

Study On Prevalence and Associated Risk Factors of Pelvic Floor Dysfunction in Postpartum Women

Pratibha Jha^{1*}, Sumedha Singh², P. K. Mishra³

¹Specialist Medical Officer (Obs. and Gynae.), SDH/CHC, Biraul, Darbhanga

²Medical Officer (Obs. and Gynae.), SDH/CHC, Biraul, Darbhanga

³Deputy Superintendent, SDH/CHC, Biraul, Darbhanga

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Corresponding Author: Dr. Sumedha Singh

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Abstract:

Background: According to an epidemiological survey, pelvic floor dysfunction (PFD), the most prevalent dysfunction in women, has been estimated to impact between 23% and 49% of them. PFDs come with a host of drawbacks, including discomfort, humiliation, social isolation, and a lowered standard of living (QOL). In order to provide theoretical and empirical evidence for clinical diagnosis and treatment of postpartum pelvic floor dysfunction, this study intends to identify the elements that contribute to the development of such dysfunctions and quantify their severity.

Methods: From December 2022 to November 2023, SDH/CHC, Biraul, Darbhanga, was the site of this cross-sectional study. Three hundred eighty-five recent mothers were asked questions about their symptoms, including faecal incontinence, flatus, and pelvic floor dysfunction. IBM SPSS Statistics 23 was used to examine the data.

Results: There was a 20.7% prevalence of pelvic floor dysfunction, with 10.6% of cases being urine incontinence, 11.9% being flatus incontinence, 8.6% being faecal incontinence, and 1.6% being pelvic organ prolapse. The prevalence of pelvic floor dysfunction was shown to be significantly greater in women who were multiparous, had previously undergone genital surgery, had a lengthy labor, used fundal pressure, and had a history of instrumental delivery.

Conclusion: The study found the characteristics linked to a high incidence of pelvic floor dysfunction and showed that one in five postpartum women had pelvic floor dysfunction. This group of women has an unmet need for routine incontinence screenings so that appropriate interventions can be arranged in a timely manner.

Keywords: Pelvic floor dysfunction; Postpartum; Incontinence; Pregnancy; Prolapse.

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Introduction

The most prevalent dysfunction in women is known as pelvic floor dysfunctions (PFDs), which encompasses a range of conditions like overactive bladders, sexual dysfunction, pelvic organ prolapse (POP), anal incontinence (AI), urinary incontinence (UI), and other symptoms pertaining to the lower urinary tract and defecation [1, 2]. An epidemiological report [1] claims that PFDs affect between 23% and 49% of women.

A recent study found that 40%-91% of patients who give birth to their first child report having at least one or more PFD symptom [2]. The prevalence of PFDs rises with age and delivery. 10% of PFD patients have UI, 30% have anal incontinence, 30-76% has POP [3], and 2-25% has AI [4, 5]. In addition to pain and a lower quality of life (QOL), PFDs and pelvic floor injuries can cause anxiety due to social isolation, depression, loss of work, and depression [4]. POP may result in lower worker productivity, higher expenses, and a greater

financial strain on health care systems [3-6]. On the other hand, UI will cause women to experience sadness, worry, and a loss of self-worth, which will impact their social, cultural, physical, psychological, marital, domestic, and sexual wellbeing. Researchers have found that a few risk factors are connected to PFDs in earlier investigations. It is important to remember that a variety of circumstances can affect a woman's development of postpartum dysfunction before, during, and after giving delivery.

Examples include head circumference, neonatal weight, estrogen levels, gestational diabetes, smoking during pregnancy, prenatal urine incontinence, age, body mass index (BMI), delivery style, number of deliveries, and so on [7-9]. Thus, it is crucial to recognize and comprehend the risk factors for postpartum depression in this setting. The impact of this on women's capacity to function following childbirth is significant. Numerous risk

factors that contribute to PFDs have been found in recent research; however, the results of these studies are still insufficient in terms of sample size, control, and risk factor selection, and they require the support of high-quality, large-sample data [2].

Material and Methods

From December 2022 to November 2023, SDH/CHC, Biraal, Darbhanga, was the site of this cross-sectional study. The study comprised 385 women in total. On the first or second day following birth, 385 postpartum women in the obstetrics and gynecology ward were included in the study population.

