

# Prevalence of Pelvic Organ Prolapse in a Tertiary Care Hospital of Nepal

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## INTRODUCTION

Pelvic organ prolapse (POP) is a widespread and progressive condition, particularly among post-menopausal women. With a global prevalence of 2 - 20% in women under age 45 years, it is one of the commonest reproductive morbidity, especially in developing countries.<sup>1</sup> The most common causes of uterine prolapse are repeated and difficult vaginal deliveries, improper delivery techniques,<sup>2,3</sup> birth injury during vaginal delivery, prolonged second stage, and resumption of heavy work soon after delivery etc.<sup>4,5</sup> Early marriage and child birth, improper delivery practices, increased intraabdominal pressure due to chronic bronchitis, chronic cough, and constipation are also predisposing factors to uterine prolapse.<sup>4</sup>

The occurrence of POP is signified by the symptoms of difficulties and low grade pain, associated with feeling of something coming out at the introitus of the vagina. Prolapses are quantified according to the level in the pelvis reached by the tip of the prolapsing organ, most commonly the the tip of the cervix of prolapsing uterus. If we follow the Shaw's classification of various degrees of POP, it is classified into four degrees - First degree is considered when uterus is prolapsed below the level of ischial spine interiorly but uterus does show outside to fourth degree (procidentia) where entire uterus is prolapsed outside. The Pelvic Organ Prolapse -Quantification(POP-Q) test are employed for the more

## Abstract

**Introduction:** Pelvic organ prolapse is the descent of the pelvic organ from its normal position. Although few genetic and idiopathic causes have been associated with it, it most commonly follows difficult and repeated child births, making it one of the most common morbidities in developing countries like Nepal. In this study, we aim to find the prevalence of pelvic organ prolapse.

**Methods:** A retrospective study was carried out from June 2020 to June 2022 in inpatient setting of Shree Birendra Hospital (SBH), Nepalese Army Institute of Health Sciences (NAIHS), Kathmandu, Nepal. We used systemic random sampling method to select the participants and collected data from hospital records. Descriptive statistics were used to find the prevalence of pelvic organ prolapse, types, grades and the surgery performed.

**Results:** Out of 391 admitted for gynaecological surgeries, 17 of them had pelvic organ prolapse (4.35%). Among them, 13 had grade III and four of them had grade II uterovaginal (UV) prolapse. Vaginal hysterectomy with pelvic floor repair was the most common surgery performed in pelvic organ prolapse.

**Conclusions:** Our study showed 4.35% prevalence of pelvic organ prolapse in our centre.

reproducible examination techniques which are based on metric calculations of various compartments of prolapsed segment of the uterus.<sup>6</sup> Treatment of prolapse are also personalized. It depends upon the age at onset, parity, whether to opt for the surgical treatment or conservative treatment modalities etc.<sup>6</sup> The surgical management options include vaginal hysterectomy with pelvic floor repair or Manchester repair or pessary treatment.<sup>7</sup> For those patients who no longer desire sexual functions or are too old to withstand vaginal hysterectomy, Lefort's operation can be taken into consideration.<sup>8</sup> POP is one of the most common morbidities in Nepal. This study is designed to find the prevalence of pelvic organ prolapse along with the common practices for management.

## METHODS

This study is a retrospective study carried out over two years from June 2020 to June 2022. The current study was conducted in Shree Birendra Hospital (SBH), Chhauni, Kathmandu, Nepal. SBH is the tertiary health care centre, affiliated to Nepalese Army Institute of Health Sciences (NAIHS) and the central referral for army personnel and their dependents in the country. The study population were patients admitted in the Gynaecological Department during the study period. Ethical approval was obtained from the Institutional Review Committee of the Nepalese Army Institute of Health Sciences (NAIHS-IRC) with reference number 232. We used Cochran's formula for sample size calculation. The final sample size was 405, after considering the response rate. We used a systematic random sampling technique. The total number of patients admitted for surgery during the study period was 668. The random start value ( $r$ ) was generated from a random number generator which came out to be 4.

$$k = N/n$$

$$= 668/405$$

$$= 1.65$$

The sampling units were as the following:  $r, k+r, 2k+r, \dots, Nk$

If the sampling unit came out in decimal, it was rounded down. For example, the first sampling unit was 4, then the second was  $4+1.65$ , which is 5.65. By rounding down the 5<sup>th</sup> sampling unit was taken and so on. We used the records of a patient admitted for surgery in the Department of Gynaecology as our study tool. Data entry was done in Microsoft Excel. We then analyzed the data using SPSS 22. We calculated the mean and standard deviation of the sample population. We used descriptive statistics to find the prevalence of UV prolapse with a 95% confidence interval. UV prolapse was then categorized as grade and type of UV prolapse, name of surgery done, and the type of anesthesia used for the surgery.

## RESULTS

The total number of inpatients included in the study was 391, with 10 patients with missing data and four patients were repeated in the registry. The included patients had a mean age of  $47.04 \pm 11.659$  years (mean  $\pm$  standard deviation). The prevalence of POP in the inpatient setting at SBH was 4.35% (2.6% to 6.9%).

