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Prevalence and Factors Associated with Uterine Prolapse in Butembo, in the East of the Democratic Republic of the Congo

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Abstract

Introduction: Uterine prolapse is a common condition among elderly and reproductive-aged women. It causes various physical, emotional and social limitations. The objective of this work was to determine the prevalence and risk factors associated with uterine prolapse in Butembo, a low-income setting. **Materials and Methods:** This was a case-control study that was conducted in Butembo from January 1 to September 30, 2024 with 48 patients with uterine prolapse and 134 patients with other pelvic static disorders, considered as controls. The data collected were entered into Microsoft Office LTSC 2021 Excel software and analyzed using R software version 4.4.0. We performed bivariate analyses and calculated odds ratios using the logistic regression method. The significance threshold was set at $p < 0.05$. **Results:** The prevalence of uterine prolapse was 6.7%. The age group of patients aged 50 to 84 years (OR = 2.36; p-value = 0.043), the rural place of origin (OR = 6.06; p-value < 0.001) and the marital status of widows (OR = 5.85; p-value < 0.001) significantly multiplied the risk of occurrence of uterine prolapse. The same is true for obstetric factors such as parity (OR = 1.32; p-value < 0.001), history of delivery of a macrosomia newborn (OR = 9.83; p-value < 0.001) and use of the Cristeler method during delivery (OR = 10.9; p-value < 0.001) and other factors such as overweight/obesity (OR = 4.54; p-value = 0.007) and chronic cough (OR = 3.12; p-value = 0.004). **Conclusion:** Uterine prolapse is a common pathology in Butembo and the associated risk factors are the age of the patients, the rural background, multiparity, the history of vaginal delivery with fetal macrosomia, the use of

the Cristeler method during delivery.

Keywords

Uterine Prolapse, Macrosomia, Associated Factors, Management, Butembo

1. Introduction

Uterine prolapse is a common problem that can occur in women of any age group. Despite its high prevalence in developing countries, it has not received adequate medical attention. Due to various physical, psychological and mental health problems, including emotional disorders, the quality of life of patients with uterine prolapse is affected [1]. It causes limitations in their sexual life, leads to depression, loss of self-esteem, lack of sleep, rejection and isolation as well as negatively impacts the daily economic activities of these women such as agriculture, ultimately leading to poverty [1] [2].

Risk factors for uterine prolapse include age, parity, and predisposing factors such as obstetric conditions resulting in excessive stretching and tearing, multiple deliveries [3]-[5], vaginal delivery especially with a macrosomia newborn and women with a high body mass index, as well as the use of unskilled birth attendants [6] [7].

The prevalence of uterine prolapse is 19.7% according to a systematic review of studies conducted in resource-limited countries [3]. In Nepal, more than one million women suffer from uterine prolapse and most of them are of reproductive age. Its overall prevalence is 10% [8] [9].

Surgical management of uterine prolapse varies considerably and recently sparing techniques have gained popularity [10]. But currently, no optimal surgical treatment has been identified to correct uterine prolapse, knowing that one in three women with uterine prolapse undergoing surgery has a relapse [11].

I n developing countries such as the DRC, lack of knowledge about preventive measures and the perception of uterine prolapse as a normal phenomenon constitute obstacles to access to treatment [9]. Women in Butembo and surrounding areas mainly engage in rural activities, characterized by carrying heavy loads. They also have difficulty accessing quality obstetric care with a high rate of delivery in health facilities. They are thus exposed to risk factors for uterine prolapse. No study of this type has been conducted in the area. This is why we conducted this study with the aim of determining the risk factors associated with uterine prolapse in Butembo, in the east of the Democratic Republic of the Congo.

2. Materials and Methods

2.1. Study Site, Population and Sample

This case-control study took place in the town of Butembo, in the east of the Democratic Republic of the Congo. The Cliniques Universitaires du Graben (CUG),

the Hôpital Secondaire de Référence de Matanda and the Clinique du Programme Fistule (FISPRO) were used for the study. These facilities were chosen based on their gynaecology caseload and the existence of a technical platform adapted to the management of uterine prolapse in the context of low-resource countries. The sampling was exhaustive, and the sample was composed of 48 patients with uterine prolapse considered as cases and 144 patients among the 671 patients with other pelvic static disorders other than uterine prolapse (cystocele, rectocele, urinary incontinence, faecal incontinence, genital fistulas, rectal prolapse, etc.), considered as controls during the study period.

