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Prevalence of pelvic floor disorders, its severity, and knowledge among postpartum women: A cross-sectional study

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ABSTRACT

Introduction: Pelvic floor disorders (PFDs) are multifaceted health issues affecting a substantial number of postpartum women worldwide. It involves conditions such as urinary incontinence, pelvic organ prolapse, and colorectal-anal distress, all of which can significantly impact an individual's overall well-being and quality of life. To determine the prevalence of pelvic floor disorders, their severity, and knowledge among postpartum women

Methodology: This cross-sectional study was conducted at the University of Lahore Teaching Hospital, The University of Lahore, Punjab, Pakistan. A sample of 116 participants was recruited using purposive sampling. Women aged 24 to 32 years, up to nine months postpartum, referred by a gynecologist, were included in the study. The dysfunction severity was measured using the pelvic floor disability index, and knowledge was measured by a prolapse incontinence knowledge questionnaire.

Results: The average age of females was 27.91±2.55 years, the majority 45(38.8%) had a graduation-level education and 75(64%) experienced cesarean section. Among pelvic floor dysfunction, 42(36%) had urinary incontinence, 38 (33%) had pelvic organ prolapse, and 36 (31%) had colorectal-anal distress. A total of 66(56.9%) postpartum females had mild dysfunction, 87(75%) lacked knowledge about urinary incontinence and 92(79.3%) about pelvic organ prolapse.

Conclusion: Urinary incontinence is prevalent among pelvic floor disorders in postpartum women, with a mild degree of severity and the majority of women did not know the symptoms of pelvic floor dysfunctions.

Keywords: Knowledge; Pelvic floor disorder; Postpartum; Pelvic organ prolapse; Urinary incontinence

Introduction

Pelvic floor disorders (PFDs) comprise a range of illnesses associated with the weakening of the endopelvic fascia and pelvic muscles. These consist of pelvic organ prolapse, urinary and anal incontinence, sexual dysfunction, and other urogenital symptoms. Worldwide, 49% of females reported having no less than one pelvic floor dysfunction category. This ratio was significantly greater in the population of pregnant women than after childbirth. The PFDs typically have a low tolerance rate,

which decreases the quality of life and impacts an individual's physical and mental well-being.2

The increasing age, weight, parity, modes of delivery, 4 and birth weight are predisposing factors for pelvic floor injury.⁵ It has been observed that cesarean delivery does not eliminate the risk of PFDs.6 During pregnancy, childbirth, and the first few weeks after delivery, the pelvic floor is under a lot of stress. Perineal trauma, a major contributing factor to PFDs, is associated with various characteristics, including maternal age, parity, fetal size,



and position. These factors increase the likelihood of episiotomies and spontaneous tears, particularly in vaginal births involving surgical interventions or prolonged second stages of labor.7 It is important to recognize women's awareness of pelvic floor health and their understanding of associated risk factors and potential symptoms. Many women consider pelvic floor dysfunction a common consequence of aging and childbearing rather than identifying them as health conditions requiring medical attention.8 Consequently, they often delay seeking help for pelvic floor dysfunction until a serious condition has developed, likely due to limited awareness of pelvic health.9 Therefore, this study aims to determine the prevalence and severity of pelvic floor dysfunction, as well as the knowledge of these issues among postpartum women.

Methodology

It was a cross-sectional study conducted from October 2023 to January 2024 at Sehat Medical Complex Lahore, Pakistan. The sample of 116 subjects was selected through a purposive non-probability sampling technique. The sample size was calculated using Epitool software, with a 73.4% prevalence of pelvic floor dysfunction, 10 0.08 precision, and 0.95 confidence interval. The females aged 24-32 years, up to nine months postpartum, and diagnosed patients of PFDs referred by a gynecologist were enrolled.1 The study eliminated women with acute illnesses, stillbirth, pregnant women, pre-term delivery of less than 28 gestational weeks, spinal cord injuries, cognitive impairments, and incapacity to respond to questions.¹¹