The presence of any level of pelvic floor dysfunction, as indicated by the patient in the form of stress/urge incontinence, stool/flatus incontinence, and cervicovaginal descent, was the study's main finding. Risk factors such as age, parity, baby's birth weight, and delivery method were included in the secondary outcome. Following

delivery, all women who exhibited symptoms were checked on at one and six months.

Statistical Package for the Social Sciences (SPSS) version 23 was used to evaluate the data by applying the relevant statistical tests.

The arithmetic mean and standard deviation were used to represent quantitative factors like birth weight, age, and parity, and the proportion and percentage were used to convey qualitative characteristics like prolapse and incontinence.

When necessary, the chi-square test and relevant non-parametric tests were run on the data.

Results

Twenty.7% (80/385) of the women had pelvic floor dysfunction; of them, 10.6% had urine incontinence, 11.9% had flatus incontinence, 8.6% had faecal incontinence, and 1.6% had pelvic organ prolapse. Table 1 describes the forms of PFD women have.

Table 1: Distribution of women with one or more types of pelvic floor dysfunction

Types of Pelvic Floor Dysfunction	No. of cases out of 385	Percentage
Urinary incontinence	41	10.6%
Faecal incontinence	33	8.6%
Flatus incontinence	46	11.9%
Pelvic Organ Prolapse	6	1.6%
Any form of Pelvic floor dysfunction	80	20.8%

Various characteristics of women with different types of PFD are described in Table 2.

Table 2: Demographic characteristics of women with and without pelvic floor dysfunction

Characteristics	Symptomatic(n1)	Asymptomatic(n2)	% of PFD reported [n1/(n1+n2)]	p-Value
Age Distribution				
<25years	37	153	19.47	0.19
25to35years	39	147	20.9	
>35years	4	5	44.4	
Parity				
Primiparous	20	111	15.2	0.047
Multiparous	60	194	23.6	
Birth weight of baby				
<2.5kg	22	108	16.9	0.25
2.6to3.0kg	22	117	15.8	
3.1to3.5kg	22	56	28.2	
>3.5kg	4	19	17.4	
Mode of delivery				
Normal Vaginal Delivery	50	199	20.1	0.032
Emergency Caesarean section	17	78	17.9	
Instrumental delivery	9	11	45	
Elective Caesarean Section	4	17	19	
Time period between two successive pregnancies				
Less than 2 years	14	42	25	0.85
2 to 4 years	21	82	20.3	
More than 4 years	25	66	27.4	
History of previous surgery for incontinence/prolapse				

No	70	301	18.8	0.005
Yes	10	3	76.9	
Duration of labour				
Normal	44	213	17.1	0.016
Prolonged	36	88	29.0	
Duration of pregnancy				
Full term	61	250	19.6	0.35
Preterm	8	64	12.5	
Fudal pressure used				
No	41	190	17.7	0.040
Yes	35	99	26.1	

A statistically significant relationship was discovered between the occurrence of at least one form of PFD and parity, delivery mode, history of any prior incontinence/prolapse surgery, length of labor, and use of fundal pressure. Table 3 illustrates how multivariate logistic regression analysis

revealed that parity, delivery style, and use of fundal pressure during parturition are independent predictors of pelvic floor dysfunction symptoms. Compared to primiparous women (OR-2.1), multiparous women (OR-3.2) have higher odds of being ill.

Table 3: Odds ratio with 95% Confidence interval (CI) for pelvic floor dysfunction done using Multi-variate logistic regression model

Risk Factors	Odds Ratio	95%CI
Parity		
Primiparous	2.1	1.1-4.5
Multiparous	3.2	2.3-6.5
Mode of delivery		
Caesarean Section	0.9	0.6-1.7
Vaginal delivery	2.8	0.9-4.4
Fudal pressure used		
Yes	2.5	2.2-5.3
No	0.8	0.5-3.4

Of the 80 symptomatic women, 76 were followed up, and it was found that at the conclusion of the one-month interval, 34.2% of the women (26/76) were still exhibiting symptoms, and at the end of the six-month period, 11.8% of the women (9/76) reported having some symptoms. In order to treat their symptoms, three of the six women with pelvic organ prolapse underwent surgery.

Discussion

According to the study, 80 out of 385 women reported having one or more symptoms of pelvic floor dysfunction, indicating that the condition is prevalent (20.8%). However, 359 women were interviewed for a study done in South India, [10] the only study currently available from India, and 18.6% of the women reported having urine incontinence.