2.2. Selection Criteria for Study Participants

2.2.1. Case Selection Criteria

Inclusion criteria:

- Women diagnosed with uterine prolapse who presented to one of the three selected healthcare facilities during the study period (January 1 to June 30, 2024).
- Aged 18 years or older and willing to give informed consent to participate in the study.

Exclusion criteria:

- Patients with uterine prolapse who have undergone previous surgery for pelvic organ prolapse.
- Women with uterine prolapse associated with malignancy.
- Women who are pregnant or have significant co-morbidities (e.g. advanced cardiovascular disease) that could interfere with the results of the study.
- Patients refuse to give consent or are unable to participate in follow-up assessments.

2.2.2. Control Selection Criteria

Inclusion criteria:

- Women diagnosed with other pelvic static disorders (such as cystocele, rectocele or enterocele, ...) other than uterine prolapse.
- Be aged 18 or over and have given informed consent to participate in the study.

Exclusion criteria:

- All patients with pelvic organ prolapse have other co-morbidities such as malignancies, heart disease, etc.

2.3. Data Collection

Data collection was prospective. A data collection form prepared in advance enabled us to gather information useful for research into risk factors associated with uterine prolapse. Patients were selected when they presented to one of the three facilities during the study period. While the study, the patients benefited from awareness-raising sessions with doctors in the town of Butembo and radio broadcasts from the voice of the UCG in Butembo by one of the team members.

Once they arrived, after assessing their eligibility and obtaining their written

informed consent, all patients with uterine prolapse (cases) and all controls were questioned about their antecedents recognised in the literature as factors associated with uterine prolapse. The following study variables were collected on a data collection form: age, place of origin, level of education, marital status, occupation, socio-economic level, gestation, parity, history of caesarean section, delivery of macrosomic newborns, use of the Cristeler method, history of perineal tear, menopausal status, overweight/obesity, physical activity (exertion), chronic cough.

Data Analysis and Processing

The collected data were entered into Excel (Microsoft Office, LTSC 2021) before being exported to R software version 4.4.0. for different analyses.

For bivariate analyses, the comparison of means was carried out using the Welch t-test; while that of percentages using the Fisher exact test and/or the Pearson chi-square test depending on their validity conditions.

The bivariate analysis allowed us to select the variables to be integrated into the logistic regression model. Thus, all variables with a p-value less than 0.4 were integrated into the initial model. The selection of variables to be included in the final model was carried out using the ascending stepwise method based on the Akaike information criterion (AIC).

The raw odds ratios (univariate logistic regression) and the corrected odds ratios (multivariate logistic regression) were successively calculated.

A p-value less than 0.05 was considered statistically significant.

2.4. Ethical Considerations

We received authorization from the Ethics Committee of the Catholic University of Graben by notification of notice N: PMS. 02/24/UCG/CERM. We also received authorization from the medical directors of the hospitals in which we conducted our study as well as from the chief physicians of their area of responsibility. Informed consent was offered to the patients before their inclusion in the study. Security measures regarding the confidentiality of the information collected were guaranteed by anonymity during the collection, processing and analysis of the results.

3. Results

3.1. Prevalence

During this study of 719 patients who came for consultation for pelvic floor disorders, 48 had uterine prolapse, resulting in a prevalence of 6.7%.

3.2. Bivariate Analyses of Sociodemographic Factors Associated with Uterine Prolapse

Table 1 shows that age, place of origin and marital status were significantly associated with the occurrence of uterine prolapse. The mean age of cases was higher than that of controls with 59.1 ± 12.6 years versus 52.1 ± 12.7 years; 83.3% of cases

were from rural areas versus 61.1% of controls; 29.2% of cases were widowed versus 5.6% of controls.

Table 1. Sociodemographic factors associated with uterine prolapse.

