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Frequency of Urinary Incontinence and Its Risk Factors in Patients Attending Gynae Outpatient Department (OPD) of Lady Reading Hospital (LRH) Peshawar, Pakistan

Asiya Javed[1*], Sadia Bibi[2] and Alia Firdus[1]

[1]Type C Hospital Takhte Nasrati, Karak, Pakistan
[2]Ujala Medical Complex, Ghorghushti, Pakistan

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Corresponding Author:
Asiya Javed
Type C Hospital Takhte Nasrati, Karak, Pakistan
javedash101@gmail.com

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ABSTRACT

Urinary incontinence (UI) is an important health issue acknowledged by the World Health Organization (WHO) that adversely affects the quality of life. **Objectives:** To find out the occurrence of UI in female presenting to the Gynaecology Out-Patient Department of Lady Reading Hospital and also to find out the frequencies of its risk factors for urinary incontinence in women presenting with UI. **Methods:** A descriptive cross-sectional design was used to conduct this study. The sample consisted of 163 women who presented to the Gynaecology Out-Patient Department of Lady Reading Hospital for any complaints were included in the study. **Results:** UI was observed in 15.3% of patients. Moreover, Stress UI was 48%, followed by overflow UI 24%, urge UI 20%, and mixed UI 8%. The leading factors for UI consisted of 3.75% more than three normal vaginal deliveries, 24% chronic cough, 12% history of gynaecological operation, 80% Illiterate, and 56% lower urinary tract infection (LUTI). **Conclusions:** It was concluded that based on the findings of the current study, UI is 15.3% prevalent in Pakistan which is comparable to that of other Asian nations. Furthermore, normal vaginal delivery more than three times and UTI may develop the key risk issues for the development of UI. The magnitude of UI problems may impact on daily lives and habits of the patients.

INTRODUCTION

The International Incontinence Society defines urinary incontinence (UI) as a social and hygienic issue where involuntary urine leakage is objectively observable [1]. After giving birth, over 29.6% of women reported having urine incontinence [2]. Its prevalence in the Turkish population has been estimated to reach 50% [3]. According to Oman research, 28.25% of the women were between the ages of 50 and 59 years. Among Omani women aged 20 to 60, the point prevalence (per 1000) of UI was 44%. Stress UI (41.6%) is found in the majority of the women. Furthermore, 15.2% of women with UI had mild UI, 50.3% had moderate UI, 33.1% had severe UI, and just 1.3% had extremely intense UI [4]. Similarly, a research study in Indonesia estimated the prevalence of urinary incontinence at 13.0% overall [5]. Moreover, a study in India analysed that 27.7% of women have urinary incontinence in which urge UI (16.3%) followed by mixed UI (32.7%) and stress UI (51.0%) [6]. Furthermore, a similar study in India showed that the overall prevalence of urinary incontinence in patients presenting to the hospital was about 12% [7]. According to research done in Turkey, 37.2% of these women experienced urine incontinence, however, only 29.3% of them sought medical attention for the issue. Stress-type incontinence was considered the most observable type in 160 women with urine incontinence findings (33.7%), followed by other types (overflow,

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continuous urinary incontinence) (13.7%), urge type (20.6%) and mixed type (31.8%) [8]. Forty-one (10.30%) of the women were diagnosed with stress urine incontinence. Tuberculosis and other lung conditions were found to be the most prevalent co-morbidities. Only 4% of the women in the trial developed a UTI that tested positive for culture [9]. Research has shown that more than three normal vaginal births, chronic cough, history of gynaecological procedures, and illiteracy have all been identified as the key risk factors for UI [10]. UI has been shown to have negative effects on sexual relationships, work/school performance, and family life [11]. Among women over 40, UI was described to be significantly higher (69.7%). Out of 198 participants, 179 (90.4%) were from the poor socioeconomic group, followed by 17 participants from the middle class, and 2 (1%) were from the higher socioeconomic group. Increasing parity was linked to incontinence, particularly stress incontinence since 81 patients (40.9%) had grand multipara, which is a substantial risk factor for urine incontinence. Additional risk factors were a history of prolapse (34.8%), constipation (51%), elevated BMI > 25 per kg/m2 (47%), vaginal birth (85.4%), and chronic respiratory illness (10%) [12]. Numerous pregnancies, UI in the mother and sister, prior UI during pregnancy, the postpartum period, and body mass index were found to be linked to an increased risk of incontinence. Just 40 out of 92 women (43.5%) have sought medical assistance, whereas 92 out of 288 women (31.9%) said that UI negatively affects their quality of life. The kind of UI, the frequency of UI episodes, and the degree of leakage were all associated with a worse quality of life [13]. Age, vaginal birth, and body mass index (BMI) all contributed to an increase in the prevalence of urine incontinence. Stress urinary incontinence (45.2%), urgency urinary incontinence (22.0%), and mixed urinary incontinence (32.8%) were reported by participants with undiagnosed UI. Urinary incontinence was shown to be significantly correlated with constipation and a high body mass index [14]. In women with Stress Urinary Incontinence (SUI), Mid Urethral Sling (MUS) surgery and Pelvic Floor Muscle Training (FPMT) dramatically enhance quality of life. In the surgical intervention arm, we saw 100% symptomatic alleviation, a high rate of Quality of Life (QoL) improvement, and few easily manageable sequelae. Despite improving quality of life, PFMT needs ongoing encouragement because 22% of participants stopped using it. In the absence of medication, SUI patients' quality of life was rather constant [15].

