



## UNDERSTANDING PELVIC ORGAN PROLAPSE: CAUSES, SYMPTOMS, AND RISK FACTORS

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**Abstract:** Background: Pelvic organ prolapse (POP) refers to the downward displacement of one or more organs, which include the uterus, vagina, urethra, bladder, rectum, sigmoid colon, and small intestine, from their normal anatomical location. This displacement arises due to the structural support's collapse and might vary in severity. Objective: This study was contributed to present and analyse the basic criteria in terms of causes, symptoms, and risk factors which related to Pelvic Organ Prolapse. Patients and methods: The current study conducted a thorough examination of data pertaining to individuals with pelvic organ prolapse. Data pertaining to the baseline characteristics of participants with pelvic organ prolapse were gathered. A total of 45 patients, ranging in age from 30 to 60 years, were enrolled. Data was collected from samples obtained from different hospitals in Iraq, spanning from February 15, 2022, until September 26, 2023. The purpose of the study was to examine the major findings about pelvic organ prolapse, specifically focusing on the symptoms, causes, as well as risk factors which affect the overall quality of life for patients. Results: This study revealed that women aged 50 and above experienced the highest level of impact, accounting for more than half (55.56%) of the total number of participants. This group consisted of 31 patients with a body mass index exceeding 29.5. These findings emphasise the significant influence of older individuals on the overall patient population. This study identified the prevalence of common symptoms in patients, particularly affecting women. These symptoms included mass descending per vagina in 12 patients, a feeling of bulge in the vagina with ten patients, vaginal bleeding in 8 patients, as well as urinary incontinence in 8 patients. Moreover, this research discovered risk factors impacting patients in the long term since it found operative delivery, a family history of POP, vaginal haemorrhage, vaginal

tear, along with hormonal changes as well. Conclusion: This study indicated that risk factors such as chronic cough, old age, history of multiple pregnancies, and other comorbidities promote deteriorating as well as poor quality of life health for women who suffer from pelvic organ prolapse.

**Key words:** Pelvic organ prolapse (POP); Causes; Symptoms; Risk factors; and quality of life.

## Introduction

Pelvic organ prolapse (POP) refers to the downward displacement of one or more organs, such as the uterus, vagina, urethra, bladder, rectum, sigmoid colon, and small intestine, from their normal anatomical location [1]. This displacement arises from the structural support's collapse and might vary in severity [2]. Pelvic floor dysfunctions, such as pelvic organ prolapse (POP) and urine incontinence (UI), impose a large burden on public health owing to their widespread occurrence, considerable decline in quality of life, and huge economic impact [3]. Ambulatory major surgery (AMS) can be a viable option to determine as caused a result in a simultaneous reduction in three key factors associated with surgical specialties: the waiting list, the duration of hospitalisation, and the financial expenses [4]. Genital prolapse occurs when the weakening of pelvic support and tearing of the perineum in certain women allow the movement of tissues from the female reproductive system and other anatomically linked organs into the vagina and vulva [5-7]. The prolapse may vary in severity, and the symptoms are directly connected to the level of displacement of the affected organs, including the vagina, urethra, bladder, uterus, intestine, and rectum [8]. The clinical entities colpourethrocele, colpocystocele, hysterocele, enterocele, and colporrectocele are distinct conditions that may occur alone or in combination. [9]

Female pelvic floor dysfunction encompasses a range of clinical disorders, such as urine incontinence, faecal incontinence, and pelvic organ prolapse [10,11]. Similarly, changes in the pelvic floor, the process of emptying the bladder in the lower reproductive system, persistent discomfort in the perineal regions, difficulties with sexual function, and problems with bowel movements are all components of this under-researched medical condition [12,13]. These dysfunctions are a significant public health issue and impact 23.7% of women who experience the specified symptoms at some time in their life [14]. The impact of human evolution towards an upright posture and its effects on the female pelvis have been extensively studied, particularly in relation to women's reproductive health [15]. These studies have considered factors such as the increasing lifespan of women, the preservation of physical well-being, and the implications for healthcare policies. [16]

Approximately 50% of adult women are identified with pelvic floor dysfunction following a gynaecological examination [17]. It is crucial to acknowledge that only a small percentage, namely 10 to 20%, of patients exhibit symptoms, and a limited number seek medical care in a hospital facility [18]. Conversely, many studies have shown that over 33% of women in the perimenopause and post-menopausal stages encounter some kind of disruption in this condition during their lifetime [19]. Approximately 11% of women are projected to require surgical intervention. [20]

## Patients and methods

The current study performed a thorough examination of data pertaining to individuals with pelvic organ prolapse. Data pertaining to the baseline characteristics of individuals with pelvic organ prolapse were gathered. A total of 45 patients, ranging in age from 30 to 60 years, were enrolled. Data was gathered from samples obtained from different hospitals in Iraq, spanning from February 15, 2022, to September 26, 2023. Clinical and

demographic outcomes determined data related to many participants in terms of age, body mass index, delivery type, obstetric history, marital status, education level, employment status, and economic situation.