Variables	Cases N = 48[1]	Controls N = 144[1]	Overall N = 192[1]	p-value
Age (years)				
Average Age	59.1 (12.6)	52.1 (12.7)	53.9 (13.0)	**0.001[2]**
Age groups				**0.003[3]**
24 - 49	13 (27.1%)	74 (51.4%)	87 (45.3%)	
50 - 84	35 (72.9%)	70 (48.6%)	105 (54.7%)	
Place of Origin				**0.005[3]**
Rural	40 (83.3%)	88 (61.1%)	128 (66.7%)	
Urban	8 (16.7%)	56 (38.9%)	64 (33.3%)	
Educational Level				0.5[4]
Illiterate	26 (54.2%)	85 (59.0%)	111 (57.8%)	
Primary	13 (27.1%)	25 (17.4%)	38 (19.8%)	
Secondary	8 (16.7%)	26 (18.1%)	34 (17.7%)	
Higher	1 (2.1%)	8 (5.6%)	9 (4.7%)	
Marital Status				**<0.001[4]**
Single	1 (2.1%)	10 (6.9%)	11 (5.7%)	
Married	33 (68.8%)	126 (87.5%)	159 (82.8%)	
Widowed	14 (29.2%)	8 (5.6%)	22 (11.5%)	
Occupation				>0.9[4]
Farmer	47 (97.9%)	142 (98.6%)	189 (98.4%)	
Teacher	1 (2.1%)	2 (1.4%)	3 (1.6%)	
Socioeconomic Level				0.2[3]
Average	25 (52.1%)	55 (38.2%)	80 (41.7%)	
Poor/Very poor	17 (35.4%)	57 (39.6%)	74 (38.5%)	
Rich/Very rich	6 (12.5%)	32 (22.2%)	38 (19.8%)	

[1]Mean (SD); n (%); [2]Welch two sample t-test; [3]Chi-square tests of independence; [4]Fisher's exact test.

3.3. Bivariate Analysis of Gynecological and Obstetric Factors Associated with Uterine Prolapse

It is apparent from the analysis of Table 2 that gestation, parity, macrosomia, Cristeler maneuver, and perineal tear were significantly associated with the occurrence of uterine prolapse. Indeed, the mean gestation of cases was higher than that of controls with 9.3 ± 3 compared to 7.2 ± 3.2 observed in controls. The mean parity of cases was also higher than that of controls with 9.1 ± 2.8 compared to 7.1 ± 3.2 observed in controls. The history of macrosomia was found in 85.4% of cases compared to 25.0% of controls. Use of Cristeler manoeuvre was found in 89.6% of cases compared to 28.5% of controls. A history of perineal tears was found in 50.0% of cases compared to 28.5% of controls. Finally, 81.3% of cases were postmenopausal compared to 62.5% of controls.

Table 2. Gynecological and obstetric factors associated with uterine prolapse.

Variables	Cases N = 48[1]	Controls N = 144[1]	Overall N = 192[1]	p-value
Gestational Status	9.3 (3.0)	7.2 (3.2)	7.7 (3.3)	**<0.001[2]**
Parity	9.1 (2.8)	7.1 (3.2)	7.6 (3.2)	**<0.001[2]**
Caesarean section				0.2[3]
Yes	7 (14.6%)	11 (7.6%)	18 (9.4%)	
No	41 (85.4%)	133 (92.4%)	174 (90.6%)	
Macrosomia				**<0.001[4]**
Yes	41 (85.4%)	36 (25.0%)	77 (40.1%)	
No	7 (14.6%)	108 (75.0%)	115 (59.9%)	
Cristeler manoeuvre				**<0.001[4]**
Yes	43 (89.6%)	41 (28.5%)	84 (43.8%)	
No	5 (10.4%)	103 (71.5%)	108 (56.3%)	
Perineal Tear				**0.006[4]**
Yes	24 (50.0%)	41 (28.5%)	65 (33.9%)	
No	24 (50.0%)	103 (71.5%)	127 (66.1%)	
Menopausal status				**0.017[4]**
Yes	39 (81.3%)	90 (62.5%)	129 (67.2%)	
No	9 (18.8%)	54 (37.5%)	63 (32.8%)	

[1]Mean (SD); n (%); [2]Welch two-sample t-test; [3]Fisher's exact test; [4]Chi-square tests of independence.