**Table 1:** Prevalence of POP

Diagnosis	Frequency (%)
Pelvic organ prolapse	17 (4.35)
No pelvic organ prolapse	374 (95.65)
Total	391

Among 17 patients with POP, 13 of them had Grade III UV prolapse and the remaining four patients had Grade II UV prolapse. The number of patients with cystocele was seven and those with both cystocele and rectocele were three as shown in Table 2.

**Table 2:** Types of POP

S.N	Types	Frequency (%)
1	Uterine prolapse only	7 (41.18)
2	UV prolapse with cystocele	7 (41.18)
3	UV prolapse with cystocele and rectocele	3 (17.64)

The most common surgery performed was vaginal hysterectomy with pelvic floor repair (VH with PFR), most commonly done under spinal anesthesia (SA), followed by general anesthesia (GA). Only one patient each had undergone a vaginal hysterectomy and anterior colporrhaphy, under GA. The figures are enumerated in Table 3.

**Table 3:** Name of surgery and anaesthesia used

S.N		SA	GA
1	VH with PFR	12	3
2	VH with Anterior colporrhaphy	-	1

## DISCUSSION

POP is one of the most common among the chronic problem in women in Nepal.<sup>1</sup> The prevalence of POP was found to be 4.35% in our study conducted in the inpatient setting of SBH. A similar study conducted among women in rural Nepal showed a prevalence of 21.37% for UV prolapse which is nearly five times of our study.<sup>8</sup> Although our study population includes women from around the country as our study site is the referral centre for all

the army personnel and their dependants, we have not included the outpatient cases and that may have resulted lower prevalence in our study. An audit of UV prolapse in southeast Nigeria showed a prevalence of 3.4% among which 48% had grade II prolapse and only 8% had grade III prolapse<sup>7</sup> whereas, in our study, 76.5% had grade III prolapse and 23.5% had grade II prolapse. This huge difference may be the result of the study population as we had considered patients who are admitted to the ward and are considered for an operation which is the modality of management usually in the advanced stage of the condition. It might reflect our practices regarding health-seeking behavior in our part of the world as people seek medical treatment usually at later stages of the disease when the disease is unavoidable. Studies have showed that more than half of the participants had never heard about UV prolapse and even if they had, their knowledge varied.<sup>9,10</sup>

We observed that 41.1% had UV prolapse only, 41.1% had UV prolapse with cystocele, and 17.64% had UV prolapse with cystocele and rectocele. In the study conducted in Southeast Nigeria, 64% had cystocele and 16% had rectocele. Both studies show that UV prolapse rarely occurs in isolation as there is associated cystocele or rectocele in many of the patients. A study in southern India showed predominant presence of third degree UV prolapse amongst the study population, and the most common associated symptoms found in them also are that of cystocele.<sup>14</sup>

Okeke et al showed that vaginal hysterectomy with pelvic floor repair is the main definitive treatment of UV prolapse which is similar to the findings of our study. Less post-operative complications and early recovery after the operation might be the reason for most people choosing VH with PFR.<sup>8</sup>

Sujindra et al reported that UV prolapse comprises 1.8% of the gynaecological case attendance in the outpatient department of a hospital in India. Though the health setting of this nation is quite similar to ours, the prevalence is found to be slightly higher in our study as our study had included diagnosed cases of UV prolapse, this study might miss cases due to presentation with other complaints like discharge per vagina, backache in the setting of gynecological OPD.<sup>7</sup>

Paneru et al reported the prevalence of UV prolapse among adult and old women in hilly areas to be 35.97% which is higher as compared to our study. The differences between the two studies conducted in a similar set of a developing country can be explained by the fact that our study population is small as compared to this study as we had only taken inpatient prolapse cases for our study whereas this study is a community-based study of the Doti district in Nepal.<sup>1</sup>

Doshani et al showed that the prevalence of UV prolapse of some degree in the United States is 14% which is higher as compared to our study as this study had included all the cases of prolapse whereas our study have included advanced stage of POP who are admitted in the hospital for the surgical intervention.<sup>12</sup> Susan et al reported that the rate of UV prolapse was 14.2% which is higher as compared to our study as this study had included all the cases of prolapse whereas our study have included advanced-stage POP who are admitted to the hospital for surgical intervention. The rate of cystocele was 34.3%, and the rate of rectocele was 18.6% as compared to our study where the rate of prolapse with cystocele is 41.1% and the rate of both rectocele and cystocele is 17.64%.<sup>13</sup>

Joseph N conducted a similar survey in a center in south India and found 76.8% of study population have third degree UV prolapse, commonly associated with cystocele i.e. in 74.6%. Most of them underwent the surgical treatment of vaginal hysterectomy, even though they have prescribed ring pessaries to another significant lot. The scenario presented in the studies is congruent to our set up as well, where maximum of the cases have UV prolapse only or associated cystocele. The treatment option provided are similar as well.<sup>14</sup> We have to acknowledge some of the limitations of our research. As this study had been conducted among the serving and families of Army personnel in Shree Birendra Hospital, the data from this study may not be generalized to the entire Nepalese population. Being retrospective nature of the study, we had collected data from records, and hence some information may have been missing. Our study population only consists of the patients admitted to the ward which might slightly differ from the actual scenario of UV terovaginal prolapse in the community.

## CONCLUSIONS

The POP is a common problem among Nepal Army persons and their dependents. The prevalence of POP in the study centre is 4.35%. Early diagnosis and management is important in POP.

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**CONFLICT OF INTEREST:** None

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