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Original Article

Understanding Pelvic Organ Prolapse in Women: A Study on Risk Factors and Management Strategies

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Abstract

Background: Pelvic organ prolapse (POP) is a common yet often underreported condition affecting women, particularly those with a history of childbirth, menopause, and increased intra-abdominal pressure. This study aimed to evaluate the risk factors and management strategies of pelvic organ prolapse among women.

Methods: This was a cross-sectional observational study conducted in Maternity Center, Madhupur, Tangail, Bangladesh during the period from January 2023 to December 2023. The study aimed to assess the risk factors, symptoms, and management strategies associated with pelvic organ prolapse (POP) among women. The study included 110 women diagnosed with pelvic organ prolapse, recruited from the outpatient department of Obstetrics and Gynecology between January 2024 and December 2024. Data was analysed using SPSS software version 26.0.

Results: The study analyzed 110 women with pelvic organ prolapse (POP), revealing a mean age of 55.3 ± 9.8 years, with most participants aged 50 or older (63.6%). High parity was common, with 81.8% having three or more children. Overweight and obesity were prevalent, affecting 40.9% and 27.3% of participants, respectively. Based on the POP-Q system, Stage II (36.4%) and Stage III (31.8%) were the most common presentations. The most frequent risk factors included vaginal delivery history (83.6%), menopause (65.5%), and chronic constipation (40.9%). Symptoms such as vaginal bulge (72.7%), pelvic pressure (60.0%), and urinary incontinence (49.1%) were widely reported. Management strategies varied, with 31.8% undergoing pelvic floor muscle training (PFMT), 25.5% using pessaries, and 42.7% requiring surgical intervention, predominantly colporrhaphy (20.0%), sacrocolpopexy (13.6%), and uterosacral ligament suspension (9.1%).

Conclusion: In this study provides a comprehensive understanding of pelvic organ prolapse (POP) by examining its associated risk factors and management strategies. The findings highlight that vaginal delivery, menopause, obesity, are significant contributors to POP, with most patients presenting at moderate to severe stages. Management strategies varied, with surgical interventions being preferred in advanced cases, while conservative approaches like pelvic floor muscle training and pessary use were effective in milder cases.

Keywords: Pelvic Organ Prolapse, Risk Factors, Management Strategies, Vaginal Delivery

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Introduction

Pelvic organ prolapse (POP) is a prevalent condition among women, characterized by the descent of pelvic organs—such as the bladder, uterus, rectum, or small intestine—into or through the vaginal canal due to weakened support structures. This condition significantly impacts women's quality of life, leading to physical discomfort, psychological distress, and social challenges. Understanding the prevalence, risk factors, and management strategies of POP is essential for developing effective healthcare interventions and improving women's health outcomes globally. The global prevalence of POP varies widely, influenced by factors such as diagnostic criteria, study populations, and assessment methods. A systematic review and meta-analysis reported a worldwide prevalence of approximately 30.9%, with rates ranging from 24.4% to 38.2% depending on the diagnostic approach used.[1] Studies utilizing physical examinations tend to report higher prevalence rates compared to those relying solely on symptom-based assessments, highlighting the importance of comprehensive clinical evaluations in accurately determining POP prevalence.[2] In specific regions, prevalence rates reflect local demographic and healthcare factors. For instance, a cross-sectional survey in rural Bangladesh found that 15.6% of women reported symptomatic POP.[3] Similarly, research in Ethiopia indicated a pooled prevalence of 22.7%, underscoring the significant burden of POP in low-resource settings.[4] These variations emphasize the need for region-specific studies to inform targeted healthcare strategies. The development of POP is multifactorial, with several risk factors identified across diverse populations. Advancing age is a significant risk factor, with the incidence of POP increasing as women age due to changes in pelvic floor musculature and connective tissues.[5] Pregnancy and childbirth, particularly vaginal deliveries, are strongly associated with an increased risk of POP because of mechanical stress and potential trauma to pelvic structures during childbirth.[6] Higher body mass index (BMI) has been linked to an increased risk of POP, likely due to chronic elevated intra-abdominal pressure exerting strain on pelvic support structures.[7] Family history and genetic predisposition play a crucial role in the integrity of connective tissues, making certain individuals more susceptible to POP.[8] Additionally, chronic conditions such as chronic obstructive pulmonary disease (COPD) and constipation, which involve prolonged straining, have been associated with an increased risk of POP.[9] Management strategies for POP range from conservative approaches to surgical interventions, depending on the severity of the condition and patient preferences. Conservative management includes lifestyle adjustments, pelvic floor muscle training (PFMT), and the use of pessaries.[10] PFMT has been shown to alleviate symptoms and improve the quality of life in women with POP.[11] Pessaries, which are devices inserted into the vagina to support pelvic organs, offer a non-surgical option for symptom relief and are particularly beneficial for women who wish to avoid or postpone surgery.[12] Surgical interventions are considered for women with significant symptoms or when conservative measures are ineffective. The choice of surgical procedure depends on factors such as the type and severity of prolapse, patient comorbidities, and the desire to preserve vaginal function.[13] Common surgical options include anterior or posterior colporrhaphy, sacrocolpopexy, and uterosacral ligament suspension. The use of synthetic mesh in POP surgery has been a topic of debate due to concerns about complications; thus, the decision to use mesh should be individualized and discussed thoroughly with the patient.[14] This study aimed to evaluate the risk factors, and management strategies of pelvic organ prolapse among women.

