Original Article

Pelvic Organ Prolapse in Women Aged ≤30: Frequency, Predisposing Factors, and Clinical Outcomes

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Abstract

Objective: To determine the frequency, associated risk factors and clinical outcomes of pelvic organ prolapse (POP) among women aged ≤30 years.

Methodology: The cross-sectional research was carried out at the Department of Obstetrics & Gynaecology, Ward-08, Jinnah Postgraduate Medical Centre, Karachi, based on the medical records of the period between January 2022 and December 2024. A total of 138 women diagnosed with POP with complete demographic and clinical information available were included in the study. Information was extracted on the age, obstetric history, BMI status, comorbidities, lifestyle factors, and management received. Chi-square tests were used to examine the associations between POP and potential determinants. A regression test (logistic regression [univariate and multivariate]) was conducted to determine independent predictors.

Results: Of 138 women presenting with POP, 35 (25.4%) were aged ≤30 years and 103 (74.6%) were older. Most of them were multiparous (88.4% delivered vaginally), and 27.5% of them had a history of instrumental delivery. The intervals between pregnancies were short (85.5%), and the majority of the women were overweight/obese (84.8%). Significant associations were found between POP and mode of delivery ($p = 0.001$), instrumental delivery ($p < 0.001$), and diabetes mellitus ($p < 0.001$). The multivariate analysis proved instrumental delivery to be an independent predictor (OR = 0.047: 95% CI = 0.003-0.806). The management involved pessary placement (13.8) or surgery (86.2) with vaginal hysterectomy being the most frequent (58). In 98.6% of cases, clinical improvement was noted.

Conclusion: POP among women ≤30 years was uncommon but notable. Instrumental delivery emerged as a significant predictor, emphasizing the need for safer obstetric practices and early pelvic floor assessment. Strengthened obstetric care and preventive strategies may reduce long-term POP burden in young women.

Key words: Pelvic organ prolapses; delivery; labour; Obstetrical Extraction; Obstetric Labour complications; Pelvic floor disorders.

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Introduction

The descent of the pelvic organs (bladder, uterus, and rectum) from their normal anatomical locations into or beyond the vaginal canal as a result of weakening of the pelvic floor muscles and connective tissue is known as pelvic organ prolapse (POP). Younger women are not exempt from the consequences of POP, even if its prevalence rises with age and parity.[1] POP has always been thought to affect postmenopausal or older multiparous women, but new research suggests that it can also affect women under 30, but this is comparatively uncommon and poorly understood.[2,3]

Due to underreporting, cultural stigma, and a lack of statistics from low- and middle-income nations, the actual worldwide burden of POP among young women is still unknown. However, some risk factors have been demonstrated to raise the chance of having POP at an earlier age.[4–6] These risk factors include early age at first childbirth, high parity, prolonged and obstructed

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labor, instrumental births, low nutritional status, and manual labor. Furthermore, continuous coughing, chronic constipation, and connective tissue disorders (such Ehlers-Danlos syndrome) may all contribute to the early weakening of pelvic support systems[7]. POP in teenagers and women in their early 20s has been documented in a number of studies from South Asia and Sub-Saharan Africa; these individuals frequently arrive with severe stages of prolapse as a result of delayed medical care. [8,9]

According to a Nepalese study, almost 29.8% of POP cases involved women undergoing early marriages, short birth intervals and multiple pregnancies.[10] Although POP is a widespread gynecological problem in Pakistan, there is a dearth of population-based data that primarily target women under 30. Studies conducted at the institutional level in tertiary care facilities indicate that a sizable proportion of patients undergoing surgery for POP belong to this younger age group, indicating a significant yet underappreciated subpopulation.[11] Urinary or fecal incontinence, sexual dysfunction, infertility, and social disengagement are just a few of the severe physical and psychological effects that early-onset POP can have on young women.[12]

Additionally, there are clinical difficulties in managing POP in younger women. In order to maintain pelvic function and fertility, surgical procedures must be carefully planned, and conservative approaches such as the use of pessaries may not be practically or culturally acceptable in all situations13. This study is conducted to examine the prevalence, risk factors, and clinical outcomes of POP in women ≤ 30 years of age due to the scantiness of focused research on young women with POP in Pakistan. The results will pave ways for preventive initiatives and will highlight the burden of disease in this age range. The results will support clinical decision-making in settings with limited resources. he primary objective of the study was to determine the frequency of pelvic organ prolapse (POP) among women aged ≤30 years. The secondary objectives were to identify the associated risk factors contributing to POP in women aged ≤30 years and to assess the clinical outcomes and complications among young women diagnosed with POP.