3.4. Bivariate Analysis of Medical and Environmental Factors Potentially Associated with the Occurrence of Uterine Prolapse

It emerges from the analysis of Table 3 that physical activity and chronic cough were significantly associated with the occurrence of uterine prolapse. Indeed, 83.3% of cases practiced intense physical activities compared to 50.7% of controls. A history of chronic cough was observed in 45.8% of cases compared to 20.1% of controls.

Table 3. Medical and environmental factors associated with uterine prolapse.

Variables	Case N = 48[1]	Controls N = 144[1]	Overall N = 192[1]	p-value
Overweight/Obesity				0.2[2]
Yes	13 (27.1%)	26 (18.1%)	39 (20.3%)	
No	35 (72.9%)	118 (81.9%)	153 (79.7%)	
Physical activity				**<0.001[3]**
Intense	40 (83.3%)	73 (50.7%)	113 (58.9%)	
Moderate	7 (14.6%)	63 (43.8%)	70 (36.5%)	
Light	1 (2.1%)	8 (5.6%)	9 (4.7%)	
Constipation				0.3[2]
Yes	15 (31.3%)	35 (24.3%)	50 (26.0%)	
No	33 (68.8%)	109 (75.7%)	142 (74.0%)	
Chronic cough				**<0.001[2]**
Yes	22 (45.8%)	29 (20.1%)	51 (26.6%)	
No	26 (54.2%)	115 (79.9%)	141 (73.4%)	

[1]n (%); [2]Chi-square tests of independence; [3]Fisher's exact test.

3.5. Multivariate Analysis of Sociodemographic Factors That May Be Associated with the Occurrence of Uterine Prolapse

Table 4 shows that in multivariate logistic regression analysis, the age group of patients aged 50 to 84 years (OR = 2.36; [95% CI = 1.05 - 5.58]; p-value = 0.043), rural place of origin (OR = 6.06; [95% CI = 2.28 - 18.1]; p-value < 0.001) and marital status of widows (OR = 5.85; [95% CI = 2.12 - 17.5]; p-value < 0.001) significantly multiplied the risk of occurrence of uterine prolapse.

Table 4. Modeling of sociodemographic factors associated with uterine prolapse.

Variables	Description	Univariate regression			Multivariate regression		
	Effectif[1]	OR[2]	95% CI[2]	p	OR[2]	95% CI[2]	p
Age (years)							
24 - 49	14.9% (13/87)	—	—		—	—	
50 - 84	33.3% (35/105)	2.85	1.42 - 6.00	**0.004**	2.36	1.05 - 5.58	**0.043**
Place of Origin							
Urban	12.5% (8/64)	—	—		—	—	
Rural	31.3% (40/128)	3.18	1.45 - 7.78	**0.006**	6.06	2.28 - 18.1	**<0.001**
Marital Status							
Single	20.8% (33/159)	—	—		—	—	
Married	9.1% (1/11)	0.38	0.02 - 2.10	0.4	0.29	0.01 - 1.90	0.3
Widowed	63.6% (14/22)	6.68	2.64 - 18.0	**<0.001**	5.85	2.12 - 17.5	**<0.001**
Educational Level							
Higher	11.1% (1/9)	—	—		—	—	
Primary	34.2% (13/38)	4.16	0.66 - 81.5	0.2	1.48	0.16 - 34.0	0.8
Illiterate	23.4% (26/111)	2.45	0.42 - 46.5	0.4	0.39	0.04 - 8.92	0.5
Secondary	23.5% (8/34)	2.46	0.36 - 49.2	0.4	0.88	0.09 - 20.6	>0.9

[1]% (n/N); [2]OR = odds ratio, CI = confidence interval.

3.6. Multivariate Analysis of Gynecological and Obstetric Factors That May Be Associated with the Occurrence of Uterine Prolapse

Table 5 shows that in multivariate logistic regression analysis, parity (OR = 1.32; [95% CI = 1.14 - 1.57]; p-value < 0.001), macrosomia (OR = 9.83; [95% CI = 3.04 - 36.7]; p-value < 0.001) and use of the Cristeler mmanoeuvre (OR = 10.9; [95% CI = 2.78 - 49.4]; p-value < 0.001) significantly increased the risk of uterine prolapse.