Although urinary incontinence (UI) is widely recognized as a significant public health issue affecting women's quality of life globally, there remains a lack of locally generated evidence regarding its frequency and associated risk factors among patients attending gynecology outpatient departments in Pakistan. Existing studies are largely international or region-specific with differing sociodemographic profiles, making their findings less generalizable to the local population. Additionally, limited attention has been given to evaluating modifiable and non-modifiable risk factors such as parity, UTI, and socioeconomic status in routine clinical settings. This study aims to find out the occurrence of UI in female presenting to the Gynaecology Out-Patient Department of Lady Reading Hospital and also to find out the frequencies of its risk factors for urinary incontinence in women presenting with UI.

METHODS

A descriptive cross-sectional approach was applied to conduct this study in the Obstetrics and Gynecology unit of Lady Reading Hospital (LRH), Peshawar. Using Openepi software, an anticipated population Proportion (P) of urinary incontinence in patients presenting to the hospital was about 12% [7], confidence interval of 95% and a 5% margin of error, the calculated sample size was 163 women through non-probability consecutive sampling technique. This study was completed in six months starting from July 1st to December 31st, 2020. The written approval of the ethical committee of the hospital was granted before the conduct of this study. Along with this, study participants signed written informed consent at the start of the data collection. The quantitative data was collected through a structured questionnaire Performa. The inclusion criteria include all those women who presented to Gynae OPD of LRH for any complaint, having aged between 25 to 65 years, gravidity and parity both greater than one and willing to take part in this research. Similarly, all those women having known carcinoma of the genital tract, pregnancy, obstetric problems, and present for any type of prolapse like uterine prolapse and vaginal prolapse were excluded. SPSS version 23.00 software was used for data analysis. Mean and standard deviation were calculated in descriptive statistics for continuous variables like participants' age, gravidity and BMI. Percentage and frequency were calculated for categorical variables like urinary incontinence, different types of UI and for each risk factor. The inferential statistics include a Chi-square test for an association between the dependent variable (Urinary Incontinence) and independent variables (Selected Demographics). All the results were statistically significant when the p-value was < 0.5 at a 95% confidence interval.

RESULTS

The mean age of the participants in this study was 42.65 ± 7.37 years; moreover, the mean gravida was 4.25 ± 1.04 and the mean BMI was 27.64 ± 2.21 Kg/m2. 15.3% of the sample population in the current study have UI; followed by 84.7% of participants who have no UI. Similarly, 48% of the

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participants have stress UI, followed by 24% overflow UI, 20% Urge UI, and 08% have Mixed UI in the current study (Table 1).

Table 1: Urinary Incontinence and Its Sub-Types (n=163)

Sr. no	Variables	Frequency	Percentage
Urinary Incontinence			
1.	Yes	25	15.3%
2.	No	138	84.7%
Urinary Incontinence Sub-Types (n=25)			
1.	Stress UI	12	48%
2.	Overflow UI	06	24%
3.	Urge UI	05	20%
4.	Mixed UI	02	08%

More than three normal vaginal deliveries accounted for 30.64% of UI, followed by 09.67% chronic cough, 04.83% history of gynaecological operations, 32.25% educational status of the participants, and 22.58% lower urinary tract infection respectively. Whereas the percentage of individual risk factors shows that 76% of UI patients have more than three normal deliveries and 24% of UI patients have less than three normal vaginal deliveries. Furthermore, 24% of UI patients have chronic cough and 76% of UI patients have no chronic cough. 12% of UI patients have a history of gynaecological operations and 88% of UI patients have no history of gynaecological operations. 80% of UI patients were illiterate and 20% of UI patients were literate. Similarly, 56% of UI patients have lower urinary tract infections and 44% of UI patients were negative for lower urinary tract infections (Table 2).

Table 2: Risk Factor of Urinary Incontinence (n=25)

Sr. no	Risk factors	Frequency (%)	Commuted %
Normal Vaginal Deliveries > 3			
1.	Yes	19 (76%)	30.64%
2.	No	06 (24%)	09.52%
Chronic Cough			
1.	Yes	06 (24%)	09.67%
2.	No	19 (76%)	30.15%
History of Gynecological Operations			
1.	Yes	03 (12%)	04.83%
2.	No	22 (88%)	34.92%
Educational Status			
1.	Illiterate	20 (80%)	32.25%
2.	Educated	05 (20%)	07.93%
Lower Urinary Tract Infection			
1.	Yes	14 (56%)	22.58%
2.	No	11 (44%)	19.04%

UI and selected demographics in the current study were checked for an association through the Chi-square test. It was evident that there was no association between UI and age categories as the p-value (0.626>0.05) at a 95% confidence interval. Furthermore, UI and gravidity were not associated with each other as the p-value (0.930>0.05) at a 95% confidence interval. However, there was an association between UI and BMI in the current study as the p-value (0.013<0.05) at a 95% confidence interval (Table 3).

