Original Article

Pelvic Organ Prolapse (POP) Managed at Jos University Teaching Hospital, Jos Nigeria (JUTH): A 10-Year Review

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ABSTRACT

Objective: To determine the incidence, social demographic characteristics, types and management modalities of pelvic organ prolapse that patient presented with at JUTH Jos, Plateau state Nigeria. **Methods:** A descriptive study of pelvic organ prolapse at JUTH from 1st January 2012 to 31st December, 2021 was done. The data was analysed using SPSS version23.The general characteristics of the study population were determined using descriptive statistics. Test of significance was set at P value <0.05**. Results:** The 484 pelvic organ prolapse patients constituted (1.5%) of the 33242gynaecological out-patient attendees seen during the study period. The mean age of the patients was (51.66± 12.31). There were 308(63.6%) patients with uterine prolapse, 224 (46.3%) had cystocele, 91 (18.8%) patients had rectoceles. Their main occupations were housewife146 (30.8%) and farming 137(28.3%). The parity ranged from zero to 12 with mean of 5.8±2.9. Post menopause (68.3%) constitutes the highest risk factor followed by chronic intraabdominal pressure (38.4%) while a combination of more than two risk factors was seen in 66.1% of the women. Out of the 484 patients seen, 42.8% (207/484) received treatment. Non-surgical treatment was the only treatment modality offered to15.1% (73/484) of the patients while surgery was performed on 16.9% (82/484). The likelihood of early presentation (<6months of presentation to hospital with symptoms) was higher among women who were nulliparous, students, civil servants and possession of tertiary education as compared to multiparous, housewives, farmers and no education. **Conclusion:** Pelvic organ prolapse was seen amongst1.5% of the gynaecological patients at JUTH. Strategies for early presentation to the hospital by these women and early health care is advised.

Keywords: Pelvic organ prolapse, POP, JUTH, 10year, review

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INTRODUCTION

A prolapse is a protrusion of an organ or structure beyond its normal anatomical confines. They are named according to their location and the organs contained within it.[1] Pelvic organ prolapse (POP) is

defined as the downward displacement of pelvic organs from their original position into or beyond the vagina.[2]

Pelvic floor defects consequent upon childbirth occurs due to the stretching and tearing of the endopelvic fascia, the levator muscles, and the perineal body. This defect in the support structures results in downward displacement of structures that are normally located adjacent to the vaginal vault.[2] It is well established also in nulliparous women that there is a genetic predisposition for POP, independent of all other risk factors that may impact or aggravate the condition. In women with a family history of prolapse there is a 2.5-fold increased incidence of POP compared with the general population. [1, 2]

Pelvic organ prolapse is a disturbing problem, which may affect many women and their quality of life.[3] Worldwide it has a prevalence of 41-50% in women over the age of 40years, with a lifetime risk of 7%,[4]and a lifetime risk of surgery of between 12-19%.[2] In Nigeria, the incidence of prolapse is difficult to determine with accuracy as most of the women do not seek medical attention unless symptoms are pronounced and disturbing. This is even more so in the rural areas.[5] The incidence of 1.4% was reported in Sokoto Nigeria,[6] 0.3% from Umuahia Nigeria.[7]

Pregnancy by itself with or without vaginal birth has been cited as a risk factor as well. [3, 4] Damage caused by prolonged labour at home prior to accessing a health facility or untrained/unskilled attendants, increasing parity, macrosomic baby, bearing down prematurely in labour and operative vaginal delivery. Occupations such as farming, heavy weightlifting like trading, chronic cough, constipation alongside ageing and menopause with passage of time puts women at risk for pelvic organ prolapse.[5, 7-10]

It is evident that there is a strong genetic basis for POP.[2] Identifying the genes responsible for the quality of collagen will enable us to counsel high risk nulliparous women regarding possible preventive measures including physiotherapy, avoidance of strenuous activity and even elective caesarean delivery. In Nigeria, institutional delivery is limited, high fertility rates and higher rates of gynecologic disease have been reported and less than 40% of women deliver in health institutions.[11, 12]

Pelvic organ prolapse negatively affects socioeconomic and reproductive activity of affected women,[3,9] so it is imperative that preventive measures, early diagnosis and prompt treatment be instituted by health workers to avoid complications from setting in these women.

In Jos Nigeria, pelvic organ prolapse has remained largely uninvestigated recently. It is therefore of interest to study this condition and the affected women from all over Jos and North central Nigeria. This study, therefore, aims to determine the incidence, risk factors and management modalities of pelvic organ prolapse at Jos University Teaching Hospital, Jos, North Central Nigeria.