This study was examined the clinical outcomes of patients with pelvic organ prolapse, which focused on the main symptoms and severity of symptoms experienced before the surgical procedure. These symptoms encompassed the occurrence and extent of various manifestations, that include all common symptoms, which are mass descent through the vagina, vaginal bleeding, acute constipation, sensation of a bulge in the vagina, urinary incontinence, and lower back pain where explored the short-term and long-term effect of these symptoms on the patients. In addition, this study also determined the main factors and causes associated with the development of pelvic organ prolapse (POP) disease in patients where these factors enrolled vaginal delivery, weakening in the pelvic floor muscles as well as tissues, multiple pregnancies, or as giving birth with larger infants, hormonal changes, relatives with a history for POP, and Chronic cough.

Furthermore, this study was identified the output data associated with logistic regression analysis on patient data to define risk variables and their impact on influencing outcomes throughout the two-year study period. The study also evaluated the well-being of patients with pelvic organ prolapse by assessing their overall quality of life, encompassing physical, psychological, emotional, social, and environmental aspects. This assessment was conducted on a scale ranging from 0 to 100, where a score of 0 indicates poor health quality of life and a score of 100 represents the highest level of health quality of life for the patients.

## Results

**Table 1:** Baseline demographic characteristics of patients with POP in this study.

<b>Variables</b>	<b>Number of patients [45]</b>	<b>Percentage [%]</b>
<b>Age (Years)</b>		
30 – 40	9	20.0%
41 – 50	14	31.11%
51 – 60	25	55.56%
<b>BMI [kg/m<sup>2</sup>]</b>		
< 29.5	14	31.11%
> 29.5	31	68.89%
<b>Mode of delivery</b>		
Vaginal delivery	45	100%

<b>Previous history of births</b>		
0	7	15.56%
1	13	28.89%
2	15	33.33%
≥ 3	10	22.22%
<b>Marital status</b>		
Married	31	68.89%
Divorced	8	17.78%
Widow	6	13.33%
<b>Education Status</b>		
Primary school	9	20.0%
Secondary school	10	22.22%
Under graduated	7	15.56%
Post-graduated	19	42.22%
<b>Occupational status</b>		
Employed	26	57.78%
Unemployed	19	42.22%
<b>Economic status, \$</b>		
300 – 500	11	24.44%
501 – 800	26	57.78%
801 – 1000	8	17.78%

**Table 2:** Determine the main symptoms of patients with pelvic organ prolapse.

Symptoms	Number of patients [45]	Percentage [%]
Mass descending per vagina	12	26.67%
Vaginal bleeding	8	17.78%
Acute constipation	4	8.89%
Chronic cough	10	22.22%
Urinary incontinence	8	17.78%
Lower backache	3	6.67%

**Table 3:** Determine the causes associated with patients with pelvic organ prolapse.

Causes	No of patients [45]	P [%]
Vaginal delivery	13	28.89%
Weakening of the pelvic floor muscles and tissues	6	13.33%
Multiple pregnancies or giving birth to larger infants	10	22.22%
Hormonal changes	8	17.78%
A family history of POP	6	13.33%
Collagen irregularities	2	4.44%

**Table 4:** Measuring the severity of patient's symptoms using linear mixed modeling.

Symptoms	Mean ± SD
Mass descending per vagina	7.8 ± 1.2
Vaginal bleeding	6.85 ± 2.31
Acute constipation	5.8 ± 1.02
Chronic cough	8.24 ± 0.63
Urinary incontinence	5.5 ± 2.8
Lower backache	6.61 ± 2.55

