Prevalence and Factors Associated with Uterine Prolapse among Gynecologic Patients at University of Gondar Comprehensive Specialized Hospital, Northwest Ethiopia

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ABSTRACT

Introduction: Uterine prolapse is one of the most common cause of reproductive health morbidity, particularly among adults and old women in developing countries. There is limited information on the magnitude and associated risk factors of uterine prolapse in Ethiopia. Therefore, the aim of this study was to identify the factors of uterine prolapse.

Materials and methods: Hospital based retrospective study was conducted at University of Gondar comprehensive specialized hospital, Northwest, Ethiopia from July 1, 2014, to June 30, 2019. Computer based simple random sampling technique was used to select patient's cards. Bivariable and multivariable logistic regression analyses were performed. Statistical differences were considered at P<0.05.

Results: The overall prevalence of uterine prolapse during the study period was 91(22.3%). Age (COR=5.12; 95% CI: 2.05, 12.78), residence (COR=5.83; 95% CI:2.66, 12.78), abortion history (COR=4.77; 95% CI:1.72, 13.23) and place of delivery (COR=2.76; 95% CI:1.14 6.69, 13.23) were factors significantly associated with uterine prolapse.

Conclusions: This study reveals that nearly one fourth of women suffer with uterine prolapse. This finding indicated that uterine prolapse is a major public health issue in Ethiopia. Therefore, the local government should give emphasis for older and rural women. Health institution delivery should also be advocated to minimize the proportion of home deliveries.

Keywords: Uterine prolapse; Prevalence; Factors; Women; Ethiopia

INTRODUCTION

Uterine prolapse (UP) happens when the uterus hangs down into the vagina if the support structures are weakened by overstretching which is commonly caused during pregnancy, labour and childbirth [1,2]. Uterine prolapse is consider as one of the most common cause of reproductive health morbidity, particularly among adults and old women in developing countries which influence the women quality of life [3].

Uterine prolapse is consider the most common cause of poor women health during reproductive and menopausal period [4,5]. It is a condition from which many women have suffered and that many physicians have attempted to treat [6]. Women who suffer from uterine prolapse endure symptoms that decrease their quality of life, but rarely result in severe morbidity or mortality. It is not only socially embarrassing and disabling, but the surgical treatments are costly and complex [7].

According to World Health Organization (WHO) estimation, the reproductive ill health accounts for 33% of the total disease burden among the women globally. The global prevalence of uterine prolapse is 2-20%; the hospital admission for uterine prolapse is 20.4%, surgery for prolapse is 16.2% [8]. With wide variations among different populations, in lower income countries, prevalence of uterine prolapse was estimated to greater than 20% [9]. Very high prevalence of genital and uterine prolapse has been reported among women of reproductive age throughout Sub-Saharan Africa which can be problematic,

particularly for populations that are already nutritionally vulnerable [10].

Even though prolapse is not considered a life threatening condition, but it affect the women physically, psychologically, sexually and lead to occupational and social limitations, it also increase the risk of reproductive and urinary tract infection [11,12]. Shy and afraid of the consequences, many women who suffer from this disease hide their problem from others for decades [13]. Women suffering from uterine prolapse often receive physical and verbal abuse from their husbands and mothers-in-law because of the condition, with some husbands leaving or threatening to leave their wives; others incorrectly consider it indicative of venereal disease [14].

The severity of uterine prolapse is determined according its degree, first degree (mild) when the uterine cervix protrudes into the lower third of the vagina, second degree (moderate) when the cervix protrudes past the vaginal opening and the third degree (severe) when the entire uterus protrudes past the vaginal opening [15]. Most patients with uterine prolapsed seek treatment for sustained from the disease. Nearly 30% of women undergoing are POP procedure have a recurrence. There is no evidence that any specific postsurgical activity restrictions reduce the risk of recurrence. So, comprehensive nursing care based on the condition of disease is crucial [16,17]. Prolapse can be reduced with various lifestyle interventions including stopping smoking, weight loss, exercise and avoiding constipation, as well as avoidance of activities that may make your prolapse worse such as heavy lifting [1,18].

Several factors that may contribute to the weakening of the pelvic muscles and lead to uterine prolapse such as, mismanagement or improper care during delivery, loss of muscle tone as the result of aging, injury during childbirth, especially among multipara women more than three times, delivery of macrosomic fetus, obesity, chronic coughing and chronic constipation were identified [19]. Despite the impact of heavy loading on uterine prolapse, there is limited information on the magnitude and associated risk factors of uterine prolapse in Ethiopia. Therefore, the main aim of this study was to assess the prevalence of uterine prolapse and its associated factor among women in Gondar University Referral Hospital.