MATERIALS AND METHODS

The study was carried out at Jos University Teaching Hospital, Jos which is in Jos Plateau State, North central Nigeria and serves as a referral center for many gynaecological cases. Majority of the women with POP managed in JUTH were referred from the general out-patient department of the hospital and public/private hospitals from surrounding cities.

A 10-year retrospective descriptive study of all patients who attended the gynaecological clinic of the hospital and were diagnosed of pelvic organ prolapse between 1st January 2012 and 31st December 2021 was done. The case files of the women were retrieved from the medical records department of the hospital. Relevant information was carefully extracted from the case files, which included socio-demographic status, risk factors for pelvic organ prolapse, clinical and various treatment modalities offered.

The data was analysed using SPSS version 23. The general characteristics of the study population were determined using descriptive statisticsand associations compared where applicable using Chi-square with level of significance set at <0.05. Ethical approval to conduct this study was obtained from the Research Ethics Committee of the institution.

Prolapse is currently divided into anterior, central and posterior compartments. Although anterior vaginal wall prolapse is still commonly called a cystocele and posterior prolapse a rectocele

or enterocele, the difficulty in providing reproducible descriptions for the purpose of 11.5 the prolapse as follows: 0 (no prolapse), 1 (cervix is below ischial spines), 2 (cervix is up to the introitus), 3/procidentia (cervix is outside the introitus).[14] The patients were examined in the dorsal lithotomy or left lateral position.

Baden-Walker system and its modifications for grading of pelvic organ prolapse was not used.[13] Two modern systems: the Baden Walker Halfway System and Pelvic Organ Prolapse Quantification (POP-Q) are currently being encouraged for use because they are complete in the examinations and more informative on the anatomic defects.[15]

The POP-Q system is more comprehensive classification with good inter-observer and intra-observer reliability of physical examination findings.[15,16] Women diagnosed of cystocele, cystourethrocele, uterine prolapse, vault prolapse, rectocele and enterocele were included. However, patients who had other symptoms other than those of utero-vaginal prolapse such as those with nerve injury or disease, connective tissue disorders, neuromuscular diseases and genital tract malignancy were excluded. Patients with prolapsed fibroid polyps and those with complaints but with no demonstrable descent of any pelvic organ were also excluded

RESULTS

Within the study period of 2012-2021, 33242 patients were seen at the gynecological clinic. Out of these, 484 cases of pelvic organ prolapse fulfilled the inclusion criteria and were identified and retrieved, thus giving an incidence of 1.5% (484/33242).

The age range was from 7–78 years with mean age of 51.66±12.31 years while the modal age group is 60-69years with 21.1%. The mean parity was 5.8± 2.9. Most of the women (63.4%) were married. Most of the women (39.3%) had primary level of education while most 30.2% were housewives. Majority, 56.8% (275/484) of the patients were grand-multiparous women whilst1.0% (5/484) nulliparous women.

Most of the patients were married 72.3% (350/484) while 22.3% (108/484) of them were widows. Most of the women 39.3% (190/484) had primary education while16.3% (79/199) of patients had no formal education as seen in Table 1

Table 1: Sociodemographic characteristics of the respondents (N=484).

Characteristic	Number	Percentage
Age(years)		
<20	22	4.5
20-29	36	7.4
30-39	78	16.1
40 -49	83	17.1
50 – 59	92	19.1
60 – 69	102	21.1
70 – 79	71	14.7
Parity		
0	5	1.0
1	18	3.7
2	38	7.9
3	55	11.4
4	93	19.2
□ □	275	56.8
Marital status		
Single	26	5.4
Married	350	72.3
Widow	108	22.3
Highest level of Education completed		
None	79	16.3
Primary	190	39.3
Secondary	164	33.9
Tertiary	51	10.5
Occupation		
House Wife	146	30.2
Trader/Business	33	6.8
Farming	137	28.3
Civil servant	35	7.2
Student	20	4.1
Others(cleaner,apprentice,tailor)	113	23.3

The risk factors for pelvic organ prolapse present in the patients are shown in Table 2. Most patients were post-menopausal women, 68.3% (331/484).
Table 2

Table 2. Risks factors, clinical presentations and treatment modalities of patient

