



Original Article

Prevalence of Postpartum Urinary Incontinence after Vaginal Delivery in Women Visiting a Tertiary Care Health Facility.

Article History:

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Abstract: **Objective:** To determine the frequency and patterns of postpartum urinary incontinence after vaginal delivery among women attending a tertiary care health facility. **Study Design:** Descriptive cross-sectional study. **Place and Duration of Study:** Department of Obstetrics and Gynecology, Liaquat University of Medical and Health Sciences, conducted over a period of three months, from August 2025 to October 2025. **Methodology:** Postpartum women aged 20 to 45 years presenting between six weeks and six months after vaginal delivery were included using non-probability convenience sampling. A total of 85 participants were enrolled based on calculated sample size parameters. Data were collected through face-to-face interviews using a structured questionnaire capturing demographic, obstetric, anthropometric, and urinary symptom information. Urinary incontinence was categorized into stress, urge, or mixed types according to predefined operational criteria. Statistical analysis was performed using SPSS version 24. **Results:** The mean age of participants was 30.8 ± 5.4 years. Overall prevalence of postpartum urinary incontinence was 28.2% (n = 24). Stress urinary incontinence was the most common subtype (58.3%), followed by urge and mixed urinary incontinence (20.8% each). Significant associations were observed between urinary incontinence and age group (p = 0.041), BMI category (p = 0.018), and parity (p = 0.032), while postpartum duration showed no significant association (p = 0.110). **Conclusion:** Postpartum urinary incontinence was common among women following vaginal delivery, with stress urinary incontinence being the predominant subtype. Increasing maternal age, higher BMI, and multiparity were significantly associated with urinary incontinence in the early postpartum period.

Keywords: Postpartum urinary incontinence; Vaginal delivery; Pelvic floor disorders; Maternal health; Risk factors.

INTRODUCTION

Postpartum bounds women to new defined states: mentally, socially, and physically. New urinary problems arise potentially during these postpartum changes, often urinary infection or incontinence. The International Continence Society defines urinary incontinence (UI) as a complaint of involuntary urine loss and is considered to be symptomatic [1]. UI issues may resolve on their own some time after birth or may be improved with pelvic floor exercises, but UI is prevalent, affecting many postpartum women.

Reports of UI postpartum varies widely, with a prevalence of 10.5% to 63% occurring anywhere between six weeks to a year postpartum.

Because postpartum UI is such a widespread concern of women's health issues, and is under-recognized, it is considered a public health issue. This is especially true for developing countries that may have limited postpartum care routines. Research shows that women delivering vaginally are more at risk for developing UI issues compared to those delivering via C-section. It is most likely due to the nerve and muscle

damage on the pelvic floor and the related stress that occurs 2.

Some of the main contributors to postpartum urinary incontinence can include changes to hormones, connective tissues, and pelvic floor muscles, as well as urinary retention. Research has shown that older mothers, along with mothers with a higher BMI or those with higher childbirth parities, are at greater risk 3. From a biological standpoint, this is a result of shifted and damaged pelvic tissues that may result in less control over the pelvic support structures, leading to sustained elevated position of the urethra. This can lead to less control of urinary retention mechanisms and urinary leakage 4.

Beyond the physical symptoms, urinary incontinence is known to increase fatigue, sexual dysfunction, decrease social participation, and increase psychological distress, thus adversely impacting quality of life.⁵ Many women remain undiagnosed and have to wait long for treatment since they do not seek medical care for this condition, despite its clinical importance. Studies conducted on the same subject have shown an array of prevalence and distribution of subtypes, where typically, stress urinary incontinence was recognized as the main type. The prevalence of the condition in regional studies is between 28 to 32%, which is in line with the global prevalence studies where the estimates range from 26 to 33%.⁶

Although there is evidence from different parts of the world, evidence from specialized health facilities in Pakistan is still scarce. Due to specific practices of obstetrics, differences in the ways people in the community understand health and differences in the ways people access health services may affect what proportions are reported and how common the conditions are, which is why this research is needed. The aim of this research was to establish the prevalence of urinary incontinence in the postpartum period among women who have had a vaginal delivery, at a tertiary health care facility.