MATERIALS AND METHODS

Study design, area and study participants

Hospital based retrospective study was conducted at University of Gondar comprehensive specialized hospital, Northwest, Ethiopia from July 1, 2014, to June 30, 2019. The hospital serves as a referral hospital for the south-western sub-region of the country and is a training center for different cadres of health professionals and it has different departments and follow-up clinics for chronic illnesses. The department of obstetrics and gynecology is one of the departments in the hospital giving services at different areas. All the patients who were admitted in gynecology ward during the study period were used as the source population.

Sample size determination and sampling technique

The sample size was determined by using the single population proportion formula with the following assumptions: 5% margin of error, 95% confidence level and 50% proportion. By considering a 10% incomplete card/registration rate, the final sample size was 422. Computer based simple random sampling technique was used to select patient's cards.

Data collection tools and procedures

Data was extracted using a data extraction tool prepared in the English language after checking of all available data on registration book. Data was collected by reviewing document of the patient. Card numbers of patients admitted to gynecology ward were retrieved from log books at gynecology outpatient department, admission office, discharge book and operation room book. The card numbers were given to record officers and the charts were retrieved and data were collected. Data collectors were trained on each item included in the questionnaire, its meaning and how to retrieve data from records. Charts with incomplete data excluded.

Study variables

The study was assessed the prevalence of uterine prolapse based on the diagnosis that was found on the patient card. The independent variables of this study were: Socio-demographic factors (age, religion, marital status, occupation, ethnicity and residence) and Obstetrics and reproductive health factor (age at marriage, age at first birth, number of pregnancy, number of delivery, number of live children, type of delivery, birth interval, history of abortion, sexual resumption, physical work during pregnancy and place of delivery).

Data quality assurance

Training was given for data collectors. During data collection the completeness was checked on the spot and corrected by cross checking the card. Data was kept in the form of file in a private secured place and confidentiality was insured by not recording names or any personal identity.

Data processing and analysis

Data was coded, entered and cleaned using EPI-INFO version 7.2.2.2 and further cleaned and analyzed using SPSS version 20. Frequencies, percentages and means was computed to describe the variables of the study. Bivariable and multivariable logistic regression analyses were performed. The strength of association between outcome variable and determinants was assessed by odds ratio and respective 95% confidence intervals. Finally, statistical significances were considered at P<0.05.

RESULTS

Socio-demographic characteristics of study participants

From the total of 422 patient cards, complete data were retrieved from 408 cards which was 96.7% retrieval rate. The mean age of respondents was 28.7 with (SD+4.41) years. Majority, 322(78.9%) of the women were from rural residents.

Regarding their ethnicity, 368(90.2%) of the respondents were Amhara. From all study participants, 373(91.4%) were currently married, and 273(67.9%) were Orthodox religion followers. Out of the total participants, 179(43.9%) were housewife (Table 1).

Obstetric and reproductive health information

The overall prevalence of uterine prolapse during the study period was 91(22.3%). Among the study population, 189(46.3%) of mothers got married in the age range of 19-24 years, and 219(53.7%) who get their first pregnancy were in age range of 20-24 years. From all study population, 281(68.9%) of women had physical work during the last pregnancy. Majority, 390(95.6%) of participants had delivered their last baby in health facilities. More than half, 240(58.8%) patients were between para two and three while 109(26.7%) were para one. In this study, 60(14.7%) of the patients had history of abortion. Regarding their sexual resumption after childbirth, 52(12.7%) of them were started <42 days following child birth (Table 2).

Factors associated with uterine prolapse

On multivariable analysis, factors that were found to be significantly associated with prevalence of uterine prolapse were age, place of residence, history of abortion and place of delivery of the last child. The odds of experiencing uterine prolapse was higher among women whose age were >45 years (COR=5.12; 95% CI:2.05, 12.78) as compared with those who were in the age group of 17-24 years. The likelihood of uterine prolapse was higher among women in rural dwellers (COR=5.83; 95% CI: 2.66, 12.78) as compared with urban residents. Those women who had history of abortion were 4.77 times more likely to experience uterine prolapse than their counterparts (COR=4.77; 95% CI:1.72, 13.23). The odds of uterine prolapse was also higher among women who gave birth at home as compared to those women gave child birth at health institutions (COR=2.76; 95% CI:1.14 6.69, 13.23) (Table 3).

