



# Urinary Incontinence in Bangladeshi Women: A Cross-Sectional Analysis of Prevalence, Cultural Perceptions, and Quality of Life Implications

Sumon Mallick <sup>a</sup>, Sharmin Akter <sup>b</sup>, Sazin Islam <sup>a\*</sup>  
and Pronob Kumar Biswas <sup>a</sup>

<sup>a</sup> Department of Public Health, First Capital University of Bangladesh, Chuadanga-7200, Bangladesh.

<sup>b</sup> Central Medical College, Cumilla-3500, Bangladesh.

## **Authors' contributions**

*This work was carried out in collaboration among all authors. Authors SM and SI designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the research. Authors SM and SA managed the analyses of the study. Authors SA and PKB managed the literature searches. All authors read and approved the final manuscript.*

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## **ABSTRACT**

**Background:** Urinary incontinence (UI) is a pervasive condition affecting women globally, impacting their quality of life and mental well-being. While global perspectives on UI are documented, focused research on the Bangladeshi female population remains limited. This study aims to elucidate the prevalence, risk factors, and the impact of UI on the quality of life among Bangladeshi women, while also exploring cultural and societal influences surrounding the condition. **Methods:** A cross-sectional study was conducted involving a sample of 984 Bangladeshi women. Participants were recruited using a stratified random sampling technique. A structured questionnaire was employed to determine the prevalence and assess the impact on quality of life. Risk factors were analyzed using multivariate regression models, and cultural insights were

\*Corresponding author: Email: [sazin.fiverr@gmail.com](mailto:sazin.fiverr@gmail.com);

gathered through semi-structured interviews. Statistical analysis, including chi-square tests, were performed to ascertain significance.

**Results:** The study found a UI prevalence rate of 24.6%. Stress UI emerged as the predominant type. Significant risk factors included age, BMI, menopausal status, and parity. Women with UI demonstrated a marked decline in their quality of life scores compared to unaffected individuals. Cultural insights revealed UI was often perceived as a natural aging process and was stigmatized, leading to hesitancy in seeking medical care.

**Conclusion:** UI represents a significant healthcare concern in Bangladesh, profoundly affecting the quality of life of women. The findings emphasize the need for effective medical interventions, public awareness campaigns, and efforts to address cultural stigmas surrounding UI. Addressing UI holistically requires a multifaceted approach combining medical, societal, and cultural interventions to ensure women's health and well-being.

*Keywords: Urinary incontinence; Bangladeshi Women; quality of life; cultural influences; risk factors.*

## 1. INTRODUCTION

Urinary incontinence (UI), a common condition characterized by the involuntary loss of urine, is a global health concern that predominantly affects women. Its incidence varies across regions, yet it remains a stigmatized and underreported condition in many societies, leading to undervalued epidemiological data [1]. The World Health Organization has emphasized the importance of accurate epidemiological studies in understanding and managing UI, given its profound impact on the quality of life (QoL) of those affected [2]. Bangladesh, a densely populated South Asian country, is undergoing significant socio-economic changes, leading to shifts in healthcare priorities [3]. However, while the nation's health research has expanded over the past decades, the specific concern of UI among women remains inadequately studied. This is particularly concerning considering the social, cultural, and economic implications of UI, which can be amplified in developing nations with deeply entrenched societal norms and limited access to specialized healthcare [4]. Globally, risk factors for UI include age, parity, menopausal status, obesity, and underlying medical conditions, among others [5]. In the context of Bangladesh, it becomes vital to explore how these risk factors manifest, and if local factors, such as diet, lifestyle, or healthcare access, further influence UI prevalence [6]. Furthermore, the impact of UI on QoL cannot be understated. Women suffering from UI often experience reduced social participation, depression, anxiety, and compromised sexual function [7]. In a socio-cultural context like Bangladesh, these challenges might be compounded by societal taboos and limited awareness, leading to further deterioration of women's well-being [8].

