

Research Article

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Quality of Life of Women with Pelvic Organ Prolapse and Associated Factors at Public Hospitals of Central Ethiopia, a Multicenter Study

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Abstract

Background: Pelvic Organ Prolapse is a significant public health concern that affects the lifestyles of many women by limiting physical, social, and sexual activities and causing psychological suffering. People frequently mentioned symptoms like pelvic discomfort, urine incontinence, and sexual dysfunction, which negatively affected their overall quality of life. There are few studies on the quality of life of women with pelvic organ prolapse in Ethiopia. This study aimed to find out the quality of life of women with pelvic organ prolapse and its associated factors at public Hospitals, in Central Ethiopia, in 2024.

Methods: Women diagnosed with pelvic organ prolapse at public Hospitals were the subjects of an institutional-based cross-sectional study conducted from January to March 2024. The data was collected using an interviewer-administered questionnaire and a validated Prolapse Quality of Life assessment tool. The data collected was entered into Epi-data version 4.6, and analyzed with the statistical package for social science version 26. Bivariable and multivariable logistic regression were calculated. Statistical significance was determined using a p-value of less than 0.05.

Result: The study included 401 women who had prolapsed pelvic organs, yielding a response rate of 97.1%. The overall poor quality of life was 48.4%. Regarding the quality-of-life domains; General Health Condition 331(82.7%), was highly affected, and role limitation 117 (28.2%) was the least affected domain. Stage III/IV Prolapse (AOR=14.5, 95% CI 8.05, 26.08), women with decubitus ulcer (AOR=4.1 95% CI 1.38, 12.15), and parity >7(AOR=3.1 95% CI 1.59, 6.01), were significantly associated with poor quality of life.

Conclusion: Approximately half of women with pelvic organ Prolapse reported poor quality of life. Women with stage III/IV Prolapse, decubitus ulcers, and parity of more than seven have a statistically significant impact on their quality of life.

Keywords: pelvic organ prolapse; quality of life; Ethiopia

Introduction

Pelvic organ prolapse (POP) is the descent of female pelvic organs into or via the vagina, which includes the bladder, uterus, small intestine, and rectum [1]. This is most usually caused by a pelvic floor support deficit, which can be caused by a variety of risk factors such as vaginal delivery, advancing age, and growing body mass index; atrophic alterations induced by aging or estrogen loss, continuous straining, and connective tissue abnormalities [2, 3]. The affected women may present with the clinical presentation of urinary or fecal loss or retention, vaginal pressure or heaviness, abdominal, low back, vaginal, or perennial pain or discomfort, a mass sensation, difficulty walking, lifting, sitting, and stress or fear related to anxiety about the problem, which leads to hysterectomy and accounts for 15-18% of procedures in all age groups [1-4]. Pelvic organ prolapse affects millions of women, affecting 19.7% of women in developing countries and 23.52% in Ethiopia [5-7].

Common causes include old age, heavy lifting, high parity, home delivery history, chronic constipation, and cough. It limits physical, social, and sexual activities, causes psychological discomfort, and increases healthcare costs [8-10]. Furthermore, access to health treatment to manage these disorders is frequently limited, and women are typically forced to live with the effects for the rest of their lives [11]. The quality of life for women with POP differs by country, according to economic status, lifestyle, education level, and culture [12]. However, a study found that the most common risk factor for decreasing QoL in women with POP is pelvic organ prolapse symptoms [13-14]. Overall, pelvic floor disorders negatively impact women's lives, emotions, and quality of life, and they may be connected with some systemic symptoms such as urine, bowel, and sexual problems, which can considerably impair women's quality of life [15-16]. Pelvic organ prolapse has a significantly higher impact on women's quality of life in

underdeveloped nations than in industrialized countries [17-18]. The burden of pelvic floor dysfunction in developing countries is poorly understood, and its impact on women's health and quality of life is not recognized as a public health problem due to limited studies [19-20].