Table 5. Modeling of gynecological and obstetric factors associated with uterine prolapse.

Variables	Description	Univariate regression			Multivariate regression		
	Effectif[1]	OR[2]	95% CI[2]	p	OR[2]	95% CI[2]	p
Parity	9.10 (2.82)	1.24	1.11 - 1.40	**<0.001**	1.32	1.14 - 1.57	**<0.001**
Caesarean section							
No	23.6% (41/174)	—	—		—	—	
Yes	38.9% (7/18)	2.06	0.72 - 5.59	0.2	4.13	0.79 - 26.4	0.11
Macrosomia							
No	6.1% (7/115)	—	—		—	—	
Yes	53.2% (41/77)	17.6	7.65 - 46.0	**<0.001**	9.83	3.04 - 36.7	**<0.001**

Continued

Cristeler Manoeuvre							
No	4.6% (5/108)	—	—		—	—	
Yes	51.2% (43/84)	21.6	8.69 - 65.9	**<0.001**	10.9	2.78 - 49.4	**<0.001**
Perineal tear							
No	18.9% (24/127)	—	—		—	—	
Yes	36.9% (24/65)	2.51	1.28 - 4.94	**0.007**	0.33	0.11 - 1.93	0.43

[1]Mean (SD); % (n/N); [2]OR = odds ratio, CI = confidence interval.

3.7. Multivariate Analysis of Medical and Environmental Factors That May Be Associated with the Occurrence of Uterine Prolapse

Table 6 shows that in multivariate logistic regression analysis, overweight/obesity (OR = 4.54; [95% CI = 1.57 - 15.1]; p-value = 0.007) and chronic cough (OR = 3.12; [95% CI = 1.45 - 6.81]; p-value = 0.004) significantly increased the risk of uterine prolapse.

Table 6. Modeling of medical and environmental factors associated with uterine prolapse.

Variables	Description	Univariate regression			Multivariate regression		
	Effectif[1]	**OR[2]**	**95% CI[2]**	**p**	**OR[2]**	**95% CI[2]**	**p**
Overweight/Obesity							
No	22.9% (35/153)	—	—		—	—	
Yes	33.3% (13/39)	1.69	0.77 - 3.58	0.2	4.54	1.57 - 15.1	**0.007**
Physical activity							
Light	11.1% (1/9)	—	—		—	—	
Moderate	10.0% (7/70)	0.89	0.13 - 17.7	>0.9	0.26	0.03 - 5.60	0.3
Intense	35.4% (40/113)	4.38	0.76 - 82.8	0.2	2.61	0.44 - 49.9	0.4
Chronic cough							
No	18.4% (26/141)	—	—		—	—	
Yes	43.1% (22/51)	3.36	1.67 - 6.78	**<0.001**	3.12	1.45 - 6.81	**0.004**

[1]% (n/N); [2]OR = odds ratio, CI = confidence interval.

4. Discussion

This study contributed to improving the management of uterine prolapse by assessing the risk factors associated with uterine prolapse in Butembo, a low-resource setting.

During this study of 719 patients who came for consultation for pelvic floor disorders, 48 had uterine prolapse, resulting in a prevalence of 6.7%. This result is like those found by Aboua B *et al.* [12] in Côte d'Ivoire in 2020, Jokhio AH *et al.* [13] in Pakistan in 2020 who found the prevalence of uterine prolapse at 10.3%. On the other hand, our prevalence is higher than that found by Likilo O *et al.* [14] in Kisangani in 2015 who found a prevalence of 0.61%. It is also lower than that found by Kayembe TA *et al.* [15] in Kananga (The Republic Democratic of the Congo) in 2024 who found 24.12%. These results demonstrate the importance of uterine prolapse as a health problem in low-resource countries and it is crucial to

explore the associated factors because its prevalence depends on the region.

