

# Urinary Incontinence in Women with Low Back Pain After Post Partum Period

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## ABSTRACT

**Background:** Urinary incontinence is a very common problem in postpartum women. In the literature, about 38 to 43% of postpartum females experience urinary incontinence (UI). Postpartum UI usually occurs due to bladder injury, nerve injury, pelvic floor muscle dysfunction or damage to urethra during delivery. In women having C-section, UI is most probably occurs due to instability of detrusor muscle resulting from vesical denervation. Others risks factors involve in development of UI are fetal factors, operative vaginal delivery and antenatal bladder neck mobility due to pelvic floor muscles (PFM) dysfunction and connective tissue weakness. Lower backache (LBP) is also very common in postpartum females due to joint laxity, weakness of connective tissue, loosening of ligaments and strained abdominal muscles due to enlargement of uterus. There's a coexisting link between low back pain and UI in postpartum females.

**Objective:** To find association between the severity of urinary incontinence and low back pain in women after postpartum period.

**Methodology:** In this study Quota sampling technique was used. Participants divided into two groups, one group with females having low back pain after postpartum period while other group was having females without low back pain after postpartum period. Participants were provided with questionnaires for urinary incontinence to find out the association between severity of UI and LBP. The questionnaires were self-administered and were provided in English language. Some participants were illiterate, thus questionnaires were filled from them by asking questions verbally.

**Results:** Statistics of ICIQ-UI score was checked by applying Fisher's exact test, The null hypothesis was not rejected because the p-value was > 0.05, indicating that there was no significant association between UI and LBP in females after their postpartum period

**Conclusion:** It is concluded from this study that there is no significant association found between UI and low back pain in women after postpartum period.

**Keywords:** Postpartum period, Urinary incontinence (UI), Stress urinary incontinence (SUI), Urgency urinary incontinence (UUI), Low back pain (LBP), Pelvic girdle pain (PGP), Pelvic floor muscles (PFM), Pelvic floor dysfunction (PFD)

## INTRODUCTION

LBP is defined as pain in lumbosacral region which may be localized or may be radiate to hip and leg. According to a research by Ghaderi, 84% of pregnant females suffered from LBP in Iran.<sup>1</sup> It is a common health issue found in postpartum females. The study by Katonis suggests that prevalence of LBP in postpartum females is 67%.<sup>2</sup> Most common causes of LBP are joint laxity, connective tissue weakness, strained abdominal muscles and pregnancy related osteoporosis due to fluctuations in hormonal level.

The pelvic floor muscles are major part of muscles around abdomen as they activate along with the activation of abdominal muscles.<sup>3</sup> They play a vital role to develop intra-abdominal pressure and provide stability to trunk and lumbo-pelvic region. Literature suggests that LBP also occurs due to reduce function of muscles of pelvic floor in patients of urinary incontinence.<sup>4</sup>

The involuntary leakage of urine is characterized as urinary incontinence. The most occurring form of UI is stress UI, leakage of urine on exertion i.e during coughing or sneezing, Other form is urgency UI leakage of urine accompanied by urgency. If a patient experiences both forms of UI, then it is named as mixed UI.<sup>5</sup>

Urinary incontinence is most seen health and hygiene issue in females of all ages. Its prevalence increases with age. This condition is more common in females during pregnancy and after delivery. About 41% females experience SUI during pregnancy (Vecchioli-Scaldazza and Morosetti, 2010).<sup>6</sup>

A major risk factor for postpartum UI is the delivery mode. Literature suggests UI is more common in vaginal delivery as compared to C-section. After vaginal delivery, it may occurs due to pelvic floor muscles dysfunction, change in bladder neck position, urethral mobility and visceral trauma i.e bladder injury or urethral injury. In a study it is found that A major risk factor for postpartum UI is the delivery mode in women having vaginal normal delivery

as compared to those having C-section, so proved that severity of UI is more in females with vaginal delivery. Women with levator ani injury had a higher increase in bladder neck descent as compared to women with intact levator ani muscle.<sup>7</sup>

Previous research shows a significant association between SUI and chronic LBP in 18 years above women age group.<sup>8</sup> The prevalence of UI in non-pregnant females with low back pain is 78%, while it is also mentioned that the link between UI and LBP is seen in all age female groups. Hypothetically, there is an association in UI and LBP in females after postpartum period, which is not yet described, in past researches. The rationale of this research is to find the occurrence of UI in females which are suffering from LBP after their postpartum period so that the physiotherapists dealing with LBP female patients should be aware of possibility of UI in those patients and try to focus on PFM strengthening along with LB muscles strengthening to overcome this problem.