The P-QoL tool is used in developed nations to assess the quality of life in women with pelvic organ prolapse (POP), but it is ineffective in developing countries, particularly Africa, due to a lack of information. The majority of research focuses on the prevalence, diagnosis, and management of chronic illnesses, with little attention paid to their effects on quality of life [21, 22]. Pelvic organ prolapse is a severe health issue that leads to social withdrawal, stigma, and negative impacts on women's socioeconomic and reproductive activities [23, 24]. It can cause embarrassment, social isolation, and diminished self-esteem, affecting their overall well-being and quality of life [25, 26]. Women with POP may have limitations in physical activities, discomfort during ordinary tasks, and disruptions in employment duties, resulting in a lower quality of life and an increased economic burden [27]. To summarize, understanding the complex effects of pelvic organ prolapse on women's quality of life requires a multifaceted approach that takes into account physical, emotional, social, and functional factors [27, 28]. However, in Ethiopia, the quality of life study of people who have had POP is not well understood and no research has been conducted in the study area particularly [28]. As a result, assessing the quality of life and associated factors among those who had POP has practical implications for healthcare providers, program planners, and policymakers to use as baseline data to focus on the basic factors and develop a feasible intervention plan to improve women's quality of life.

Materials and Methods

Study area and Study period

A facility-based cross-sectional study design was conducted at public hospitals in Central Ethiopia. There are seven public hospitals in central Ethiopia and they provide services for populations of Gurage, Hadiya, Silte, Halaba, Yem, and other neighboring zones. The study was conducted from January to March 2024.

Study design and population

All women who have been visiting public hospitals in Central Ethiopia during the study period and

diagnosed with POP were the source population. All women with pelvic organ prolapse who were visiting selected public hospitals of Central Ethiopia during the study period were the study population. All women diagnosed solely with pelvic organ prolapse at selected hospitals in Central Ethiopia during the study period were included in the study.

Sample size and Sampling procedure

A single population proportion formula, using the assumptions of 95% confidence level and 5% margin of error, was used to estimate the sample size. The proportion of poor quality of life women with POP of 57.5% was used to calculate the sample size [25]. With a 10% contingency for a non-response rate, the final sample size was 413. Then, the sample was proportionally allocated for the seven selected hospitals based on their monthly patient flow, and study participants were selected using a systematic sampling technique.

Study variables

Dependent variables

Quality of life women with POP

Independent Variables

Socio-economic and demographic characteristics: age, religion, residency, marital status, educational level, occupation, monthly income, transportation,

Quality of life with POP-related factors: Duration of Prolapse, Parity, Stage of Prolapse, Decubitus ulcer, menstrual status.

Quality of life of POP: General health condition, POP on the overall of life, role limitation physical limitation, social limitation, personal relationship, emotion, sleep/energy, intensity or severity of pain.

Data collection method and measurement

An interviewer-administered questionnaire was used to collect the data. It includes socio-demography, and Prolapse quality of life questions with different domains (P-QoL) [25]. Poor quality of life was declared when women scored greater or equal to the median score of the overall QoL domains [29, 30].

Operational definition

Quality of Life (QoL)

The World Health Organization defines quality of life as an individual's perception of their overall well-being concerning their culture, values, goals, and concerns. It encompasses physical, mental, emotional, social, and functional aspects of life [31].

Poor quality of life

Greater or equal to the median score of the overall (nine) QoL domains or among women who had POP [29, 30].

Good quality of life

Less than the median score of the overall (nine) QoL domains or among women who had POP. [25].

Stages of prolapse

Based on the Baden-Walker Halfway Scoring System:
Stage 0: is no prolapse.

Stage I: is leading part of the prolapse is more than 1 cm above the hymen.

Stage II: is the leading edge less than or equal to 1 cm above or below the hymen;

Stage III: is leading edge is more than 1 cm beyond the hymen, but less than or equal to the total vaginal length;

Stage IV: is complete version [13].

Premenopausal: is the time between your first period and the onset of menopause [32]

Menopause: is the time that marks the end of your menstrual cycle [32]

Menopause can happen in your 40s or 50s, but the average age is 51 in the United States [32].

Decubitus ulcer: Damage to an area of the skin caused by constant pressure on the area for a long time [33].