The ethical approval for the study was taken from the Research Ethical Committee of The University of Lahore (REC-UOL-210-02-2024) and it was conducted using the principles of the declaration of the Helsinki and the guidelines of strengthening the reporting of observational studies in epidemiology (STROBE). After informing the respondents about the purpose and objective of the study, their written and signed approval was obtained. The anonymity and confidentiality of the record were ensured. The demographic information was collected including age, parity, gestational age, method of birth, and level of education. The severity of PFDs was determined by using the Pelvic Floor Disability Index (PFDI-20) which

is a comprehensive tool designed to find out symptoms associated with pelvic floor dysfunction across three main areas: urinary incontinence (UI), pelvic organ prolapse (POP), and colorectal-anal distress (CRAD). It includes a total of 20 questions, with six questions each addressing urinary incontinence and pelvic organ prolapse, and eight questions focused on colorectal and anal symptoms. Participants were questioned about their level of discomfort with each symptom, zero being no symptoms to four indicating quite a bit of bothered symptoms. 12

The prolapse and incontinence knowledge questionnaire (PIKQ) was used to identify the knowledge about UI and POP. It is a 24-item assessment tool that includes 12 items about UI and POP each, consisting of a 3-point Likert scale ranging from "agree," "disagree," and "don't know". The "agree" answers were scored as 1 each, while disagree and 'don't know' answers were scored as 0. A score of 10 out of 12 on the UI subscale and 6 out of 12 on the POP subscale are considered proficient in the knowledge of UI and POP.¹³ Based on how many of the 12 questions had accurate responses, PIKQ scores were determined and divided into the following categories: 1) A score of ≤50 percent for the right answer indicates a lack of knowledge competence; 2) A score of 51-79.9 percent indicates considerable knowledge competence, and 3) A score of ≥80 percent indicates a high level of knowledge competence.14

The data was entered and analyzed using SPSS version 26.0. The mean and SD were used to describe quantitative factors like age. Frequency and percentage were used to represent qualitative characteristics like parity, education level severity of PFD, etc.

Results

The average age of participants was 27.91 ± 2.55 years. Most of the females i.e. 45 (38.8%) had a graduation-level education, 66 (56.9%) were multiparous. 86 (74.1%) had a gestational age of 38-40 weeks and 75 (64%) had a history of cesarean section. Urinary Incontinence was most prevalent among others and 66 (56.9%) had mild symptoms of PFD. Table 1 shows the prevalence and severity of pelvic floor disability.



Table 1: The prevalence and severity of PFD

Prevalence of different forms of PFDs				
Pelvic floor dysfunction	Frequency (n)	Percent (%)		
Urinary incontinence	42	36		
Pelvic organ prolapses	38	33		
Colorectal-anal distress	36	31		
Severity of PFDs				
Mild (1 to 33)	66	56.9		
Moderate (34 to 66)	42	36.2		
Severe (67 to 100)	8	6.9		
Total	116	100		

Table 2 shows the results of items in the PFDI-20 questionnaire showing the level of discomfort associated with PFDs. The majority of females reported mild discomfort with urine leakage, especially with cough, and experienced mild pressure in the lower abdomen and pelvic area and mild pain with defecation. Table 3 illustrates the results of individual items of knowledge related to urinary incontinence and pelvic organ Prolapse.

Table 4 indicates that a significant number of postpartum females, 87 (75%) had limited knowledge about urinary incontinence and 92 (79.3%) had insufficient/or low knowledge about pelvic organ prolapse.