The results in **Table 1** show that age, place of origin and marital status were significantly associated with the occurrence of uterine prolapse. Indeed, the patients were aged 50 - 84 years (72.9% versus 48.6%, p = 0.003) with the mean age of the patients of 59.1 ± 12.6 years. Liu YY *et al.* [16] found that patients with uterine prolapse were aged >65 years (67.4% vs. 42.2%, p = 0.007). In multivariate logistic regression analysis, the age group of patients aged 50 to 84 years multiplied the risk of uterine prolapse occurrence by 2.36 times (p-value = 0.043). This result was confirmed by the study conducted in northwest Ethiopia by Belayneh T *et al.* [17] which showed that prolapse affects older women (> 45 years) more than young women (ORa = 21.48). Byamugisha *et al.* [18] in Uganda found the mean age of patients with uterine prolapse to be 57 years. This could be explained by the drop in estrogen levels during the post-menopausal period, which is responsible for a decrease in the strength of the pelvic floor structure.

Eighty-three-point three percent of patients with uterine prolapse came from rural areas compared to 16.7% of those from urban areas. This result corroborates those obtained by Muche *et al.* [19] in Ethiopia in 2021 who found that 61.5 % of cases came from rural areas compared. In multivariate logistic regression analysis, the rural background multiplied the risk of prolapse occurrence 6.06 times (p-value = 0.001). Twenty-nine-point two percent of cases were widows compared to 5.6% of controls and in multivariate analysis the marital status of widows multiplied the risk of uterine prolapse by 5.85 times. This result is like that found by Devkota HR *et al.* [20] in Nepal in 2020 found that Housewives were more prone to uterine prolapse than women engaged in farming (odds ratio = 2.13, 95% confidence interval = 1.31 - 3.47). The results in **Table 2** show a predominance of cases of uterine prolapse in multigravida and multiparous patients (9.3 ± 3 vs 7.2 ± 3.2 and 9.1 ± 2.8 vs 7.1 ± 3.2), with a history of vaginal delivery with macrosomia fetus (85.4% vs 25%), those in whom we find the notion of the use of the Kristeller method during delivery (89.6% vs 28.5%), perineal tears (50% vs 28.5%) and menopausal (81.3% vs 62.5%). These data are consistent with several studies including that conducted by Tiruneh MA *et al.* [21] in Ethiopia which associated multiparity (≥5) and macrosomia with an increased risk of uterine prolapse. Ilunga-Mbaya E *et al.* [22] in 2024 found that macrosomia was associated with a 3.2-fold increased risk of uterine prolapse.

A Chinese study conducted by Shi JF *et al.* [23] in 2013 highlighted the impact of menopause in the genesis of uterine prolapse. Overall, obstetric factors (parity, traumatic maneuvers), macrosomia, and menopause remain major risk factors for uterine prolapse. The results in **Table 3** indicate that 83.3% of uterine prolapse cases engaged in strenuous physical activities compared to 50.7% of controls, and that 45.8% of cases had a history of chronic cough compared to 20.1% of controls, highlighting the impact of these factors. These observations are consistent with recent studies: Koyuncu A *et al.* [24] found an association between carrying heavy loads (strenuous activity) and an increased risk of uterine prolapse. Regarding

chronic cough, Ali A *et al.* [25] reported that the chronic cough (adjusted odds ratio = 2.39, 95% confidence interval = 1.10 - 5.19) was significantly associated with pelvic organ prolapse.

5. Conclusion

Uterine prolapse is a common pathology in Butembo. Risk factors associated with uterine prolapse in Butembo are age over 50 years, rural area, high parity, history of vaginal delivery with fetal macrosomia, use of the Cristeler method during delivery, overweight/obesity and chronic cough. Management of delivery in maternity wards by qualified personnel and avoidance of other risk factors are necessary to minimize the occurrence of uterine prolapse in Butembo and surrounding areas. In addition, it is necessary to improve delivery conditions by limiting obstetric risk factors and to prevent and properly treat constipation as well as the cause of chronic cough.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

[1] Ravindra, S.T.K., Savitri, R. and Bhavani, A. (2007) Women's Experiences of Utero Vaginal Pro-Lapse: A Qualitative Study from Tamil Nadu, India. http://www.ruwsec.org/wp-content/uploads/2011/11/41.pdf