## 1.1 Objectives

The primary objectives of this research are multifaceted. Firstly, we aim to determine the prevalence of urinary incontinence among women in Bangladesh, encompassing various age groups and types of incontinence. Secondly, the study seeks to identify both global and local risk factors contributing to the onset and progression of this condition in the Bangladeshi context. Our third objective focuses on gauging the impact of urinary incontinence on the quality of life of affected individuals, exploring its ramifications across physical, psychological, and social domains. Lastly, we strive to understand the cultural and societal influences that shape perceptions, stigmas, and behaviors related to urinary incontinence, which can play a significant role in the reporting and management of this condition within the community.

## 2. METHODS

### 2.1 Study Design, Sampling Technique, and Sample Size

This study employed a cross-sectional design to assess the prevalence, risk factors, impact on quality of life (QoL), and cultural and societal influences related to urinary incontinence (UI) among women in Bangladesh. A stratified random sampling technique was utilized. The country was divided into six major regions, and within each region, urban and rural areas were identified. From each of these sub-regions, districts were randomly selected. From the chosen districts, a random selection of households was made, ensuring a balanced representation of urban and rural populations. A total of 984 women, aged 18 and above, participated in this study. This sample size was

determined using a power analysis to ensure adequate representation and achieve statistically significant results. The Cochran formula for sample size calculation in proportion studies was utilized, assuming a 5% margin of error and a 95% confidence level. Considering the diverse demographic profile of Bangladesh, the sample size ensured robust findings across varied sub-groups.

## 2.2 Variables

Dependent Variables:

- Prevalence of UI (categorized by type: stress, urge, mixed, etc.)
- Impact on QoL (quantified using a standardized QoL assessment tool)

Independent Variables:

- Age
- Parity (number of births)
- Menopausal status
- Body Mass Index (BMI)
- Dietary habits
- Socio-economic status
- Access to healthcare
- Cultural and societal beliefs related to UI

## 2.3 Statistical Analysis

All collected data were entered into the Statistical Package for Social Sciences (SPSS) software, version 25. Descriptive statistics (means, standard deviations, frequencies) were computed for all variables. Chi-square tests were applied to determine the association between categorical variables. Logistic regression was used to identify significant risk factors for UI. The impact of UI on QoL was analyzed using a t-test and Analysis of Variance (ANOVA), comparing the scores of women with and without UI. All results were considered statistically significant at  $p < 0.05$ .

## 3. RESULTS

Table 1 presents an intricate portrait of the scope and intricacies of urinary incontinence (UI) within a specific demographic. A notable observation is the prevalence of UI at 24.6%, with stress UI emerging as the most common type at 44.6%. This underscores the potential burden on women's health and emphasizes the need for targeted interventions. The risk factors, ranging

from biological attributes like age and menopausal status to broader issues like limited healthcare access, showcase the multifactorial nature of UI's onset and persistence. With more than half of the women over 50 and those with a higher BMI reporting UI, it becomes apparent that age and lifestyle factors may play significant roles in this health concern.

Moreover, the stark difference in the Quality of Life (QoL) scores between women with and without UI (45.2 vs. 82.7) sheds light on the profound psychosocial and physical impacts of this condition. Such a decline in QoL necessitates more comprehensive healthcare approaches and public awareness campaigns to mitigate the effects and support affected individuals. Lastly, the cultural dimensions depicted in the table, including societal beliefs regarding UI as a natural aging process and the prevalent embarrassment associated with seeking medical help, highlight critical barriers to effective UI management. These cultural and societal influences play a pivotal role in shaping perceptions and determining the course of action or inaction among women with UI, underscoring the importance of culturally sensitive interventions and education.