## MATERIALS AND METHODS

This study design is analytical cross-sectional study. The data was collected from Pediatrics OPD of Fatima Memorial Hospital Lahore from 01-01-2020 to 08-01-2020. The sampling technique of this study was Quota Sampling. women were divided into two strata units, one group having females with low back pain after postpartum period while other group was having females without low back pain after postpartum period.

The calculated sample size was n=146 for each group. Using the formula, the expected population percentage P=0.67 and absolute precision d=0.05 are calculated with an 80 percent confidence interval:

$$n = z^2 \frac{P(1-P)}{d^2}$$

The population proportion was estimated as P=0.67 because no strong evidence about prevalence/frequency was found in the literature except one study in which frequency of low back pain was concluded to be 67%.<sup>9</sup>

Females of 18-45 years of age, with history of vaginal delivery, and having postpartum period of 42 days till 12<sup>th</sup> month of their parturition. Females with history of spinal surgery or having preconception incontinence were excluded from the study.

Visual analogue scale was used for low back pain, ICIQ-UI questionnaire measures incontinence of urine and incontinence severity index was used to check the severity of UI.

The data was collected from outpatient department of Fatima Memorial Hospital. All ethical concerns were considered in this study. An informed consent from the participants was taken. Demographics were also recorded of each subject. In this study, quota sampling technique was used. Two groups of people were developed, one group having females with low back pain after postpartum period while other group was having females without low back pain after postpartum period. Participants were provided with questionnaires for urinary incontinence to find out the association between severity of UI and LBP. The questionnaires were self-administered and were provided in English language. Questions were verbally asked from illiterate participants.

Continuous variables (age of females, gravida count) were calculated using mean and standard deviation while categorical variables (occupation of females, time period after postpartum, VAS score and ICIQ score) were described using frequency and percentages. Continuous variables were presented using histogram while categorical variables were presented using pie charts or bar graphs. Urinary incontinence and low back problem have been attributed was calculated using Fisher's exact test.

**RESULTS**

The study conducted on severity of urinary incontinence in female with low back pain after postpartum period.

Total 204 women participated in this research; among them 83.8% women were housewives while

16.2% were working women. All patients were of age 18 to 45 years, with a mean value of 28.01 and standard deviation of 4.320. Total gravida count was 5 with a mean value of 1.95 and standard deviation of 1.079

Table 1: statistics table of VAS score

	Frequency	Percent
None	102	50.0
1-3 Mild	29	14.2
4-6 Moderate	47	23.0
7-10 Severe	26	12.7

This table shows that half (102) of the participants had no low back pain while other half (102) of the participants have low back pain. Among those who are suffering from LBP, 14.2% are with mild pain, 23% are with moderate pain and 12.7% suffering from severe LBP.

Table 2: cross table of ICIQ-UI score and low back pain

ICIQ score	Low back pain		Total
	yes	no	
None	46	63	109
1-5 Mild	19	14	33
6-12 Moderate	30	22	52
13-18 Severe	7	2	9
19-21 Very severe	0	1	1

In the study, 29.4% women were with time period of less than 1 month after postpartum period, 30.9% were with time period of 1-3 months after postpartum period, 18.1% were with time

period of 4-6 months after postpartum period, 15.7% were with time period of 7-9 months after postpartum period and 5.9% women were with time period of 10-12 months after postpartum period.