Data quality control

Training was given to data collectors and supervisors. Data collectors were supervised throughout the data collection period. Pretesting of the questionnaire was carried out on the 5% sample size at Wolkite Health Center before the actual data collection period to assess the clarity, sequence, consistency, understandability, and time taken to complete the questionnaire. Then, the overall process was coordinated, and controlled by the investigators. Investigators, supervisors, and data collectors had a discussion meeting throughout data collection to ensure completeness. Furthermore, the collected data

was Checked coded, and entered into Epi-Data version 4.6.

Data processing & analysis

The collected data was entered into the Epi data version 4.6 computer program. Then it was exported to Statistical Package for Social Sciences (SPSS), version 26. Descriptive statistics like frequency and summary statistics were employed to describe the characteristics of the study participants. The multicollinearity of the predictor variable was checked by using the variance inflation factor before binary logistic regression was done, and it will be < 10 VIF for all independent variables. All explanatory variables in bi-variable logistic regression that fulfill the chi-square static assumption were considered for multivariable logistic regression analysis to control for confounding factors. Adjusted Odds Ratio (AOR) with their corresponding 95% Confidence Intervals (CI) and p-value less than 0.05 was used to declare the association between dependent Page 7/18 and independent variables. Model fitness was checked by the Hosmer-Lemeshow test, it was fitted with a p-value of 0.201; finally presented by figure, table, and graph.

Result

Among a total sample of study participants, 401 women were interviewed in the study, and gave a response rate of 97.1% response rate and the results were presented as follows under subheadings.

Socio-demographic characteristics

Half of the participants were 29 to 72 years with a mean and SD of 50.7 ± 9.05 years. Most of the respondents 352(87.8%) were married. Regarding educational status, 204(49.87%) were non-educated and the majority of respondents were rural residents (77.8%) and (59.6%) were farmers. According to income level, most respondents were 3000-10,000 their income and access to transport for most respondents was rare (61.8%) (Table 1).

Table 1: Socio-demographic characteristics among women diagnosed with POP public hospitals of central Ethiopia 2024 (n=401).

Variables	Categories	Frequency(n=401)	Percentage (%)
Age in years	29-49	205	51.1
	50-59	116	28.9
	>60	80	20
The mean \pm SD age of the respondents was 50.7 ± 9.05			
Religion	Orthodox	212	52.9
	Muslim	148	36.9
	Protestant	41	10.2

Residency	Urban	89	22.2
	Rural	312	77.8
Marital status	Married	352	87.8
	Divorced	25	6.2
	Widowed	24	6.0
Educational level	No formal education	250	62.4
	Primary school	120	29.9
	Secondary school	28	7
	Diploma and above	3	0.7
Occupational status	Farmer	228	56.9
	Housewife	119	29.7
	Merchant	24	6.0
	Government employee	23	5.7
	Private employee	7	1.7
Income level	3000-10000	372	92.8
	10001-15000	18	4.5
	>15000	11	2.7
Transport Access	Not at all	5	1.2
	Rarely	248	61.8
	Constantly	148	36.9

Gynecologic and obstetrics characteristics

Of the total study participants, 296(73.8%) prolapses were 1 and two-year durations and the rest 105(26.2%) were greater than two-year durations with a mean±SDscore of 2.08±1.14. Regarding stages of prolapse, 163(40.6%) of women had stage III

prolapse, and 151(37.7%) were stage II respectively. Among the study subjects, 98(24.5%) of women had >seven number of childbirths with a mean±SDcore of 6.45 ± 1.54. In addition, most of the respondents 351(87.5%) had decubitus ulcer (Table 2).

Table 2: Gynecologic & obstetrics characteristics among women diagnosed with public hospitals of central Ethiopia 2024 (n=401).