Our study found a greater prevalence of pelvic floor dysfunction (20.8%) than did a study by Chitra TV [9], which found a prevalence of 18.6%. While the prevalence of faecal and flatus incontinence was significantly greater in our study (8.6% and 11.6%, respectively) than in their study (0.0056% for faecal incontinence and 0.0083% for flatus incontinence), the prevalence of urine incontinence in our sample was 10.9% as opposed to 16.7%. In our study, the disease's prevalence rose as the mother's age grew.

In women under 25, the frequency was 19.47%, in the 25 to 35 age group, 20.9%, and in the over 35 age group, 44.4% ($p < 0.199$). Among women who gave birth to babies weighing less than 2.5 kg, the prevalence was 15.8%, in the group 2.6 to 3.0 kg, 28.2%, in the group 3.0 to 3.5 kg, and 17.4% in the group weighing more than 3.5 kg ($p < 0.251$). This was an intriguing discovery because it appeared that the heaviest infants caused the least degree of pelvic floor discomfort.

This may be explained by the finding that babies of moms with higher nutrition and muscular tone tend to have less dysfunctional relationships with their offspring. 15.2% of primiparous women and 23.6% of multiparous women reported having pelvic floor dysfunction; the Pearson Chi square test resulted in a statistically significant value of 3.65 with $p = 0.047$. Similar to our results, a South Indian study found that incontinence affected 12.5% of primiparous women and 26.4% of multiparous women. [10] As a result, it was discovered that multiparous women had a far higher prevalence than primiparous women. In terms of delivery mode, vaginal deliveries were divided into two categories: normal vaginal deliveries and instrumental deliveries, which required the use of forceps or a ventouse. Cesarean sections were further divided into elective

and emergency categories. Comparing caesarean sections which were 19% for elective and 17.9% for emergency with instrumental delivery, it was found that the prevalence of pelvic floor dysfunction was higher at 45% and with normal vaginal birth at 20.1%.

In certain countries, women choose to have an elective caesarean section during their first and subsequent pregnancies in an attempt to prevent pelvic floor dysfunction issues such as anal and urine incontinence, vaginal prolapse, and hemorrhoids. [12] In addition, our cross-sectional observational study demonstrates a significant reduction in the prevalence of pelvic floor dysfunction following a caesarean section when compared to instrumental and vaginal delivery. The study indicated that the length of labor was associated with an increase in the prevalence of pelvic floor dysfunction, which was statistically significant ($p = 0.016$). A pathologically extended labor can be prevented by using partograms to monitor labor and by identifying and treating cephalopelvic disproportion.

The study also highlighted the need to utilize fundal pressure during labor with caution as it can increase the chance of developing postpartum pelvic floor dysfunction. The likelihood of experiencing signs of the condition was nearly doubled when fundal pressure and instrumental vaginal delivery were used. Compared to women who gave birth at full term, preterm mothers had a lower prevalence of pelvic floor dysfunction; however, this relationship was not found to be statistically significant because preterm babies are typically small and light-weight, which does not put a lot of stress on the anatomy of the pelvic floor.

When women were questioned about their past surgical experiences for prolapse or incontinence, it was discovered that those who had undergone such procedures had a higher risk of dysfunction or recurrence than those who had not, with a statistically significant p -value of 0.005.

Another Australian study (MacLennan AH11) found a correlation between gender, age, parity, and style of birth and the prevalence of pelvic floor diseases in a non-institutionalized community. The study made clear how widespread pelvic floor diseases are and how closely they correlate with female gender, aging, pregnancy, parity, and caesarean birth. The relationship between various delivery methods and the commencement of disease, as well as risk factors for the development of pelvic floor dysfunction, were also identified by this study. Therefore, we could incorporate the potential risk variables into our questionnaire; yet, postpartum women were not the sole participants in our study.

Women benefited from the study because it provided information on exercises that strengthen

the muscles in the pelvic floor, which have been shown to be effective in preventing chronic pelvic floor dysfunction. [13,14]

Conclusion

The study found the characteristics linked to a high incidence of pelvic floor dysfunction and showed that one in five postpartum women had pelvic floor dysfunction. The study specifically focused on the population at risk, particularly older multiparas with lengthy labor and a history of prior genital surgery. It also demonstrated the unfulfilled need to routinely screen for incontinence in this particular group of women in order to plan timely interventions.

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