[2] Geoffrion, R. and Larouche, M. (2021) Directive Clinique n˚413: Traitement chirurgical du prolapsus génital apical chez les femmes. *Journal of Obstetrics and Gynaecology Canada*, **43**, 524-538. https://doi.org/10.1016/j.jogc.2021.02.002

[3] Walker, G.J.A. and Gunasekera, P. (2010) Pelvic Organ Prolapse and Incontinence in Developing Countries: Review of Prevalence and Risk Factors. *International Urogynecology Journal*, **22**, 127-135. https://doi.org/10.1007/s00192-010-1215-0

[4] Kim, C.M., Jeon, M.J., Chung, D.J., Kim, S.K., Kim, J.W. and Bai, S.W. (2007) Risk Factors for Pelvic Organ Prolapse. *International Journal of Gynecology & Obstetrics*, **98**, 248-251. https://doi.org/10.1016/j.ijgo.2007.02.019

[5] Miedel, A., Tegerstedt, G., Mæhle-Schmidt, M., Nyrén, O. and Hammarström, M. (2009) Nonobstetric Risk Factors for Symptomatic Pelvic Organ Prolapse. *Obstetrics & Gynecology*, **113**, 1089-1097. https://doi.org/10.1097/aog.0b013e3181a11a85

[6] Gyhagen, M., Bullarbo, M., Nielsen, T. and Milsom, I. (2012) Prevalence and Risk Factors for Pelvic Organ Prolapse 20 Years after Childbirth: A National Cohort Study in Singleton Primiparae after Vaginal or Caesarean Delivery. *BJOG: An International Journal of Obstetrics & Gynaecology*, **120**, 152-160. https://doi.org/10.1111/1471-0528.12020

[7] Bodner-Adler, B., Shrivastava, C. and Bodner, K. (2007) Risk Factors for Uterine Prolapse in Nepal. *International Urogynecology Journal*, **18**, 1343-1346. https://doi.org/10.1007/s00192-007-0331-y

[8] Gurung, G., Rana, A., Amatya, A., Bista, K.D., Joshi, A.B. and Sayami, J. (1970) Pelvic Organ Prolapse in Rural Nepalese Women of Reproductive Age Groups: What Makes It So Common? *Nepal Journal of Obstetrics and Gynaecology*, **2**, 35-41. https://doi.org/10.3126/njog.v2i2.1453

[9] Khadgi, J. and Poudel, A. (2018) Uterine Prolapse: A Hidden Tragedy of Women in Rural Nepal. *International Urogynecology Journal*, **29**, 1575-1578. https://doi.org/10.1007/s00192-018-3764-6

[10] Bergman, I., Söderberg, M.W., Kjaeldgaard, A. and Ek, M. (2016) Cervical Amputation versus Vaginal Hysterectomy: A Population-Based Register Study. *International Urogynecology Journal*, **28**, 257-266. https://doi.org/10.1007/s00192-016-3119-0

[11] Brunes, M., Johannesson, U., Drca, A., Bergman, I., Söderberg, M., Warnqvist, A., *et al.* (2022) Recurrent Surgery in Uterine Prolapse: A Nationwide Register Study. *Acta Obstetricia et Gynecologica Scandinavica*, **101**, 532-541. https://doi.org/10.1111/aogs.14340

[12] Aboua, B., N'da, D. and Amani-Bosse, C. (2020) Prevalence of Pelvic Organ Prolapse in Women at-Tending Obstetric and Gynecological Consultations in Abidjan. *Journal of Obstetrics and Gynaecology*, **40**, 363-367.

[13] Jokhio, A.H., Rizvi, R.M. and MacArthur, C. (2020) Prevalence of Pelvic Organ Prolapse in Women, Associated Factors and Impact on Quality of Life in Rural Pakistan: Population-Based Study. *BMC Women's Health*, **20**, Article No. 82. https://doi.org/10.1186/s12905-020-00934-6

[14] Likilo, O., Bosenge, N., Lemalema, B., Kyembwa, M., Katenga, B., Komanda, L., *et al.* (2017) Uter-Ine Prolapse: Prevalence, Risk Factors and Management in Kisangani in Democratic Republic of Congo. *International Journal of Innovation and Applied Studies*, **22**, 29-37.