METHODOLOGY

This research was a descriptive cross-sectional study aimed at determining the frequency and patterns of postpartum urinary incontinence at the Department of Obstetrics and Gynecology, Liaquat University of Medical and Health Sciences, in women following vaginal delivery. The study population included women who were postpartum and attended outpatient

and follow-up clinics duration the period from August 2025 to October 2025. Women aged 20 to 45 years who were postpartum following vaginal delivery and were postpartum from six weeks to six months were included. To reduce extraneous variables, the following women were excluded: women with a history of cesarean section, diagnosed psychiatric illness, urogynecological surgery, an active urinary tract infection, and diabetes.

The non-probability convenience sampling technique was used to recruit participants who met the inclusion criteria and provided informed consent. The sample size was determined after using the WHO sample size calculator, taking the expected prevalence from the earlier studies with a 95% confidence level and a 9% margin of error. There were a total of 85 participants in this study.

We obtained ethical approval from the institutional review board before we started the study. We informed participants about the objectives and procedures of the study and obtained written informed consent. We ensured the participants' confidentiality and privacy throughout the study. We collected data through in-person interviews using a pre-designed structured questionnaire. We captured data on demographic and clinical details including age, parity, postpartum duration, and occupation as well as relevant medical history. We used standard techniques to take anthropometric measurements of participants' height and weight. Body mass index was determined as weight in kilograms divided by height in meters squared.

We evaluated postpartum urinary incontinence by asking specific questions about the involuntary loss of urine. Involuntary loss of urine was then classified into stress urinary incontinence, urge urinary incontinence, and mixed urinary incontinence based on defined operational definitions. All the data collected were analyzed using the Statistical Package for Social Sciences (SPSS) version 24. Quantitative data were summarized by calculating means and standard deviations, while qualitative data were recorded in terms of frequency and percentage. We did a stratified analysis on age, body mass index, parity, and the duration of the postpartum period to see how these factors were associated with urinary incontinence. We used the chi-square or Fisher's exact test as appropriate, and a p-value of ≤ 0.05 was considered statistically significant.

RESULTS

85 postpartum women met the eligibility criteria and were included in the final analysis. After data cleaning, no incomplete datasets were identified.

Table 1 shows the sociodemographic and obstetric characteristics of the study participants. Age ranged from 22 to 50 years, with the average age 30.8 ± 5.4 years. The most common age group was 26 to 30 years (28.2%). About 62.4% of study participants were multiparous, and the rest (37.6%) were primiparous. Regarding postpartum duration, 4- to 6-month postpartum women comprised the largest group (43.5%), followed by those in the 2- to 4-

month range (31.8%), and 6 weeks to 2 months range (24.7%) (Table 1).

The mean (SD) values of age, postpartum duration, height, weight, and body mass index (BMI) as continuous variable descriptive statistics are presented in Table 2. The mean BMI of study participants was 27.3 ± 4.1 kg/m².

Table 3 shows the prevalence of postpartum urinary incontinence in the study participants. Postpartum urinary incontinence in the study group was observed in 24 participants, with a prevalence of 28.2%, while 71.8% of study participants did not have urinary leakage. Of the participants who reported urinary incontinence, 58.3% had stress urinary incontinence, whereas the remaining subtypes (urge urinary incontinence and mixed urinary incontinence) each comprised 20.8% of the overall urinary incontinence cases.

Table 4 shows the relationship between certain risk factors and urinary incontinence. Of the statistical analyses that were performed, urinary incontinence was significantly associated with age group ($p = 0.041$), body mass index category ($p = 0.018$), and parity ($p = 0.032$). Urinary incontinence and postpartum duration remained statistically insignificant ($p = 0.110$).