Methods

This was a cross-sectional observational study conducted in Maternity Center, Madhupur, Tangail, Bangladesh during the period from January 2023 to December 2023. The study aimed to assess the risk factors, symptoms, and management strategies associated with pelvic organ prolapse (POP) among women. The study was approved by the Institutional Review Board (IRB), and informed consent was obtained from all participants. The study included 110 women diagnosed with pelvic organ prolapse, who were recruited from the outpatient department of Obstetrics and Gynecology between January 2024 and December 2024.

Inclusion criteria

Women aged 18 years or older.

Diagnosis of pelvic organ prolapse confirmed by clinical examination and the POP-Q system.

Women willing to participate and provide informed consent.

Exclusion criteria

Women with other pelvic conditions, such as pelvic inflammatory disease, malignancies, or severe systemic diseases.

Women with cognitive impairment or those unable to provide informed consent.

Data was collected through structured interviews and clinical examinations. The participants were asked to complete a questionnaire that included demographic details, reproductive history, and symptom assessment. Additionally, the clinical examination was performed by experienced gynecologists using the POP-Q system for staging the prolapse. POP was staged using the POP-Q system, which categorizes prolapse into five stages (Stage 0 to Stage IV) based on the descent of pelvic organs. The examination was performed in the lithotomy position, with the patient in a relaxed state. The stage of prolapse was classified according to the descent of the

bladder, uterus, or rectum. Data was analyzed using SPSS software version 26.0 (IBM Corp., Armonk, NY, USA). Descriptive statistics were used to summarize demographic characteristics, risk factors, and management strategies. The Chi-Square test was used to assess the association between risk factors and pelvic organ prolapse (POP). Continuous variables, such as age and BMI, were expressed as mean ± standard deviation (SD). Categorical variables, such as the frequency of symptoms and management approaches, were reported as frequencies and percentages. The results are presented in tables. Ethical clearance was taken from---------.

Results

Table 1: Distribution of patients according to demographic characteristics (N=110)

Characteristic	Number	Percentage
Age (Mean ± SD)	55.3 ± 9.8	—
Age Group (Years)		
30-39	12	10.9
40-49	28	25.5
50-59	35	31.8
≥60	35	31.8
Parity		
1-2 Children	20	18.2
3-4 Children	42	38.2
≥5 children	48	43.6
BMI (kg/m²)		
<25 (Normal)	35	31.8
25-29.9 (Overweight)	45	40.9
≥30 (Obese)	30	27.3

Table 1 presents the demographic characteristics of the study participants (N=110). The mean age was 55.3 ± 9.8 years, with most women being 50 years or older (63.6%). Parity was notably high, with 81.8% of participants having three or more children. Regarding BMI, 40.9% were overweight, and 27.3% were obese, indicating a significant proportion with increased body weight, a known risk factor for pelvic organ prolapses.

Table 2: Distribution of patients according to the distribution of pelvic organ prolapse stages (Based on POP-Q System) (N=110)

POP Stage	Number	Percentage
Stage I	18	16.4
Stage II	40	36.4
Stage III	35	31.8
Stage IV	17	15.4

Table 2 illustrates the distribution of pelvic organ prolapse (POP) stages among the study participants based on the POP-Q system. Stage II (36.4%) and Stage III (31.8%) were the most prevalent, indicating that a majority of women presented with moderate to severe prolapse. Stage I was observed in 16.4% of cases, while Stage IV, the most advanced stage, accounted for 15.4%, reflecting the varying severity of POP among the participants.