[15] Kayembe, A.T., Ilunga, B.M., Muakuya, J.M., Muela, A.M. and Tozin, R.R. (2024) Pelvic Organ Prolapse: A Cross-Sectional Study during Mass Campaign in Two Hospitals in the City of Kananga in the Democratic Republic of Congo. *The Pan African Medical Journal*, **47**, Article 52. https://doi.org/10.11604/pamj.2024.47.52.42470

[16] Liu, Y.-Y., Wang, C.-L., Loo, Z.-X., Lin, K.-L. and Long, C.-Y. (2021) Clinical Risk Factors for Uterine Cervical Elongation among Women with Pelvic Organ Prolapse. *International Journal of Environmental Research and Public Health*, **18**, Article 9255. https://doi.org/10.3390/ijerph18179255

[17] Belayneh, T., Gebeyehu, A., Adefris, M., Rortveit, G. and Awoke, T. (2019) Pelvic Organ Prolapse in Northwest Ethiopia: A Population-Based Study. *International Urogynecology Journal*, **31**, 1873-1881. https://doi.org/10.1007/s00192-019-04196-1

[18] Byamugisha, J., Justus, B., Kakaire, O., Haddy, N., Susan, O., Korn, A., *et al.* (2023) Characteristics and Outcomes of Patients with Pelvic Organ Prolapse: An Analysis of Data from Mulago National Referral Hospital from 2007-2016. *African Health Sciences*, **23**, 410-416. https://doi.org/10.4314/ahs.v23i1.43

[19] Muche, H.A., Kassie, F.Y., Biweta, M.A., Gelaw, K.A. and Debele, T.Z. (2021) Prevalence and Associated Factors of Pelvic Organ Prolapse among Women Attending Gynecologic Clinic in Referral Hospitals of Amhara Regional State, Ethiopia. *International Urogynecology Journal*, **32**, 1419-1426. https://doi.org/10.1007/s00192-021-04710-4

[20] Devkota, H.R., Sijali, T.R., Harris, C., Ghimire, D.J., Prata, N. and Bates, M.N. (2020) Bio-Mechanical Risk Factors for Uterine Prolapse among Women Living in the Hills of West Nepal: A Case-Control Study. *Women's Health*, **16**, 1-9. https://doi.org/10.1177/1745506519895175

[21] Tiruneh, M.A., Abate, S.M. and Yalew, A.W. (2020) Prevalence and Risk Factors of Pelvic Organ Prolapse among Women in Ethiopia: A Systematic Review and Meta-Analysis. *International Urogynecology Journal*, **31**, 1803-1812.

[22] Ilunga-Mbaya, E., Mukwege, D., De Tayrac, R., Mbunga, B., Maroyi, R., Ntakwinja,

M., *et al.* (2024) Exploring Risk Factors of Pelvic Organ Prolapse at Eastern of Democratic Republic of Congo: A Case-Control Study. *BMC Women's Health*, **24**, Article No. 199. https://doi.org/10.1186/s12905-024-03010-5

[23] Shi, J.F., Xu, W.Z., Wang, H.F., Tao, W.K., Ren, Y.X., Zhang, T. and Yu, X. (2023) An Evaluation of Pelvic Organ Prolapses in Perimenopausal and Menopausal Chinese Females. *European Review for Medical & Pharmacological Sciences*, **27**, 3914-3921.

[24] Koyuncu, A., Kadota, J.L., Mnyippembe, A., Njau, P.F., Sijali, T.R., McCoy, S.I., *et al.* (2021) Heavy Load Carrying and Symptoms of Pelvic Organ Prolapse among Women in Tanzania and Nepal: An Exploratory Study. *International Journal of Environmental Research and Public Health*, **18**, Article 1279. https://doi.org/10.3390/ijerph18031279

[25] Ali, A., Yadeta, E., Eyeberu, A., Abdisa, L., Bekana, M. and Dheresa, M. (2022) Pelvic Organ Prolapse and Associated Factors among Women Admitted to Gynecology Ward at the Hiwot Fana Comprehensive Specialized Hospital, Harar, Eastern Ethiopia. *SAGE Open Medicine*, **10**, 1-8. https://doi.org/10.1177/20503121221126363