Table 3: Chi-Square test between Urinary Incontinence and Selected Variables

Sr. no	Variables	Urinary Incontinence		p-Value
		Yes	No	
1.	**Age Categories**			
	25 – 40 Years	12 (16.9%)	58 (83.1%)	0.626
	41 – 65 years	13 (14.1%)	79 (85.9%)	
2.	**Gravida**			
	1 – 3	06 (15.8%)	32 (84.2%)	0.930
	>3	19 (15.2%)	106 (84.8%)	
3.	**BMI (Kg/m^2)**			
	≤25	00 (0%)	28 (100%)	0.013*
	>25	25 (15.3%)	138 (81.5%)	

*p<0.05 Significance Level and at 95% Confidence Interval

DISCUSSION

This research reported a 15.3% prevalence of urine incontinence, which was lower than the 25–45% noted in European studies [9]. Garg *et al.*, revealed that 21.8% of Indian women had UI [16]. Because UI is frequently seen as a demeaning disease in Pakistani and other Asian cultures, the decreased incidence in this study may be because patients did not report their experiences with UI. Nonetheless, it is predicted that the number of UI patients will increase more in Asia (22%) than in the United States (18%) and Europe (5%) [17]. It suggests that the iceberg phenomenon and the scope of UI issues in Asian locations are comparable. In the female population of this study, the most prevalent UI was the stress type UI. The stress-type UI was the most common among the study's female participants. Garg *et al.*, and Rashidi *et al.*, also find similar results. There are several potential risk factors for stress UI in women, including decreased estrogen levels during the menopausal period, pelvic floor muscle, nerve, and connective tissue injury that occurs throughout pregnancy to delivery, and a history of gynaecological surgery [16, 18]. These many causes can result in urethral hypermobility, problems in the intrinsic structure of the urethral sphincter, and damage to the urethral supporting tissue (the levator ani, the anterior vaginal wall, and the extrinsic structure of the urethra), all of which can be signs of stress UI [19].Multiparity and urodynamic parameters are the primary risk factors for the development of UI in Lower Urinary Tract infections (LUTI), according to retrospective research conducted on Japanese female patients.The characteristics of LUTI in urodynamics, maximum free flow rate, maximal urethral closure pressure, and functional profile length, are linked to a higher incidence of UI in

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female patients [14].Urinary incontinence risk factors include metabolic syndrome, spontaneous birth, inadequate sanitation, advanced age, and urinary tract infections, according to a different study conducted on Chinese women [20]. In the present study, stress urinary incontinence was 48%, Overflow urinary incontinence 24%, Urge urinary incontinence 20% and mixed urinary incontinence 8%. Factors leading to urinary incontinence were normal vaginal delivery>3 76%, chronic cough 24%, history of gynaecological operation 12%, Illiterate 80% and lower urinary tract infection 56%. UI impairs social life components, physical activity, sexual relationships, and religious responsibilities. Furthermore, Age, UI intensity, UI kind, frequency of episodes, body weight, psychological variables, and medical treatment patterns are the elements that impact UI patients' quality of life.

This study is limited by its cross-sectional design, which restricts causal inferences between risk factors and urinary incontinence. Being a single-center study with non-probability consecutive sampling, the findings may not be fully generalizable to the broader population. Moreover, reliance on self-reported data may introduce recall or reporting bias. Future research should include multicenter, longitudinal studies with larger sample sizes to better establish causality and prevalence trends. It is also recommended that future studies explore the effectiveness of preventive interventions, such as pelvic floor training and health education programs, in reducing the burden of urinary incontinence among high-risk women.

CONCLUSIONS

It was concluded that UI is 15.3% prevalent in Pakistan, comparable to other Asian nations. Furthermore, low educational status (Illiterate) accounted for 32.25% of UI followed by 30.64% normal vaginal delivery >3, 22.58% Lower urinary tract infection, 09.67% Chronic cough, and 04.83% history of gynaecological operations. UTI may become the main risk factor in the development of UI. In addition, normal vaginal delivery more than three times and UTI may develop the key risk issues for the development of UI. The magnitude of UI problems may have an impact on the daily lives and habits of the patients.

Authors' Contribution

Conceptualization: AJ
Methodology: AJ, AF
Formal analysis: SB, AF
Writing and Drafting: SB
Review and Editing: SB, AJ, AF

All authors approved the final manuscript and take responsibility for the integrity of the work

Conflicts of Interest

All the authors declare no conflict of interest.

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