Risk factors	**Number**	**Percentage**
Postmenopausal	331	68.3
Chronic increase in intraabdominal pressure	186	38.4
Prolong labour	151	31.2
Abdominal mass	54	11.2
Instrumental delivery	14	2.9
Family history	19	3.9
Previous hysterectomy	20	4.1
Distribution of risk factors among the patients with POP as seen at JUTH		
None	30	6.2
One	45	9.3
Two	89	18.4
□❄◆ □	320	66.1
Symptoms and signs		
Protrusion /vaginal mass	399	82.4
Urinary symptoms	178	36.8
Vaginal discharge	72	14.9
Coital challenge	52	10.7
Ulceration	49	10.1
Vaginal itching	33	6.8
Defeacatory symptoms	28	5.8
Presentation		
Anterior vaginal wall prolapse		
Cystocele	224	46.3
Cystourethrocele	42	8.7
Uterine/vault		
Uterine prolapse	308	63.6
Vault prolapse	8	1.7
Posterior vaginal wall prolapse		
Rectocele	91	18.8
Treatment		
Non-surgical		
Weight reduction	25	5.2
☺	48	9.9
Surgical		
Vaginal hysterectomy+Pelvic floor repair	47	9.7
Anterior colporrhaphy	22	4.5
Posterior colpoperineorrhaphy	13	2.7
Summary		
No treatment	277	57.2
Had Treatment	207	42.8
Non-surgical only	73	15.1
Surgical only	82	16.9
Combined	24	5.0

Chronic increase in intra-abdominal pressure (IAP) (from constipation, chronic cough and strenuous physical activities including farming) was present in 38.4% (186/484) of the patients. Up to 31.2% (151/484) patients had a previous history of prolonged labour. Majority, 66.1% (320/484) of the patients had more than two risk factors.

Table 3: Association between Age, Parity, Education, and Occupation with time of presentation to hospital with symptoms (in months)

Age group(yrs)	<6 months of presentation to hospital with symptoms	>6 months of presentation to hospital with symptoms	OR	95% C.I.	p-value
<20	7(3.7)	4(1.3)	2.441	0.667-8.931	0.178
20-29	37(19.8)	16(5.4)	3.225	1.571-6.622	0.001
30-39	19(10.2)	52(17.5)	0.510	0.261-0.996	0.049
40-49	24(12.8)	50(16.8)	0.669	0.353-1.270	0.220
50-59	25(13.4)	53(17.8)	0.658	0.350-1.238	0.194
60-69	37(19.8)	69(23.2)	0.748	0.420-1.332	0.324
70-79	38(20.3)	53(17.8)	1.0		
Parity					
0	4(2.1)	1(0.3)	9.253	1.019-84.043	0.048
1	12(6.3)	6(2.1)	4.627	1.680-12.744	0.003
2	26(13.5)	12(4.1)	5.012	2.413-10.409	0.049
3	30(15.6)	25(8.6)	2.776	1.539-5.007	0.220
4	37(19.3)	56(19.2)	1.528	0.938-2.491	0.089
□	83(43.2)	192(65.8)	1.0		
Education					
None	11(5.4)	68(24.4)	0.026	0.009-0.071	0.001
Primary	52(25.4)	138(49.5)	0.060	0.025-0.142	0.001
Secondary	98(47.8)	66(23.7)	0.236		
Tertiary	44(21.5)	7(2.5)	1.0		
Occupation					
Housewife	28(19.4)	118(34.7)	0.450	0.256-0.793	0.006
Trader	11(7.6)	22(6.5)	0.949	0.417-2.156	0.900
Farming	28(19.4)	109(32.1)	0.487	0.276-0.860	0.013
Civil servant	24(16.7)	11(3.2)	4.140	1.838-9.327	0.001
Student	14(9.7)	6(1.8)	4.427	1.577-12.426	0.0005
*Others	39(27.1)	74(21.8)	1.0		

**The mean time for the 484 patients in this study to present to the hospital with symptoms to seek care was calculated to be 6 months

Most of the women (82.4%) presented with complaint of protrusion/vaginal mass (399/484) while5.8% of the women had defeacatory

symptoms (28/484). Most of the women 308 (63.6%) presented with complaint of uterine prolapse while 1.7% of the women had complaint of vault prolapse and of the 308 patients with uterine prolapse, majority62.7% (193/308) had third degree uterine prolapse, followed by second degree 27.9% (86/308) and first degree 9.4% (29/308).

Protrusion of mass and/or heaviness in the vagina seen in 82.4% (399/484) was the predominant presenting symptom, and a significant number having urinary symptoms 36.8% (178/484). The predominant type of prolapse was uterine prolapse, 63.6% (308/484) while cystocele was present in 46.3% (224/484).