Variables	Categories	Frequency(n=401)	Percentage (%)
Parity	3-7	302	75.5
	>7	99	24.5
Duration of prolapse	1-2 years	296	73.8
	>2years	105	26.2
Menopausal status	Menopausal	188	29.7
	Premenopausal	213	70.3
Stages of prolapse	Stage I	21	5.2
	Stage II	151	37.7
	Stage III	163	40.6
	Stage IV	66	16.5
Decubitus ulcer	Yes	351	87.5
	No	50	12.5

The magnitude of quality of life of women with pelvic organ prolapse

In this study, the magnitude of poor quality of life among women with pelvic organ prolapse was 194(48.4%) (95% CI 43, 53). (Figure 1). General Health Condition 331(82.7%), the impact of POP

295(73.6%), Emotion 219(54.6%) and personal relationship 215(53.6%) were domains of quality of life that had the highest score, whereas physical limitation127 (31.7%), Intensity or Severity of Pain 117(29.2%) and rolelimitation117 (28.2%) had the lowest score (Table 3).

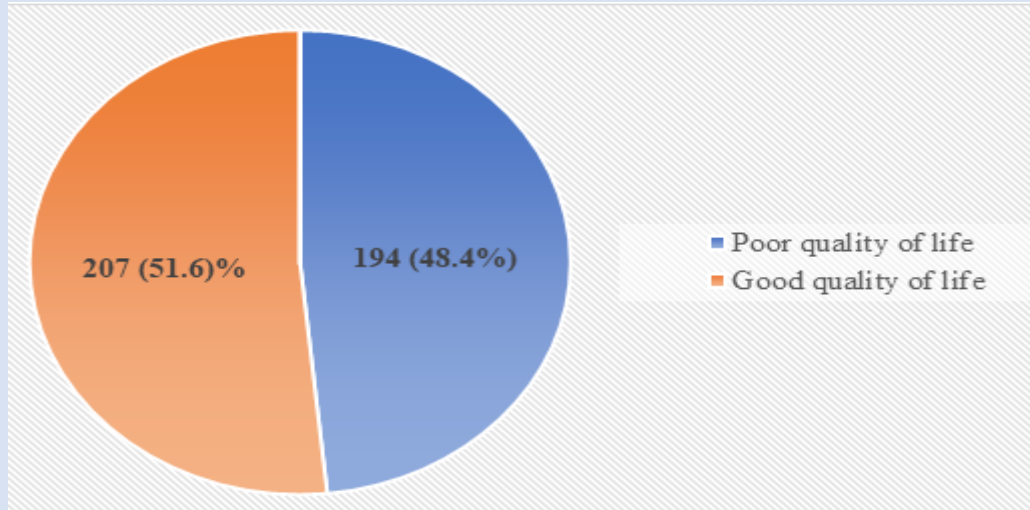


Figure 1: Magnitude of quality of life among women diagnosed with pelvic organ prolapse at public hospitals of central Ethiopia 2024 (n=401).

Table 3: Quality of life domain score among women diagnosed with pelvic organ prolapse at public hospitals of central Ethiopia 2024 (n=401).

Domains	Quality of life domain score	Percentage (%)
	The magnitude of quality-of-life domain score above the median score	
The overall quality of life	194	48.4
General Health Condition	331	82.5
POP on the overall life	295	73.6
Role limitation	113	28.2
Physical Limitation	127	31.7
Social Limitation	162	40.4
Personal Relationship	215	53.6
Emotion	219	54.6
Sleep/ Energy	143	35.7
Intensity or Severity of Pain	117	29.2

Factor associated with quality of life of women with pelvic organ prolapse

Binary logistic regression analysis was done to identify candidate variables for multivariable logistic regression at a p-value of less than 0.25. The variables from socio-demographics (age of mothers with POP, Marital status, Menopausal status), from quality-of-life POP-related factors (duration of prolapse, parity, menstrual status, stages of prolapse, presence of decubitus ulcer) were taken to multivariable logistic regression. In multivariable logistic regression, the presence of a decubitus ulcer, parity, and stages of prolapse were revealed statistically significantly associated with the quality of life of women with POP when adjusted in the final model. Then the variables were subjected to multivariable logistic regression

analysis. The final model included only three variables. Model fitness was assessed using the Hosmer and Lemeshow Goodness of Fit test, which yielded a p-value of 0.201. Furthermore, all independent variables had no Multicollinearity, with a variance inflation factor (VIF) < 10. The findings showed that women with stage III/IV prolapse were 14.5 times more likely to have a poor quality of life than those with stage I or II prolapse (AOR=14.5, 95% CI 8.05, 26.08). In addition, women who had parity greater than seven were 3.1 more likely to have a poor quality of life than women who had parity 3-7 (AOR = 3.1 95% CI 1.59, 6.01). Furthermore, women who had a decubitus ulcer were 4.1 times more likely to have a poor quality of life than their counterparts (AOR = 4.1 95% CI 1.38, 12.15) (Table 4).