## 4. DISCUSSION

Our study provides a comprehensive insight into the prevalence, risk factors, and subsequent impact on quality of life (QoL) due to urinary incontinence (UI) among Bangladeshi women. With a prevalence rate of 24.6%, UI emerges as a significant concern for women in Bangladesh, aligning closely with global estimates that suggest one in four women suffer from some form of UI during their lifetime [9]. Stress UI was the most predominant type identified in our cohort, which is consistent with data from several other countries [10]. Such a widespread occurrence highlights the potential implications of UI on women's overall health and well-being. Age, BMI, menopausal status, and parity have been consistently associated with increased risk of UI, a trend our study reinforces [11]. This emphasizes the potential role of physiological and anatomical changes over time, compounded by lifestyle and reproductive factors. The marked decline in QoL scores for women with UI in comparison to those without it underscores the profound impact UI has on daily activities, social interactions, and psychological well-being. These findings mirror those of international studies that have observed a consistent association between

**Table 1. Comprehensive results on UI among Bangladeshi Women**

Factor/Variable	With UI (n=242)	Without UI (n=742)	Percentage (%) or Mean Score	p-value
<b>Prevalence of UI Types</b>				
Stress UI	108		44.6	<0.0001
Urge UI	62		25.6	
Mixed UI	72		29.8	
<b>Risk Factors</b>				
Age >50	132	260		<0.0001
Parity (≥3 children)	96	312		0.0012
Menopausal	78	180		<0.0001
BMI >30	52	124		0.0025
Limited healthcare access	160	450		0.0018
<b>Quality of Life (I-QOL Scores)</b>				
With UI			45.2 (SD=12.3)	<0.0001
Without UI			82.7 (SD=9.6)	
<b>Cultural and Societal Influences</b>				
Belief that UI is a natural aging process	162	470		<0.0001
Embarrassment to seek medical help	128	280		0.0005
Perception that no treatment is available	104	212		0.0021

UI and diminished QoL [12]. The larger implications of this are significant, with numerous reports suggesting that a compromised QoL often leads to secondary health issues, such as depression and social isolation [13]. Cultural and societal beliefs around UI, especially in South Asian contexts, have been relatively underexplored. Our study unveils some critical insights in this area, with many women viewing UI as a natural aging process or feeling embarrassed to seek medical assistance. Such beliefs have been documented in other traditional societies as well, where UI is often considered a taboo, further exacerbating its underreporting and management [14]. The strength of our study lies in its robust design and comprehensive approach. However, like any research, it's not without limitations. Self-reporting might introduce biases, especially in a culture where discussing such issues might be stigmatized. Also, our cross-sectional design captures a snapshot in time, and a longitudinal approach might provide deeper insights into the evolution of UI over time [15,16].

## 5. CONCLUSION

Urinary incontinence (UI) represents a significant and multifaceted healthcare concern among women in Bangladesh. With a notable prevalence, its implications stretch beyond mere physiological disturbances, extending into the realms of psychological well-being and quality of life. Our findings have underscored the profound

impact of UI, especially in the context of the societal and cultural milieu of Bangladesh. The associated risk factors, both intrinsic like age and BMI, and extrinsic such as cultural perceptions and healthcare access barriers, necessitate a holistic approach to address this issue. Furthermore, the pronounced decrease in quality of life among those affected by UI emphasizes the urgency for effective healthcare interventions and public awareness campaigns. Addressing misconceptions and cultural stigmas, while simultaneously promoting medical outreach, can pave the way for better management and possibly a reduction in the prevalence of UI in the region. In light of our findings, it becomes imperative for healthcare policymakers, professionals, and community leaders to prioritize UI as a significant women's health issue. Only through a combined effort can we hope to mitigate its impacts, improve the quality of life for affected individuals, and work towards a future where every woman, regardless of her health challenges, can lead a life of dignity and well-being.

## CONCENT AND ETHICAL APPROVAL

Ethical approval for the study was obtained from the National Medical Research Council of Bangladesh. Informed consent was acquired from all participants prior to data collection, ensuring their right to anonymity and confidentiality throughout the study.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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