limitations must be acknowledged. The purposive sampling at a single Upazila Health Complex limits generalizability to the broader community, as women attending health facilities may differ from those who never seek care. The cross-sectional design precludes causal inference regarding identified associations. Additionally, self-reported UI symptoms may be subject to recall bias and underreporting due to embarrassment. Despite these limitations, the study provides valuable baseline data for designing targeted interventions in similar rural settings.

LIMITATIONS

This single-center study with purposive sampling limits generalizability to the broader community. The cross-sectional design precludes causal inference, and self-reported symptoms may be subject to recall bias and underreporting due to embarrassment.

CONCLUSION

Urinary incontinence affects over half of postmenopausal women in rural Bangladesh, yet awareness remains critically low, with most women normalizing symptoms and few seeking care. Significant associations with age, parity, education, and BMI highlight targetable risk factors. Urgent community-based health education programs are needed to improve awareness, reduce stigma, and facilitate early access to effective conservative treatments.

RECOMMENDATION

Community-based awareness campaigns should address UI as a treatable condition, not normal aging. Healthcare providers must routinely inquire about urinary symptoms during consultations. Pelvic floor muscle training programs should be integrated into primary care services for affected women.

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