Table 3: Distribution of patients according to risk factors associated with pelvic organ prolapse (N=110)

Risk Factor	Number (N=110)	Percentage (%)	p-value
Vaginal Delivery History	92	83.6	<0.001*
Obesity (BMI ≥30)	30	27.3	0.045*
Menopause	72	65.5	0.002*
Chronic Constipation	45	40.9	0.031*
Heavy Lifting (Occupation)	33	30.0	0.078
Family History of POP	18	16.4	0.112

Table 3 presents the distribution of risk factors associated with pelvic organ prolapse (POP) among 110 patients, highlighting statistically significant associations. Vaginal delivery history was the most prevalent risk factor (83.6%, p<0.001), followed by menopause (65.5%, p=0.002) and chronic constipation (40.9%, p=0.031). Obesity (BMI ≥30) was observed in 27.3% of cases (p=0.045), while heavy lifting due to occupation (30.0%, p=0.078) and a family history of POP (16.4%, p=0.112) showed weaker associations. These findings underscore the multifactorial nature of POP, with vaginal delivery, menopause, and obesity emerging as significant contributors.

Table 4: Distribution of patients according to common symptoms (N=110)

Symptom	Number	Percentage
Vaginal Bulge	80	72.7
Pelvic Pressure	66	60.0
Urinary Incontinence	54	49.1
Difficulty in Defecation	39	35.5
Dyspareunia (Painful Intercourse)	42	38.2

Table 4 displays the distribution of common symptoms experienced by patients with pelvic organ prolapse (POP). The most frequently reported symptom was vaginal bulge, affecting 72.7% of participants, followed by pelvic pressure in 60.0% of cases. Urinary incontinence was reported by 49.1% of patients, while difficulty in defecation was noted by 35.5%. Additionally, dyspareunia (painful intercourse) was experienced by 38.2% of participants, highlighting the range of physical and sexual symptoms associated with POP.

Table 5: Distribution of patients according to management strategies used (N=110)

Management Approach	Number	Percentage
Pelvic Floor Muscle Training (PFMT)	35	31.8
Pessary Use	28	25.5
Surgical Treatment	47	42.7
- Anterior/Posterior Colporrhaphy	22	20.0
- Sacrocolpopexy	15	13.6
- Uterosacral Ligament Suspension	10	9.1

Table 5 presents the distribution of patients according to the management strategies used for pelvic organ prolapse (POP). Among the study participants, 31.8% opted for Pelvic Floor Muscle Training (PFMT), while 25.5% used a pessary as a conservative management option. A total of 42.7% of patients underwent surgical treatment, with the most common procedures being anterior/posterior colporrhaphy (20.0%), followed by sacrocolpopexy (13.6%), and uterosacral ligament suspension (9.1%), reflecting the variety of treatment options based on severity and patient preference.

Discussion

The mean age of participants in this study was 55.3 ± 9.8 years, with a predominant age group of 50 years or older (63.6%). This is consistent with findings from other studies that suggest POP is more prevalent in postmenopausal women due to hormonal changes that weaken pelvic support structures.[15] The study also found that 81.8% of women had three or more children, which is in line with the well-established association between parity and the risk of developing POP.[16] The high prevalence of overweight and obesity in this cohort (68.2%) is consistent with other studies that have found obesity (BMI ≥30) to be a significant risk factor for POP, due to the increased intra-abdominal pressure it causes.[17,18] The distribution of POP stages in this study revealed that Stage II (36.4%) and Stage III (31.8%) were the most prevalent, indicating that the majority of women presented with moderate to severe prolapse. Stage I was observed in 16.4%, while Stage IV was noted in 15.4% of cases. These findings emphasize the need for early detection and management of POP to prevent progression to more severe stages, which can significantly impact a woman's quality of life. The study identified several key risk factors for POP, with vaginal delivery history (83.6%) being the most common. This is consistent with the well-documented association between vaginal childbirth and the risk of POP due to perineal trauma, uterine descent, and damage to pelvic floor muscles.[19,20] The high prevalence of menopause (65.5%) in this study also reflects the role of hormonal changes in the weakening of pelvic support structures, which is a known risk factor for POP.[21] Additionally, chronic constipation (40.9%) and heavy lifting (30.0%) were reported by a significant number of participants, both of which contribute to increased intra-abdominal pressure, a major risk factor for POP.[22] The study also found that 27.3% of women were obese (BMI ≥30), which has been shown in multiple studies to be a significant risk factor for POP due to the added strain on the pelvic floor.[17] The most common symptom experienced by the participants was vaginal bulge (72.7%), followed by pelvic pressure (60.0%). These findings align with previous studies, where women commonly report a sensation of vaginal bulge or heaviness, which is a hallmark symptom of POP.[18] Other common symptoms included urinary incontinence (49.1%) and dyspareunia (38.2%). The presence of difficulty in defecation in 35.5% of participants reflects the impact of POP on bowel function, a common complaint among women with advanced stages of prolapse.[24] These symptoms significantly affect a woman's quality of life and highlight the importance of early intervention. The management of POP in this study was varied, with 42.7% of participants undergoing surgical treatment, including anterior/posterior colporrhaphy (20.0%), sacrocolpopexy (13.6%), and uterosacral ligament suspension (9.1%). Surgical intervention is often necessary for women with advanced stages of prolapse or those who do not respond to conservative management.[25] However, conservative approaches such as pelvic floor muscle training (31.8%) and pessary use (25.5%) were also employed, particularly in women with milder prolapse or those who were not candidates for surgery.[26-33]