Table 2: PFDI-20 regarding severity

Symptoms	Questions	NO	Yes, If yes, how much do they bother you?			
			Not at all	Somewhat	Moderately	Quite a bit
Urinary Distress	Frequent urination	36 (31%)	30 (25.9%)	27 (23.3)	11 (9.5%)	12 (10.3%)
	Urgency	25 (21.6%)	34 (29.3)	34 (20.3)	15 (12.9%)	7 (6.0%)
	UI with cough	20 (17.2%)	28 (24.1%)	43 (37.1%)	11 (9.5%)	14 (12.1%)
Incontinence	UI in tiny drops	22 (19%)	21 (18.1%)	44 (37.9%)	17 (14.7%)	12 (10.3%)
	Difficulty in emptying	44 (37.9%)	21 (18.1%)	28 (24.1%)	9 (7.8%)	14 (12.1%)
	Disturbance in genital region	19 (16.4%)	39 (33.6%)	19 (16.4%)	19 (16.4%)	20 (17.2%)
Pelvic Organ Prolapse	Pressure in abdomen	12 (10.3%)	39 (33.6%)	43 (37.1%)	2 (1.7%)	20 (17.2%)
	Heaviness in Pelvis	19 (16.4%)	36 (31.0%)	46 (39.7%)	8 (6.0%)	7 (6.0%)
	Bulge through vagina	41 (35.3%)	31 (26.7%)	33 (28.4%)	6 (5.2%)	5 (4.3%)
	Pressure around genitals during BM*	61 (52.6%)	19 (16.4%)	16 (13.8%)	19 (16.4%)	1 (0.9%)
	A feeling of incomplete bladder emptying	42 (36.2%)	33 (28.4%)	30 (25.9%)	22 (19%)	11 (9.5%)
	Urinate by pressing vagina	56 (48.3%)	37 (31.9%)	17 (14.7%)	5 (4.3%)	1 (0.9%)
Colorectal- Anal Distress	Efforts to produce Bowel Movement	40 (34.5%)	26 (22.4%)	23 (19.8%)	11 (9.5%)	16 (13.8%)
	Have not entirely emptied bowels	37 (31.9%)	36 (31.0%)	21 (18.1%)	9 (7.8%)	13 (11.2%)
	Loose stool despite solid-form	49 (42.2%)	33 (28.4%)	21 (18.1%)	7 (6.0%)	6 (5.2%)
	Leakage when stool is not solid	48 (41.4%)	30 (25.9%)	29 (25.0%)	5 (4.3%)	4 (3.4%)
	Uncontrolled release of gas	43 (37.1%)	32 (27.6%)	24 (20.7%)	10 (8.6%)	7 (6.0%)
	Pain on defecating	14 (12.1%)	36 (31.0%)	38 (32.8%)	13 (11.2%)	15 (12.9%)
	Urgency to have a BM	43 (37.1%)	16 (13.8%)	26 (21.6%)	23 (19.8%)	9 (7.8%)
	Part of bowel bulges outward	61 (52.6%)	26 (22.4%)	15 (12.9%)	11 (9.5%)	3 (2.6%)



Table 3: Prolapse incontinence knowledge questionnaire

	Questions	Agree	Disagree	Don't know
	UI is a greater concern in younger women than older women.	35 (30.2%)	52 (44.8%)	28 (24.1%)
	Women are more prone to urinary leakage than men	56 (48.3%)	11 (9.5%)	49 (42.2%)
	Limited options for treating urinary leakage besides using pads and diapers	30 (25.9%)	62 (53.4%)	24 (20.7%)
	Unnecessary to rule out the type of urinary leakage before treating it	20 (17.2%)	78 (67.2%)	18 (15.5%)
Urinary	Various factors can contribute to urinary leakage	66 (56.9%)	25 (21.6%)	25 (21.6%)
Incontinence (UI)	Exercises can be done to aid in urinary leakage	56 (48.3%)	20 (17.2%)	40 (34.5%)
	Medications can lead to urinary leakage.	41 (25.3%)	28 (24.1%)	47 (40.5%)
	Once had UI, it couldn't be managed	19 (16.4%)	75 (64.7%)	22 (19.0%)
	Physicians conduct a bladder examination to rule out UI	80 (69.0%)	13 (11.2%)	23 (19.8%)
	UI can only be cured surgically	17 (14.7%)	63 (54.3%)	36 (31.0%)
	Numerous childbirths can result in UI	67 (57.8%)	24 (20.7%)	25 (21.6%)
	UI can be treated with some type of therapy	83 (71.6%)	19 (16.4%)	14 (12.1%)
	Younger females have greater concern than older	34 (29.3%)	51 (44.0%)	31 (26.7%)
	Numerous childbirths can result in POP	67 (57.8%)	19 (16.4%)	30 (25.9%)
	POP can occur at any stage of life.	56 (48.3%)	26 (22.4%)	34 (29.3%)
	Exercise can help prevent its progression	52 (44.8%)	16 (13.8%)	48 (41.4%)
	Heaviness or pressure might be the symptoms	72 (62.1%)	13 (11.2%)	30 (25.9%)
Pelvic	Physicians must thoroughly assess the patient	87 (75.0%)	13 (11.2%)	16 (13.8%)
Organ Prolapse (POP)	There are limited relief options	17 (14.7%)	48 (41.4%)	51 (44.0%)
	Prolong physical activity can result in POP	53 (45.7%)	19 (16.4%)	44 (37.9%)
	Surgery is the treatment option	26 (22.4%)	33 (28.4%)	57 (49.1%)
	Physicians conduct a blood test to diagnose	49 (42.2%)	28 (24.1%)	39 (33.6%)
	Pessary to relieve pelvic organ prolapse	40 (34.5%)	20 (17.2%)	56 (48.3%)
	Obese individuals have a lower risk	17 (14.7%)	38 (32.8%)	61 (52.6%)