Table 1: Socio-demographic characteristics of patients at University of Gondar comprehensive specialized hospital, Northwest, Ethiopia, 2019 (n=408).

Variables	Number	Percent
Age		
17-24	49	12
25-34	75	18.4
35-44	222	54.4
>45	62	15.2
Religion		
Orthodox	273	67.9
Muslim	91	22.3
Protestant	28	6.9
Other	12	2.9
Marital status		
Married	373	91.4
Divorced	26	6.4
Widowed	9	2.2
Residence		
Rural	322	78.9
Urban	86	21.1
Ethnicity		

Amhara	368	90.2
Tigrie	32	7.8
Other	8	2
Occupation		
House wife	179	43.9
Employed (gov't/private)	87	21.3
Merchant	91	22.3
Daily Laborer	31	7.6
Other	20	4.9

Table 2: Obstetric a reproductive characteristics of patients at University of Gondar comprehensive specialized hospital, Northwest, Ethiopia, 2019 (n=408).

Variables	Number	Percent
Age at 1st marriage		
<15	21	5.2
15-18	111	27.2
19-24	189	46.3
>25	87	21.3
Age at 1st delivery/childbirth		
15-19	71	17.4
20-24	219	53.7
>25	118	28.9
Parity		
1	109	26.7
02-Mar	240	58.8
>4	59	14.5
History of abortion		
Yes	60	14.7
No	348	85.3
Physical work during last pregnancy?		
Yes	281	68.9
No	127	31.1

Place of delivery		
Health facility	390	95.6
Home	18	4.4
Type of delivery		
Normal	352	86.3
CS	37	9.1
Instrumental	19	4.7
Sexual resumption after delivery		
< 42 days	52	12.7
>42 days	356	87.3
Get rest after delivery		
Yes	364	89.2
No	44	10.8
Uterine prolapse		
Yes	91	22.3
No	317	77.3

Table 3: Factors associated with Uterine prolapse at University of Gondar comprehensive specialized hospital, Northwest, Ethiopia, 2019 (n=408).

Variables	Uterine prolapse		COR (95%CI)	AOR (95%CI)
	Yes	**No**		
Age				
17-24	15	34	1	1
25-34	34	41	0.53(0.25, 1.14)	0.77(0.25, 2.41)
35-44	25	197	3.48(1.67, 7.26)	1.83(0.62, 4.45)
>45	17	45	1.19(0.52, 2.66)	**5.12(2.05, 12.78)***
Residence				
Rural	65	257	1.71(1.04, 2.92)	**5.83(2.66, 12.78)***
Urban	26	60	1	1
Parity				
1	44	65	1	1
02-Mar	33	207	4.25(2.45, 7.21)	2.68(0.89, 6.11)

>4	14	45	2.18(1.07, 4.43)	3.09(0.86, 11.09)
Physical work during last pregnancy?				
Yes	83	198	6.24(2.92, 13.33)	3.21(0.81, 5.44)
No	8	119	1	1
History of abortion				
Yes	7	53	2.41(1.06, 5.50)	**4.77(1.72, 13.23)***
No	84	264	1	1
Sexual resumption after delivery				
<42 days	13	39	0.84(0.43, 1.66)	0.63(0.26, 1.57)
>42 days	78	278	1	1
Type of delivery				
Normal	78	274	1	1
CS	6	31	1.47(0.59, 3.65)	1.08(0.37, 3.16)
Instrumental	7	12	0.49(0.19, 1.28)	0.43(0.27, 1.07)
Get rest after delivery				
Yes	75	289	2.20(1.13, 4.28)	1.23(0.34, 4.53)
No	16	28	1	1
Place of delivery				
Health facility	84	306	1	1
Home	7	11	0.43(0.16, 1.15)	**2.76(1.14, 6.69)***

Note: *Statistically significant at P<0.05.
Abbreviations: AOR: Adjusted odds ratio; COR: Crude odds ratio; CS: Caesarean section

DISCUSSION

Uterine prolapse is one of the common causes of gynecological morbidity and is a significant public health problem in Ethiopia. This study aimed to assess the magnitude and factors associated with uterine prolapse. The finding of the present study revealed that the prevalence of uterine prolapse was 22.3% (95% CI: 18.1-26.5). This result in line with a cross sectional study conducted in Kalikot district, Nepal which reported that the prevalence of uterine prolapse was 22.6% [20]. This finding implies that substantial number of women are suffering with uterine prolapse that need due attention by policy makers, programmers and health care workers. This magnitude is higher than the study conducted in in Bench Maji, Ethiopia and Lekhnath, Kaski, Nepal which indicated that 13.3% and 13% of women had uterine prolapse respectively [21-22]. This finding is also much higher than another study done in South Indian which indicated that 1.6% of total gynecological admissions had

uterine prolapse [23]. The possible reason for this variation might be the difference in maternal health service utilization. However, this magnitude is lower than a study conducted in in Jimma University specialized hospital, Southwest Ethiopia which indicated that Pelvic organ prolapse accounted for 40.7% of major gynecologic operations [24].