Limitations of The Study

The study was conducted in a single hospital with a small sample size. So, the results may not represent the whole community.

Conclusion

In this study provides a comprehensive understanding of pelvic organ prolapse (POP) by examining its associated risk factors and management strategies. The findings highlight that vaginal delivery, menopause, obesity, are

significant contributors to POP, with most patients presenting at moderate to severe stages. Management strategies varied, with surgical interventions being preferred in advanced cases, while conservative approaches like pelvic floor muscle training and pessary use were effective in milder cases.

Recommendation

Based on the findings of this study, early screening, and risk factor modification should be prioritized to reduce the burden of pelvic organ prolapse (POP). Health education on pelvic floor exercises, weight management, and avoiding heavy lifting can help in prevention. Increased awareness among healthcare providers about early-stage identification and the benefits of conservative management, such as pelvic floor muscle training and pessary use, can improve patient outcomes. Additionally, for severe cases, timely surgical intervention should be considered to enhance quality of life. Further research with larger population samples is recommended to refine management strategies and establish standardized guidelines for POP treatment.

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References

1. Hadizadeh-Talasaz Z, Khadivzadeh T, Mohajeri T, Sadeghi M. Worldwide prevalence of pelvic organ prolapse: A systematic review and meta-analysis. Iranian J Public Health. 2022.
2. Akter F, Gartoulla P, Oldroyd J, Islam RM. Prevalence of, and risk factors for, symptomatic pelvic organ prolapse in rural Bangladesh: A cross-sectional survey study. Int Urogynecol J. 2016 Nov;27(11):1753–9.
3. Addisu D, Mekie M, Belachew YY, Degu A, Gebeyehu NA. The prevalence of pelvic organ prolapse and associated factors in Ethiopia: A systematic review and meta-analysis. Front Med. 2023;10:1193069.
4. El-Nashar SA, Singh R, Chen AH. Pelvic organ prolapse: Overview, diagnosis and management. J Gynecol Surg. 2023 Feb 1;39(1):3–11.
5. Machin SE, Mukhopadhyay S. Pelvic organ prolapse: A review of the etiology, presentation, diagnosis and management. Menopause Int. 2011 Dec;17(4):132–6.
6. Wilkins MF, Wu JM. Epidemiology of pelvic organ prolapse. Curr Obstet Gynecol Rep. 2016 Jun;5(2):119–23.
7. Weintraub AY, Glinter H, Marcus-Braun N. Narrative review of the epidemiology, diagnosis, and pathophysiology of pelvic organ prolapse. Int Braz J Urol. 2019;46:5–14.
8. Geynisman-Tan J, Kenton K. Surgical updates in the treatment of pelvic organ prolapse. Rambam Maimonides Med J. 2017;8(2).
9. Maher C, Yeung E, Haya N, Christmann-Schmid C, Mowat A, Chen Z, et al. Surgery for women with apical vaginal prolapse. Cochrane Database Syst Rev. 2023;(7).
10. Hagen S, Stark D, Glazener C, Dickson S, Barry S, Elders A, et al. Individualized pelvic floor muscle training in women with pelvic organ prolapse (POPPY): A multicentre randomized controlled trial. Lancet. 2014;383(9919):796–806.
11. Dumoulin C, Hay-Smith J. Pelvic floor muscle training versus no treatment for urinary incontinence in women. Eur J Phys Rehabil Med. 2008;44:47–63.
12. Bugge C, Adams EJ, Gopinath D, Stewart F, Dembinsky M, Sobiesuo P, et al. Pessaries (mechanical devices) for managing pelvic organ prolapse in women. Cochrane Database Syst Rev. 2020;(11).
13. Barber MD, Brubaker L, Burgio KL, Richter HE, Nygaard I, Weidner AC, et al. Comparison of 2 transvaginal surgical approaches and perioperative behavioral therapy for apical vaginal prolapse: The OPTIMAL randomized trial. JAMA. 2014;311(10):1023–34.
14. For the Systematic Review Group of the Society of Gynecologic Surgeons, Abed H, Rahn DD, Lowenstein L, Balk EM, Clemons JL, et al. Incidence and management of graft erosion, wound granulation, and dyspareunia following vaginal prolapse repair with graft materials: A systematic review. Int Urogynecol J. 2011 Jul;22(7):789–98.
15. Abrams P, Andersson KE, Birder L, Brubaker L, Cardozo L, Chapple C, et al. Fourth International Consultation on Incontinence: Recommendations of the International Scientific Committee: Evaluation and treatment of urinary incontinence, pelvic organ prolapse, and fecal incontinence. Neurourol Urodyn. 2010;29(1):213–40.
16. Handa V, Brubaker L, Eckler K. Urinary incontinence and pelvic organ prolapse associated with pregnancy and childbirth. UpToDate. 2014.
17. Nygaard I, Bradley C, Brandt D, Initiative WH. Pelvic organ prolapse in older women: Prevalence and risk factors. Obstet Gynecol. 2004;104(3):489–97.
18. Chaliha C, Khullar V. Management of vault prolapse. Rev Gynaecol Pract. 2005;5(2):89–94.
19. Houman J, Weinberger JM, Eilber KS. Native tissue repairs for pelvic organ prolapse. Curr