Table 4: Factor associated with Quality of life among women diagnosed with POP at public hospitals of central Ethiopia 2024 (n=401).

Variables	Categories	Level of Quality of life (%)				
		Poor	Good	COR (95%CI)	AOR (95%CI)	P-value
Menopausal status	Premenopause	87(40.8)	126(59.2)	1	1	
	Menopause	107(56.9)	81(43.1)	1.9(1.286,2.847)	0.585(0.098,3.491)	0.556
Stages of prolapse	Stage I/II	23(13.4)	149(77)	1	1	1
	Stage III/IV	171(74.7)	58(25.3)	19.1(11.236,32.467)	14.5(8.058,26.084) *	0.0001
Menstrual status	Yes	37(31.5)	82(68.9)	1	1	
	No	157(55.7)	125(44.3)	2.78(1.768,4.382)	1.45(0.702,2.995)	0.316
Parity	3-7	117(38.7)	185(61.3)	1	1	
	>7	77(87.9)	22(22.2)	5.534(3.266,9.377)	3.1(1.596,6.012) *	0.001
Duration of prolapse	1-2 years	123(41.6)	173(58.4)	1	1	
	>2 years	71(67.6)	34(32.4)	2.937(1.836,4.697)	0.932(0.495,1.753)	0.827
Age	24-49 years	84(41)	121(49)	1	1	
	50-59 years	54(46.6)	62(53.4)	1.25(0.793,1.987)	0.87(0.145,5.179)	0.875
	>60 years	56(70)	24(30)	3.36(1.933,5.845)	0.9(0.125,6.239)	0.901
Decubitus ulcer	Yes	45(90)	5(10)	12.2(4.729,31.482)	4.1(1.383,12.157) *	0.01
	No	149(42.5)	202(57.5)	1	1	
Marital status	Married	166(47.1)	186(52.9)	1	1	
	Divorced	12(48)	13(52)	1.03(0.459,2.330)	1.1(0.358,3.227)	0.898
	Widowed	16(66.6)	8(33.3)	2.24(0.935,5.371)	1.28(0.421,3.891)	0.663

COR=Crude odds ratio, AOR=Adjusted odds ratio, * = statistically significant at p -value <0.05

Discussion

According to this study, the overall poor quality of life among women with pelvic organ prolapse was 48.4% (95% CI 43, 53). This revealed that, while pelvic organ prolapse is a benign condition, it has a significant impact on women's quality of life. This finding is in line with a study conducted in, Uganda 45.5% [34], and Slovakia 52.8% [12]. This is because, while the quality of life of women with POP differs by nation based on economic level, lifestyle, educational level, and culture, prolapsed pelvic organ symptoms are the most common risk factors for poor Quality of life [13, 49]. On the other hand, it is higher than research conducted in Ghana, which found 39.4% [36]. This discrepancy is caused by differences in the Quality-of-life domain or item scores, as well as sample size. It is also lower than a study conducted in France (54.5%) [37] and Ethiopia's SNNPR region (57.5%) [25]. Furthermore, this study found that women with POP had a poor quality of life when they were in the stage of prolapse, parity, and the presence of a decubitus ulcer. This conclusion is supported by research conducted in South Africa [29], Taiwan [36], Thailand [33], Nepal [38], the USA [39], Italy [40], and London [30]. This is because as the stages of the prolapse advanced, secondary effects such as decubitus ulcers, bowel symptoms, urinary symptoms, abdominal symptoms, and sensations in the vagina

increased which worsened the quality of life [30, 41,38].