Methodology

This cross-sectional study was performed on data records from the Department of Obstetrics & Gynaecology, Ward-08, JPMC Karachi. Medical records covering the period from January 2022 to December 2024 were reviewed to evaluate pelvic organ prolapse among women aged ≤ 30 years. Ethical Approval was received from Institutional Review Board of Jinnah Postgraduate Medical Centre No.F.2-81/2025-GENL/363-A/JPMC dated 25th June 2025. All women diagnosed with pelvic organ prolapse and documented in OPD registers, ward files, or operative records with complete demographic and clinical information available were included in the study. Records not having essential data were excluded from the review. Non probability consecutive sampling is used. A structured proforma was used to extract information from outpatient department, admission, and surgical records. Variables included age, parity, BMI status, interpregnancy interval, comorbidities, obstetric risk factors (prolonged labor, instrumental delivery, traumatic delivery), and lifestyle-related contributors such as chronic constipation, chronic cough, and heavy lifting. Details of conservative and surgical management, alongside follow-up outcomes, were also recorded. Data was entered and analyzed using SPSS version 30.0. Categorical variables are represented as frequencies and percentages. Chi-square test was applied to see the association of pelvic organ prolapse with various risk factors. Logistic Regression (Univariate analysis and multivariate analysis) was used to control the confounding factors and identify independent predictors. For operational clarity, a short interpregnancy interval was defined as an interval of less than 2 years (24 months), whereas an adequate interpregnancy interval was defined as an interval of 2 years (24 months) or more.

Results

A total of 138 women presented with pelvic organ prolapse during the study period. Among them, 35 (25.4%) were aged ≤30 years, while 103 (74.6%) were ≥30 years.

Of the total sample, 50 (36.2%) were premenopausal, 33 (23.9%) perimenopausal, and 55 (39.9%) postmenopausal. Most women (122; 88.4%) had exclusively vaginal deliveries, 12 (9.4%) had both vaginal and cesarean deliveries, and 3 (2.2%) were nulliparous. A history of instrumental delivery was present in 38 women (27.5%). A short interpregnancy interval was noted in 118 (85.5%).

Regarding BMI, 21 (15.2%) had normal BMI, while 117 (84.8%) were overweight or obese. Comorbidities included diabetes in 49 (35.5%) women and

hypertension in 22 (15.9%). Chronic constipation was reported by 68 women (49.2%), and heavy weight lifting by 62 (44.9%). [Table I]

Table I: Demographics and clinical characteristics of women with Pelvic organ prolapse,

Study variables		N(%)
Age	Less than 30 years	35 (25.36%)
	More than 30 years	103 (74.63%)
Menopausal status	Pre-menopausal	50 (36.2%)
	Peri-menopausal	33 (23.9%)
	Post-menopausal	55 (39.9%)
Parity	Nulliparous	3
	Multiparous	
Interpregnancy interval	Short interpregnancy interval (< 24 months)	118 (85.5%)
	Good interpregnancy interval (> 24 months)	20 (14.5%)
BMI	Underweight	10 (7.2%)
	Normal	11 (8.0%)
	Overweight	101 (73.2)
	Obese	16 (11.6%)
Mode of delivery	Never had given	3 (2.2%)
	All vaginal deliveries	122 (88.4)
	Both vaginal deliveries and Cesarean sections	12 (9.4%)
History of instrumental deliveries		38 (27.5%)
Comorbidities	Diabetes	49 (35.5%)
	Hypertension	22 (15.9%)
History of chronic constipation		68 (49.3%)
History of heavy weight lifting		62 (44%)
Pelvic organ prolapse stage	Stage 1	19 (13.8%)
	Stage 2	39 (28.3%)
	Stage 3	56 (40.6%)
	Stage 4	24 (17.4%)

Chi-square/Fisher's Exact Test revealed significant associations between pelvic organ prolapse and mode of delivery (p-value = 0.001) history of instrumental delivery ($p < 0.001$) and diabetes mellitus ($p < 0.001$). [Table II] After adjusting for confounders in multivariate logistic regression, instrumental delivery remained a significant independent predictor of prolapse (OR = 0.047; 95% CI: 0.003–0.806) shown in Table III.

Out of 138 women, 19 (13.8%) women were managed by conservative management (pessary placement) 119 women were managed surgically. Among them, 80 (58%) had vaginal hysterectomy, 20 (14.5%) had sacropexy, 15 (10.9%) had sacrospinous fixation, and 4 (2.9%) had modified Manchester repair. Distribution of management options among 2 age groups i.e., age ≤30 years and age ≥30 years is shown in Table IV.

Post- surgical treatment follow-up at 1 month from 119 women [138(total) – 19(conservatively managed) = 119] showed that 118 (99.1%) improved (i.e., complain of pelvic organ prolapse resolved completely), 1 (0.84%) partially improved (i.e., complain of pelvic organ prolapse resolved to major degree but there is still minimal to mild prolapse), 1 (0.84%) noted recurrence.