Table 4: Level of knowledge among Postpartum females regarding knowledge among postpartum females regarding PIKQ-UI and PIKQ-POP

Level of Knowledge				
Knowledge competency	PIKQ-UI	PIKQ-POP		
Lack (<50%)	87 (75%)	92 (79.3%)		
Considerable (50-79.9%)	27 (23.3%)	19 (16.4%)		
High (>80%)	2 (1.7%)	5 (4.3%)		

Discussion

Pelvic floor disorders present a significant health concern due to their substantial behavioral implications on a person's quality of life, such as low self-esteem, stress, and annoyance.¹⁵ Most women choose to struggle in silence from urine incontinence and pelvic organ prolapse despite their occurrence, financial burden, and mental and physical complications. 16 Therefore, this study aims to find out the prevalence of different pelvic floor disorders, their severity, and knowledge among postpartum women. The results of the current study showed a high prevalence of symptoms of PFD including urinary incontinence, pelvic organ prolapse, and colorectal and anal distress in postpartum females, accounting for 36%, 33%, and 31% prevalence respectively. However, the majority had mild levels of discomfort associated with these disorders and poor knowledge about UI and POP. According to a study by Giugale et al., the determination of the prevalence of UI in primiparous women showed that 55% of the women out of 99 had urine incontinence during the postpartum period of 12 months.17

Similar findings were observed in a study by Mili Rohilla and Shakun Tyagi, they found that pelvic floor dysfunction was present in 20.7% of cases with 10.6% having urine incontinence, 11.9% having flatus incontinence, 8.6% having fecal incontinence.¹⁸ Likewise, a study by M. Lipschuetz reported that 64% of their participants had symptoms of PFDs. Urinary incontinence was complained of by 9.1-12.1% of women and dyspareunia was experienced by 37.3% of women, while 10% reported some form of fecal or flatus incontinence. Additionally, 11.1% had some level of obstructed defecation. The severe discomfort from PFD symptoms affected between 40% and 90.9% of respondents.¹⁹

Another survey showed a high prevalence of PFDs with a 48% prevalence of urine incontinence, 60% of anal incontinence, and 29% of pelvic organ prolapse. Whereas, 27% of people reported disturbance by UI, and 56% by anal discomfort.11 A high colorectal and anal distress was reported in a study by David Yohay with 31.5% of patients reporting higher straining efforts.²⁰ Almost the same prevalence of colorectal and anal distress was observed in our study but it was lesser than the other forms of PFDs. Significantly more respondents (31.33%) than expected said they were unaware of pelvic organ prolapse, and a notable amount (21.16%) said they were unaware of urinary incontinence. Thus, indicating that women have low proficiency in knowledge about pelvic floor dysfunction.

Approximately 399 varied pregnant and postpartum women participated in a study by Mckay et al., and 74.2% of the participants were ignorant of UI and POP. According to the same study, people with lower levels of education, Hispanic women, and primiparity were most likely to be deficient in UI knowledge. Lower educational levels and women who had never consulted a urologist or urogynecologist before were also associated with a lack of prolapse knowledge competency.²¹ Similarly, the level of PFDs understanding ranged from minimal to moderate in a survey proposed. The most common PFD that was looked into was urinary incontinence, and the most significant causes for not understanding the pelvic floor were socioeconomic status, low educational attainment, and the limited availability of knowledge. Most women lack awareness about pelvic floor muscle dysfunctions, are unaware of available interventions, and are unable to recognize indications for these conditions.²²

In further investigations, it is imperative to utilize standardized and validated instruments to increase the reliability and validity of study outcomes. The study was conducted on a small sample size and captured data only at a single point, there should be a larger population and extensive study designs. Efforts should be made to provide effective treatment methods for patients with pelvic floor dysfunctions having urinary and colorectal-anal distress. Further studies should also consider the factors that cause pelvic floor dysfunctions among postpartum women and incorporate educational interventions to enhance



awareness and knowledge among postpartum women, promoting preventive measures and early intervention.

Conclusion

Urinary incontinence is prevalent among pelvic floor disorders in postpartum women and has a mild level of severity. The women had poor knowledge regarding symptoms of pelvic floor disorders, their complications, and management.

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