Table 3: statistics table of ICIQ-UI score

	value	df	Asymptotic Significance (2 sided)	Exact sig. (2 sided)	Exact sig. (1 sided)	Point probability
Fisher's exact test	8.210			.060		

The table given below shows the statistics of ICIQ-UI score. Fisher's exact test is applied, result shows that the null hypothesis is not rejected since the p-value is greater than 0.05. .

a. 4 cells (40.0%) have a count that is less than 5. The predicted count is at least .50.

b. -2.259 is the standard statistic.

**Incontinence Severity Index Score:** Statistical analysis of incontinence severity index score is not required as there is no association found between low back pain and urinary incontinence in females after their postpartum period. Thus, it is useless to check the association of severity of UI and low back pain in women after postpartum period.

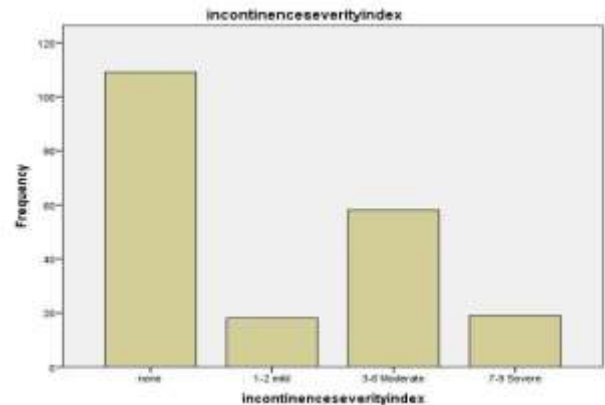


Figure 1: Bar chart of Incontinence Severity Index score

**DISCUSSION**

The purpose of this research was to determine severity of urinary incontinence in females with low back pain after postpartum period. In this study, two groups with equal number of women were organized, one group of women who were suffering from low back pain while women in other group were without low back pain. Prevalence and severity of UI was checked in them. Despite the reported association in UI and low back pain in females after postpartum period in different researches, the result of my research showed there is no relationship between the UI & low back pain in female after postpartum period.

In the study by Eliasson<sup>10</sup>, 78% of non-pregnant females with low back pain reported UI. Among them 73% experienced occasionally UI, 23% experienced several times and 4% often while 23% women suffered from significant UI. Among them 93% women reported low back pain, 19% used sanitary pads while daily life activities of 32% women were affected. Nullipara and parous women reported significant UI. It was also reported that women who had C-section were equally suffered from UI as those who delivered vaginally. In the study by Eliasson,<sup>10</sup> target population was non-pregnant females with LBP, but in this study, females with LBP after their postpartum period as population of interest to check the relationship between LBP and UI. perhaps it is a reason behind deviation of results from expected values.

A previous study showed that there is low prevalence of UI

in late postpartum period, only 11.36% women suffered from UI at 6 weeks, 9.32% at 3<sup>rd</sup> month, 10.51% at 6th month and 13.25 at 12th month after postpartum period. Although rate of UI was not changed, However, UI frequency decreased from 15.9 at six weeks to 7.9 at three months, 8.6 at six months, and 4.8 at twelve months.<sup>11</sup>

In a study by Kim JS, it was proved by evidence-based findings that UI has negative correlation with Static balance ability and LBP condition. Only 22.8% women experienced UI, but the presence of UI in women was found to have a strong relationship to LBP condition and static balancing ability.

(Kim et al., 2010).<sup>12</sup>

A study conducted by Hulago Kaptan in which Mann-Whitney U test was applied for statistical analysis showed that there is no statistical correlation found between UI and low back pain as The p-values for overall incontinence, urge incontinence, and stress incontinence were  $p = 0.131$ ,  $p = 0.103$ , and  $p = 0.68$ , respectively, showing no correlation between UI and LBP.<sup>13</sup>

A study reported that 40% of At 12 months after birth, women reported symptoms of UI and LBP. Among them, Caucasian ( $p = 0.023$ ), obese ( $p = 0.018$ ), induced labor ( $p = 0.038$ ), and vaginal delivery ( $p < 0.001$ ) were all found, p-values showing strong statistical correlation. It was also reported that obese and vaginally delivered women were at a high risk of moderate to severe impairment in daily chores is because of UI at 12 months postpartum.<sup>14</sup>

In a study, association is reported between urine incontinence and low back pain and result of study also showed that there is limited pelvic floor interventions efficacy in the treatment of low back pain in those patients.<sup>15</sup> In another study, it was reported that regardless of presence of UI, PFM strength is insufficient in women with low back pain. Women with urge incontinence have less activation of the transverse abdominis and internal oblique muscles.<sup>4</sup>

## CONCLUSION

The findings of this study revealed that there is no association between urine incontinence and low back pain in postpartum women.