This study identified different risk factor for uterine prolapse. The factors that were found to be significantly associated with prevalence of uterine prolapse were age, place of residence, history of abortion and place of delivery of the last child. The odds of experiencing uterine prolapse among old aged women (>45 years.) was 5.12 times higher as compared to younger women. This finding is consistent with the study finding which conducted in Bahir Dar, North West Ethiopia and Nepal [20,25]. The explanation for this might be due the fact that advancement in age is associated with a higher rate of pelvic dysfunction which can weaken pelvic muscles and ligaments and

the risk of uterine prolapse increases [26]. Moreover, this could be due to secondary to different factors including normal physiologic advancement of the pelvic floor components and the fall in estrogen during the postmenopausal period [27].

The likelihood of uterine prolapse among women in rural area was 5.83 times higher than their counterpart. This finding is supported by other studies conducted in in Jimma University specialized hospital, Southwest Ethiopia and Dabat district, northwest Ethiopia [24,28]. The reason for this could be rural women have more duties to perform have low work load activities such as, assisting their husbands in farm land, marketing and water fetching which are assigned to rural women. Furthermore, most of time the educated women live in urban area and they can easily get health service as compared to women from rural area.

This study revealed that women who had history of abortion were 4.77 times more likely to experience uterine prolapse than their counterparts. This finding is comparable with other study conducted in Lekhnath, Kaski, Nepal [22]. This might be as the result of more pelvic ligaments lose and can cause uterine prolapse.

This study also revealed that uterine prolapse was higher among women who gave birth at home as compared to those women gave child birth at health institutions. This finding is similar with others studies done in Bahir Dar, North West Ethiopia, Wolaita Sodo University Referral Teaching Hospital, Southern Ethiopia and Gorkha District, Nepal [25,29,30]. The possible explanation may be because of most women don't know when to start pushing and they push with each contraction, and that make the supportive ligaments weak and the labor would be obstruct. Moreover, most women have no idea about prolonged labor. The limitation of this study was use of secondary data with incompleteness in the recording of the information in the registry/card, which made it difficult to obtain the full range of socio-demographic and clinical variables in the medical records during the review process.

CONCLUSION

This study reveals that nearly one fourth of women suffer with uterine prolapse. The finding implies that substantial number of women are suffering with uterine prolapse that need due attention by policy makers, programmers and health care workers. The factors that significantly associated with magnitude of uterine prolapse were older age, place of residence, and history of abortion and place of delivery of the last child. Therefore, the local government should give emphasis for older and rural women. Health institution delivery should also be advocated to minimize the proportion of home deliveries.

ETHICAL CONSIDERATION

Ethical clearance was obtained from research review committee College of Medicine and Health sciences, University of Gondar. Official letter of cooperation was written to department of obstetrics and gynecology. To maintain confidentiality of the study participant information, identifiers like name and medical record number was removed from data extraction tool. Safety

and confidentiality of the information was maintained throughout the research project in soft and hard copy.

AVAILABILITY OF DATA AND MATERIAL

The datasets used and analyzed during the current study are available from the author.

ACKNOWLEDGMENTS

REFERENCES

1. Brubaker L, Bump R, Jacquetin B, Schuessler B, Weidner A, Zimmern P, et al. Pelvic organ prolapse. Incontinence 2nd International Consultation on Incontinence 2nd ed Plymouth (UK): Plymouth Distributors. 2013;2:243-265.

2. Chhetry D, Upreti S, Dangal G, Subedi P, Khanal M. Impact evaluation of uterine prolapse surgery in Nepalese women. Women. 2012;497:60-65.

3. Aki OIH, Mamdouh H. Perceived Reproductive Morbidity and Treatment Seeking Behavior among ever Married Women in Siwa Oasis, Egypt. Journal of American Science. 2011;7(6):749.

4. Elsayed FM, Ahmed MH, Ahmed MAS. Knowledge and Practices of women regarding Risk Factors of Uterine Prolapse. IOSR-JNHS. 2016;5:60-67.