Table II: Association of Pelvic organ prolapse with various risk factors:

Variables		Age of patient		p-value
		≤ 30 years	**≥ 30 years**	
Mode of delivery	All vaginal deliveries	32	90	**0.001**
	Both cesarean + vaginal deliveries	0	13	
	Never undergone delivery	3	103	
History of instrumental deliveries		18	20	**<0.001**
Interpregnancy interval categorization	Short interpregnancy interval	31	87	0.551
	Good interpregnancy interval	4	16	
BMI	Underweight-normal	3	18	0.280
	Overweight-obese	32	85	
History of diabetes		3	46	**<0.001**
History of hypertension		5	17	0.757
Chronic constipation		15	53	0.379
Heavy weight lifting		16	46	0.914

Table III: Unadjusted and adjusted Odds ratio of various risk factors in women with pelvic organ prolapse aged ≤ 30 years vs ≥ 30 years.

Variables	Unadjusted OR (CI)	P-value	Adjusted OR (CI)	P-value
History of instrumental delivery	**0.228 (0.100 – 0.518)**	**<0.001**	**0.047 (0.003-0.806)**	**0.035**
Interpregnancy interval	0.702 (0.218 – 2.260)	0.553	0.053 (0.001- 2.204)	0.123
Heavy weight lifting	0.958 (0.444 – 2.070)	0.914	5.86 (0.544- 63.261)	0.145
Chronic constipation	1.413 (0.652 – 3.062)	0.380	0.934 (0.091- 9.597)	0.954
BMI	2.259 (0.623 – 8.190)	0.215	15.456 (0.440 – 542.7)	0.132
History of Diabetes	8.608 (2.477 – 29.913)	<.001	7.293 (0.467 – 113.8)	0.156
History of hypertension	1.186 (0.403 – 3.493)	0.757	0.000 (0.000 - .)	0.995

Table IV: Management of Pelvic organ prolapse received by patients.			
Management options	**Age of patient ≤ 30 years**	**Age of patient ≥ 30 years**	**Total**
Vaginal hysterectomy	0	80	80
Sacropexy	20	0	20
Sacrospinous fixation	0	15	15
Modified Manchester repair	2	2	4
Ring pessary placed	13	6	19
Total	35	103	138

Discussion

In this study, we examined the prevalence and contributing variables of pelvic organ prolapse (POP) in women under 30 years of age with older women.[1, 16] Although POP is more common in postmenopausal and multiparous women, reports of its incidence in younger women are rising in low- and middle-income nations. Major contributing factors include excessive parity, early childbirth, and restricted access to professional obstetric care.[14,15]

Compared to older women, younger women have stronger pelvic floor muscles and more elastic connective tissue. Despite risk factors such early marriage, poor nutrition, hard manual labor, and several childbirths, this protects against prolapse.[17,18]

In our study instrumental delivery demonstrated a statistically significant correlation on multivariate regression; however, because the dependent variable was coded, the adjusted odds ratio was less than 1. The association's direction suggests that women with POP who were older than 30 were more likely to have instrumental deliveries. This is in line with the findings that surgical vaginal births, especially those using forceps, result in considerable pelvic floor damage, such as levator ani muscle avulsion, which greatly raises the risk of prolapse in later life/ [19,20]

Levator abnormalities are closely linked to anterior and apical compartment prolapse and have been found in up to one-third of women after forceps-assisted delivery. [7, 21] Vacuum extraction may be less dangerous, but it still causes pelvic floor dysfunction and soft tissue strain.[15,22] Parity showed no statistical significance in our sample. Although large cohort studies continue to identify multiparity as a dominant risk factor.[9,23,24]. Nonetheless, there is substantial evidence from around the world that multiparity is a major risk factor for POP. [2,9,23, 24]

In our study sacropexy, conservative management with pessary and modified Manchester repair was more common in women aged ≤ 30 years. Whereas vaginal hysterectomy and sacrospinous fixation was more common in women aged >30years. [Table 4] One woman undergoing sacropexy for 3rd degree UV prolapse reported recurrence 1 month after surgery. Poor compliance to post-operative instructions i.e., avoid weight lifting, squatting for 3 months was a primary reason as patient resumed her activities including squatting and heavy weight lifting from 10th post operative day.

Early-onset POP has been linked to collagen anomalies, genetic susceptibility, and a family history of pelvic floor diseases.[25, 26] The subset of young women who developed POP while having fewer traditional obstetric risk factors may be affected by these.

Our findings reinforce the importance of obstetric care quality, particularly minimizing unnecessary instrumental deliveries and highlight the need for culturally acceptable conservative management strategies in younger women.

Limitations of the Study: The study was conducted in a single tertiary care center, which may limit generalizability. Data was collected from medical records hence patients with incomplete or missing data were not included, which may impact the result. Small sample size of women ≤ 30 years reduced statistical power for subgroup analysis.

Conclusion

Pelvic organ prolapse among women aged ≤ 30 years was relatively uncommon in our study population. Instrumental vaginal delivery emerged as a significant predictor highlighting the importance of safer obstetric practices and early pelvic floor assessment. Preventive strategies including improved obstetric care and postpartum pelvic floor rehabilitation may reduce the long-term burden of POP in young women.

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