## REFERENCES

1. Ghaderi, F., Asghari Jafarabadi, M., Mohseni Bandpei, M. Prevalence of Musculoskeletal Pain and Associated Factors with Low Back Pain during Pregnancy. The Iranian Journal of Obstetrics, Gynecology and Infertility. 2013; 15(41): 9-16.

2. Katonis P, Kampouroglou A, Aggelopoulos A, Kakavelakis K, Lykoudis S, Makrigrannakis A, et al. Pregnancy-related low back pain. Hippokratia. 2011;15(3):205-10.
3. Bussey MD, Aldabe D, Ribeiro DC, Madill S, Woodley S, Hammer N. Is Pelvic Floor Dysfunction Associated With Development of Transient Low Back Pain During Prolonged Standing? A Protocol. Clin Med Insights Womens Health. 2019;12:1179562X19849603.
4. de Abreu DL, Rodrigues PTV, Amaral Corrêa L, Lacombe ADC, Andreotti D, Nogueira LAC. The relationship between urinary incontinence, pelvic floor muscle strength and lower abdominal muscle activation among women with low back pain. European Journal of Physiotherapy. 2018;21(1):2-7.
5. Abrams P, Artibani W, Cardozo L, Dmochowski R, van Kerrebroeck P, Sand P, et al.
6. Reviewing the ICS 2002 terminology report: the ongoing debate. Neurourol Urodyn.2009;28(4):287.
7. Vecchioli-Scaldazza C, Morosetti C. Effect of aging on urinary incontinence in woman. Arch Ital Urol Androl.2010;82: 167-171.
8. Volløyhaug I, Van Gruting I, Van Delft K, Sultan AH, Thakar R. Is bladder neck and urethral mobility associated with urinary incontinence and mode of delivery 4 years after childbirth? Neurourol Urodyn. 2017; 36: 1403-1410.
9. Bush HM, Pagorek S, Kuperstein J, Guo J, Ballert KN, Crofford LJ. The association of chronic back pain and stress urinary incontinence: a cross-sectional study. J Womens Health Phys Therap. 2013;37(1):11-18.
10. Ostgaard HC, Andersson G. Postpartum low-back pain. Spine.1992; 17:53-55.
11. Eliasson K, Elfving B, Nordgren B, Mattsson E. Urinary incontinence in women with low back pain. Manual therapy. 2008; 13:206-212.
12. Burgio KL, Zyczynski H, Locher JL, Richter HE, Redden DT, Wright KC. Urinary incontinence in the 12-month postpartum period. Obstetrics & Gynecology.2003; 102:12911298.
13. Kim JS, Kim SY, Oh DW, Choi JD. Correlation between the severity of female urinary incontinence and concomitant morbidities: a multi-center cross-sectional clinical study. Int Neurourol J.2010;14(4):220-6.
14. Kaptan H, Kulaksızoğlu H, Kasımcıan O, Seçkin B. The Association between Urinary Incontinence and Low Back Pain and Radiculopathy in Women. Open Access Maced J Med Sci. 2016 Dec 15;4(4):665-669.
15. Mannion CA, Vinturache AE, McDonald SW, Suzanne C, Tough SC. The Influence of Back Pain and Urinary Incontinence on Daily Tasks of Mothers at 12 Months Postpartum. PLoS One. 2015 Jun 17;10(6):e0129615.
16. Welk B, Baverstock R. Is there a link between back pain and urinary symptoms? Neurourol Urodyn. 2020 Feb;39(2):523-532.