**Table 5:** Determine risk factors affected on patients with pelvic organ prolapse.

Variables	Case	Sig.	EXB (B)	95% C.I. for EXP(B)		P – value
				Lower	Upper	
<b>Age</b>				0.260	1.070	0.027
Yes	14	0.074	0.532			
No	31	0.000	2.120			
<b>Chronic cough</b>				0.258	1.013	0.046
Yes	11	0.0283	0.528			
No	34	0.000	2.190			
<b>Operative delivery</b>				0.115	0.640	0.038
Yes	16	0.002	0.271			
No	29	0.000	2.181			
<b>Vaginal tear</b>				0.082	0.331	0.002
Yes	10	0.000	0.171			

No	35	0.000	2.489			
<b>Prolonged labor</b>				0.152	0.415	0.0358
Yes	16	0.000	0.250			
No	29	0.000	2.681			
<b>Macrocosmic baby</b>				0.152	0.060	0.45
Yes	11	0.000	0.320			
No	34	0.000	2.640			
<b>A family history of POP</b>				0.162	0.351	0.030
Yes	8	0.0031	0.403			
No	37	0.000	2.553			
<b>Vaginal bleeding</b>				0.110	0.630	0.0262
Yes	5	0.068	0.239			
No	40	0.000	4.670			

**Table 6:** Assessment of quality of life for patients with pelvic organ prolapse.

<b>Items</b>	<b>Outcomes, mean [SD]</b>
Physical Functioning	50.03 ± 6.48
Psychological Functioning	63.50 ± 11.66
Emotional Functioning	65.77 ± 12.58
Social factor	62.59 ± 8.057

Environmental factor

45.34 ± 15.20

## Discussion

This study identified all outcomes related to pelvic organ prolapse to achieve the main objective of this study. This study showed that older women over the age of 50 were the most affected, which could exceed more than half of the total rate of participating patients at a rate of 55.56%, with a body mass index > 29.5 and 31 patients included, which calls for the elderly to have a serious impact on patients in general. Our results found that all women had undergone vaginal delivery. The demographic data also recorded those 15 women had previously given birth to only two children, followed by one child, which was 13 patients, then followed by more than three, which was ten patients, as the majority of women were married and included 31 women and 8 Divorced women and six women who were widows. The educational level of women in primary school was nine patients; in secondary school, there were ten patients; under graduation, there were seven patients; after graduation, there were 19 patients. Our results were found in terms of professional status, and they were employed with 26 patients and unemployed and it was 19.

This study identified the results related to the common and widespread symptoms in patients, which were the most widespread and most common and affecting women which were Mass descending per vagina, which was 12 patients, chronic cough, which was ten patients, vaginal bleeding, which was eight patients; and urinary incontinence, which was eight patients. Our results recorded the most common causes: vaginal delivery, 13 patients; multiple pregnancies or giving birth to larger, ten patients; and hormonal changes, eight patients. Moreover, this study identified risk factors affecting patients in the long term, as it found operating delivery, a family history of POP, vaginal bleeding, vaginal tear, and hormonal changes as well. The results of patients' quality of life showed that pelvic organ prolapse greatly affects patients and the survival rate, as our results noted a significant decrease in the survival rate. These results showed that the parameters that recorded an increase in patients' quality of life were Emotional Functioning, which was  $65.77 \pm 12.58$ , and Psychological Functioning, which was  $63.50 \pm 11.66$ .

The American study revealed that concurrent illnesses and several variables such as advanced age, mode of delivery, symptoms, as well as chronic stress have a significant role in exacerbating pelvic organ prolapse, leading to the weakening of the muscles and ligaments in the pelvic floor. Moreover, the hormonal fluctuations that occur during menopause significantly contribute to the debilitation and degeneration of the pelvic tissues [21]. A German study revealed that symptoms and duration have a crucial role in deteriorating patients' quality of life, particularly in terms of physical and psychological well-being [22]. This, in turn, has a notable impact on the effectiveness of surgical procedures in patient care, recovery, and therapy [23]. Furthermore, risk factors, which include vaginal infection, chronic cough, a history of numerous pregnancies, and obesity, have a long-lasting impact and increase the likelihood of tissue weakening, leading to infection of persistent organic pollutants and exacerbating their overall health state. [24]

## Conclusion

Our study showed that elderly women over the age of 50 have a higher rate of pelvic organ prolapse. Moreover, the symptoms and their duration significantly and significantly worsen the general health quality of



life for patients, specifically in terms of the psychological and physical aspects. Our results included the most common and influential symptoms, which are mass descending per vagina, chronic cough, and vaginal bleeding. Our results showed that aging, chronic cough, hormonal changes, previous history of multiple pregnancies, and obesity negatively affect patients' quality of life in the long term.

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