Table 1: Sociodemographic and Obstetric Characteristics of Study Participants (n = 85)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	20–25	18	21.2
	26–30	24	28.2
	31–35	20	23.5
	36–40	14	16.5
	41–45	9	10.6
Parity	Primipara	32	37.6
	Multipara	53	62.4
Postpartum duration	6 weeks–2 months	21	24.7
	2–4 months	27	31.8
	4–6 months	37	43.5

Table 2: Descriptive Statistics of Continuous Variables (n = 85)

Variable	Mean $\pm$ SD	Median (IQR)	Minimum	Maximum
Age (years)	30.8 ± 5.4	30 (27–34)	20	45
Postpartum duration (months)	3.8 ± 1.4	4 (3–5)	1.5	6
Height (m)	1.59 ± 0.06	1.58	1.48	1.72
Weight (kg)	69.2 ± 10.8	68	48	95
BMI (kg/m ²)	27.3 ± 4.1	26.9	19.5	36.8

Table 3: Prevalence of Postpartum Urinary Incontinence (n = 85)

Urinary Incontinence Status	Frequency (n)	Percentage (%)
Present	24	28.2
Absent	61	71.8

Table 4: Association of Risk Factors with Urinary Incontinence

Variable	Test Used	p-value
Age group	Chi square	0.041
BMI category	Chi square	0.018
Parity	Chi square	0.032
Postpartum duration	Fisher exact	0.110

DISCUSSION

This study was designed to assess the prevalence of and the factors associated with urinary incontinence in the postpartum period and to demonstrate the prevalence of urinary incontinence in the early postpartum period. A urinary incontinence prevalence of 28.2% was noted in this study, which has been reported to range from 25% to 35% in regional and international studies, based on the timing of the assessments and the methods used. The

reported prevalence of urinary incontinence in the postpartum period in regional studies supports the validity of the present study, substantiating that urinary incontinence in the postpartum period is a significant and largely unaddressed concern in maternal health⁷.

The study participants had a mean age of 30.8 ± 5.4 years, with most of the women being in the age group of 26 to 35 years. Similar age groups were reported in

previous studies relating to postpartum pelvic floor issues, and these studies were used to support the importance of early identification of pelvic floor dysfunction⁸. There were mostly multiparous women in the study, which was consistent with current regional practices and supported previous studies relating to the cumulative effect of vaginal deliveries on pelvic floor integrity⁹.

Anthropometric analysis found a mean overweight BMI and reported a strong correlation with BMI and urinary incontinence. The current analysis showed the effect of body weight on urinary incontinence has been documented in earlier works, demonstrating that body weight and urinary incontinence are related, where overweight and obese individuals have more urinary incontinence due to the stress from elevated intra abdominal pressure on the pelvic floor¹⁰. The effect of increasing maternal age also correlated with urinary incontinence. This also supports other cohort studies, stating that reduced tissue elasticity and decreased muscular strength with maternal aging have an effect on the recovery from birth and may hinder recovery from childbirth in older mothers.

The primary function of the pelvic floor is support and stress urinary incontinence was the primary diagnosis, and was present in 58.3%¹¹. This is in concordance with other studies and suggests that the mechanism for the injury is more likely related to the stress of child bearing than child birth. Multiple childbirths produced a statistically significant effect on the pelvic floor and showed that child bearing has a cumulative effect on the pelvic floor. However, the length of time from childbirth to the time of the study did not statistically affect the pelvic floor. This is in concordance with other similar studies which showed the timing of the study was less important than the other risk factors¹².

Although the following study/reflection has limitations, a lot of studies focus on other areas and do not take into account urinary incontinence post childbirth. Because this is a cross sectional study, it is limited in the inference it presents. Non-probability convenience sampling has limited applicability. However, there have not been a lot of studies that focus on the urinary incontinence of child birth, and the results are concordant with existing studies. The study is unique in that it focuses on an area that has not been well researched in the context of a tertiary healthcare system¹³.

CONCLUSION

The data collected in this study shows that one in three women will suffer from urinary incontinence, especially stress urinary incontinence (SUI), within the early postpartum phase after a vaginal delivery. Birth is linked with urinary incontinence due to stress caused to the pelvic branch and urinary system during labor. Like the other studies, this study shows that

older age of the mother, higher postpartum BMI, and higher order deliveries lead to higher levels of urinary incontinence and are important predictors when assessing the pelvic branch and other urinary system incontinence in the early postpartum phase. If a woman gives birth and has had no other postpartum symptoms of incontinence after six months, it doesn't mean their urinary incontinence symptoms will go away, as the presence of urinary incontinence symptoms is linked to other maternal and obstetric factors. This study helps understand and fills the existing epidemiology and data in this area by helping to understand the factors and distribution of urinary incontinence after pregnancy.

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