5. Thapa BRG, Gurung S. Contributing factors of utero-vaginal prolapse among women attended in Bharatpur hospital. Journal of Chitwan Medical College. 2014;4(9):38-42.

6. Downing KT. Uterine prolapse: from antiquity to today. Obstetrics and Gynecology International. 2012;20:12.

7. LM. Uterine Prolapse in Nepal: The Rural Health Development Project's Response. Journal of Nepal Public Health. 2010;10:15.

8. Doshani A. Uterine prolapse Clinical review. BMJ. 2010;335:819-823.

9. Walker GJA, Gunasekera P. Pelvic organ prolapse and incontinence in developing countries: review of prevalence and risk factors. Int Urogynecol J. 2011;22:127-135.

10. Porter GHK, Dunn C. Health impacts of pedestrian headloading: a review of the evidence with particular reference to women and children in sub- Saharan Africa. Social science medicine. 2013;88:90-97.

11. Thapa BRG, Gurung S. Contributing factors of utero-vaginal prolapse among women attended in Bharatpur hospital. Journal of Chitwan Medical College. 2014;4(9):38-42.

12. Silwal M, Gurung G. Prevalence of Uterine Prolapse and its Associated Factors in kaski District of Napel. Journal of School of Health and Allied Sciences. 2012;2(1):38-41.

13. Wan C, Powell B. Forests, women and health: opportunities and challenges for conservation International Forestry Review. 2011;13(3):369-387.

14. Gjerde JL, Rortveit G, Muleta M, Adefris M, Blystad A. Living with pelvic organ prolapse: voices of women from Amhara region, Ethiopia. International urogynecology journal. 2017;28(3):361-366.

15. Segesten K. Nepales Women Suffering from Uterine Prolapse. A participant Observational Study in A maternity Hospital in Napel. Msc thesis, Goteborgs University. 2014.

16. Good M, Copas JP, Doody M. Uterine prolapse after laparoscopic uterosacral transection. A case report. The Journal of Reproductive Medicine. 1992;37(12):995-996.

17. Neupane S. Effectiveness of self-instructional module on level of knowledge regarding prevention and management of uterine prolapse among the perimenopausal women in selected urban area of Mangalore. 2013.

18. Christina MRR, Arja R. Uterine Prolapse Prevention in Eastern Nepal. International Journal of Women's Health. 2012;(4):374.

19. Shrotri N. Surgical Principles in Obstetrics and Gynaecology. 2013.

20. Puri R. Prevalence, risk factors and traditional treatments of genital prolapse in Manma, Kalikot district, Nepal: a community based population study: Universitetet i Tromsø. 2011.

21. Henok A. Prevalence and factors associated with pelvic organ prolapse among pedestrian back-loading women in Bench Maji Zone. Ethiopian Journal of Health Sciences. 2017;27(3):263-272.

22. Silwal M, Gurung G, Shrestha N, Gurung A, Ojha S. Prevalence and Factors Affecting Women with Uterine Prolapse in Lekhnath, Kaski, Nepal. Journal of Gandaki Medical College-Nepal. 2016;9(2):52-57.

23. Sumathi N. Uterovaginal Prolapse- A Study In South Indian Women. Sch J App Med Sci. 2017;5(4F):1698-1704.

24. Akmel M, Segni H. Pelvic organ prolapse in Jimma University specialized hospital, Southwest Ethiopia. Ethiopian Journal of Health Sciences. 2012;22(2)1-10.

25. Asresie EA, Setegn T. Determinants of pelvic organ prolapse among gynecologic patients in Bahir Dar, North West Ethiopia: a case-control study. International Journal of Women's Health. 2016;8:713-719.

26. https://www.informedhealth.org/

27. John OL. Graphic integration of causal factors of pelvic floor disorders. Am J Obstet Gynecol. 2008;199(6):610.

28. Megabiaw BAM, Rortveit G, Degu G, Muleta. Pelvic floor disorders among women in Dabat district, northwest Ethiopia: a pilot study. Int Urogynecol J. 2012;5:1-10.

29. Zinash Lema YB, Meskele M. Determinants of Pelvic Organ Prolapse among Gynecological Cases in Wolaita Sodo University Referral Teaching Hospital, Southern Ethiopia: A Case Control Study. Journal of Biology, Agriculture and Healthcare. 2015;5:21.

30. Pathak K, Khanal S. Factors Associated with Uterine Prolapse among Married Women of Reproductive Age Group of Gorkha District. Age. 2018;25(15):9-8.