Women who had a decubitus ulcer are 4.1 times more likely associated with poor quality of life of women with POP, but it has not been studied as extensively in previous literature. The evidence showed that decubitus ulcers become increasingly prevalent as the POP-Q stage progresses. As POP-Q progresses, the ulcer grows in size. Therefore, if we discover a decubitus ulcer when examining a prolapsed patient, we must first treat it. It should be addressed effectively before surgical treatment is done for better postoperative outcomes and fewer issues during the operative correction of pelvic organ prolapse [33]. Moreover, this study showed that women's being parous greater than seven were 3.1 times more likely associated with poor quality of life. This finding is supported by studies conducted in Pakistan [42], France [13], and Bangladesh [43]. This is because, as the parity of women increased, there was the presence of prolapse and progressive disability. Being in a high parity could be considered a risk factor for POP and increase the burden and responsibilities for women's lives. In addition, as the parity of women increased, there was an increased risk of prolapse that caused advanced stages of prolapse, and then that caused a symptomatic prolapse that worsened women's health conditions [44]. Women having advanced stage III/IV POP were 14.5 times more likely associated with poor quality of life. This finding is supported by studies

done in Thailand [33], Nepal [38], and Ghana [36]. POP symptoms increase with the advanced stage and reduce the quality of life [44].

Limitations of the study

This research topic was sensitive and it is affected by social desirability bias so it might affect the results. Moreover, since the study design is a cross-section, it does not show cause and effect.

Conclusion

According to this study, around half of women with pelvic organ prolapse had a poor quality of life. Stage III/IV prolapse, presence of decubitus ulcer, and high parity, were significantly associated with poor quality of life. To effectively manage pelvic organ prolapse and improve quality of life, a holistic, patient-centered approach tailored to individual needs can lead to better outcomes and overall well-being for women with pelvic organ prolapse. Assessing the quality of life in women with pelvic organ prolapse is critical for understanding its impact on physical, emotional, and social well-being.

Recommendation

To the Central Ethiopia region health bureau

- Providing early detection and treatment for women with POP, which has previously been overlooked in the community.
- Take a holistic approach to comprehensive assessment, functional impact, psychological well-being, social support, symptom management, and a multidisciplinary approach.

To healthcare facility

- Take a holistic approach to care by considering the impact of POP on various aspects of a woman's life and informing the development of targeted interventions, treatments, and support services that address the unique needs and challenges.
- Ensure the women with POP receive comprehensive assessment and support that addresses their unique needs and enhances their quality of life.

To researcher

- Researchers need on why women with pelvic organ prolapse are not early attending healthcare facilities.
- Further community and longitudinal interventional studies are needed.

Abbreviations

AOR-Adjusted Odds Ratio, COR-Crude Odds Ratio, GYN/OBS-gynecology & obstetrics, OPD-Outpatient Department, POP-Pelvic Organ Prolapse, QoL- Quality of Life, CE-Central Ethiopia, UVP-Utero Vaginal Prolapse, WUSTH- Wolkite University Specialized Teaching Hospital

Declarations

Supplementary Information

The information will be accessed by official connection with the Correspondence author.

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Authors' contributions

MAM, MDT, MT, and ASA wrote the proposal, participated in data collection, analyzed the data, and drafted the paper. ABD, MT, and MAM approved the proposal with some revisions, participated in data analysis, and revised subsequent drafts of the paper. MDT and ASA commented on the final paper and manuscript. All authors read and approved the manuscript.

Conflict of interest

There is no potential conflict of interest concerning the research, authorship, and/or publication of this article.

Patient consent for Publication

Not applicable

Ethics approval and consent to participate

Ethical clearance was obtained from Wolkite University College of Medicine and Health Science. A formal letter was written from the university to the central Ethiopian health office. An official letter of permission was obtained from the Central Ethiopian Health Office. Participants of the study were briefed about the objectives and aims of the study in detail. Participants were informed that their participation was purely voluntary and assured of the confidentiality of all information. After all, informed,

voluntary, written, and signed consent was obtained from study participants. Confidentiality of the data was assured throughout the study.

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