Urol Rep. 2017 Jan;18(1):6.
20. Lukacz ES, Lawrence JM, Buckwalter JG, Burchette RJ, Nager CW, Luber KM. Epidemiology of prolapse and incontinence questionnaire: Validation of a new epidemiologic survey. Int Urogynecol J. 2005 Aug;16(4):272–84.
21. Brito LGO, Pereira GMV, Moalli P, Shynlova O, Manonai J, Weintraub AY, et al. Age and/or postmenopausal status as risk factors for pelvic organ prolapse development: Systematic review with meta-analysis. Int Urogynecol J. 2022 Jan;33(1):15–29.
22. Miedel A, Tegerstedt G, Mæhle-Schmidt M, Nyrén O, Hammarström M. Nonobstetric risk factors for symptomatic pelvic organ prolapse. Obstet Gynecol. 2009;113(5):1089–97.
23. Tunn R, Baessler K, Knüpfer S, Hampel C. Urinary incontinence and pelvic organ prolapse in women: Prevention and treatment. Deutsches Ärzteblatt Int. 2023;120(5):71.
24. Giannini A, Russo E, Cano A, Chedraui P, Goulis DG, Lambrinoudaki I, et al. Current management of pelvic organ prolapse in aging women: EMAS clinical guide. Maturitas. 2018;110:118–23.
25. Maher CM, Feiner B, Baessler K, Glazener CMA. Surgical management of pelvic organ prolapse in women: The updated summary version Cochrane review. Int Urogynecol J. 2011 Nov;22(11):1445–57.
26. Patwari SQ. Transforming Rural Health: The Impact of Telehealth on Access and Care. TAJ: Journal of Teachers Association. 2021 Dec 31;34(2):51-56.
27. Ahasan MM, Patwari MS, Yamaguchi M. Risk of eating disorders and the relationship with interest in modern culture among young female students in a university in Bangladesh: a cross-sectional study. BMC Women's Health. 2023;23(1):35.
28. Patwari SQ. Public Health during the Global Pandemic Covid-19: Intervening, Perceiving and Incorporating.
29. Hasan H, Rahman MH, Haque MA, Rahman MS, Ali MS, Sultana S. Nutritional management in patients with chronic kidney disease: A focus on renal diet. Asia Pacific Journal of Medical Innovations. 2022 ;1(1):34-40.
30. Patwari SQ. Rise of E-Cigarettes: Implications for Public Health and Policy. TAJ: Journal of Teachers Association. 2017 Dec 31;30(2):43-51.
31. Mashiusjaman M, Patwari SQ, Siddique MA, Haider SM. Infant feeding pattern of employed mothers in Dhaka city of Bangladesh.
32. Patwari SQ. Bridging the Gap: Impact of Race, Gender, and Socioeconomic Factors on Health Equity. TAJ: Journal of Teachers Association. 2015 Dec 31;28(2):51-58.
33. Dietz HP. Pelvic organ prolapse review. Aust Fam Physician. 2015;44(7):446–52.

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