More so, of the 484 women with pelvic organ prolapse seen, 42.8% (207/484) received treatment. Non-surgical treatment was the only treatment modality offered in 15.1% (73/484) of patients while surgery was performed in 16.9% (82/484) of the patients. Only 5.0% (24/484) of the women had combination of surgical and conservative treatments. Vaginal hysterectomy with pelvic floor repair (9.7%) was the predominant surgical treatment and was followed by anterior colporrhaphy (4.5%).

The likelihood of early presentation (<6months of presentation to hospital with symptoms) was higher among women whose ages were <20 years (OR= 2.44: 95% CI 0.667-8.931), 20–29 years (OR= 3.225: 95% CI 1.571-6.622) as compared with those who were 30-39 years (OR= 0.5104: 95% CI 0.261-0.996) and older.

The likelihood of early presentation was higher among women who were nulliparous (parity 0) (OR= 9.253: 95% CI 1.019- 84.043), parity 1 (OR= 4.627: 95% CI 1.680-12.744)) as compared with those whose parity were ≥5 (OR= 1.0). The likelihood of early presentation was higher among women who had tertiary education (OR= 1.00), secondary education (OR= 0.236) as compared with those with no education (OR= 0.026: 95% CI 0.009-0.071)

The likelihood of early presentation was higher among Students (OR= 4.427: 95% CI 1.577-12.426), Civil servants (OR= 4.140: 95% CI 1.838-9.327) as compared with Housewife (OR=0.450: 95% CI 0.256-0.793) and Farming (OR=0.487: 95% CI 0.276-0.860).

DISCUSSION

The incidence of pelvic organ prolapse of 1.5% from our study is similar to 1.4% reported in Sokoto Nigeria, [6] but lower than 2.1% in Enugu, [17] 3.9% in Umuahia, [7] and 6.5% in Nnewi, [18] Nigeria respectively. In a Ghanaian study,[9] the authors reported an incidence of 2.68%, while 6.3% was reported in Northwest Ethiopia.[19]

The mean age from our study is 51.66±12.31 years. This is similar to 55years reported in Nnewi, Nigeria,[18] but at variance with (45.9± 15.1) years reported in Ghana.[9] Pelvic floor disorders are highly prevalent among adult women, [19,20] and number of cases are seen to increase with advancing age as without study.

The mean parity of the women in this study was 5.8± 2.9; the high mean party is similar with findings by different authors [20, 21] This study also shows that grand-multiparous women as compared with nulliparous women are 9 times more likely of presenting more than 6months with symptoms of pelvic organ prolapse as compared to nulliparous women. This may be due to the perceived idea that certain disease conditions are part of the ageing process making such women to disregard early symptoms and not present early to the hospital.

From our study, most of the patients (39.3%) had primary level of formal education while about 33.9%of the patients had secondary school education. Pelvic organ prolapse are not commonly seen in educated women compared to non-educated. This is mainly because women that are educated are less likely to have large family size and are more likely to seek wholesome antenatal care with supervised hospital delivery. [21, 22] Their nutrition is better and is less likely to be engaged in more laborious and physically tasking jobs. [23] From our study, women with tertiary education compared with those with no formal education, are 38 times likely to present within 6months of onset of symptoms.

In this study 56.8% and 68.3% of the patients were grand-multiparous and post-menopausal respectively, leaving the predominant occupations of trading and farming as factors likely responsible for the pelvic organ prolapse. This finding is reported by other authors in some parts of Africa where over 60% of postmenopausal

women had pelvic organ prolapse which strengthens the role of parity and physical activity. [9, 20, 24, 25]

The mean time for the 484 patients in this study to present to the hospital with symptoms to seek care was 6 months. This is at variance from the 4 months reported by Lewicki-Gaupp C et al, [26] which may be due to better awareness and health seeking behavior of the women compared to those in our setting.

In this study 28.3%, 7.2% and 4.1% of study population were into farming, civil servants and students respectively. Farmers were 9 times more likely of presenting 6 months after the onset of symptoms of pelvic organ prolapse as compared to students or civil servants. Seeking of quick intervention has been shown to be delayed in most of these women. There may be need to institute life style modifications here but this may be difficult because most of the women carry out these activities for economic survival. [25]

The commonest pelvic organ prolapses seen in this study are uterine prolapse and cystocele with protrusion/vaginal mass and urinary symptoms noted as the leading presenting symptoms. This is similar to findings reported by other authors. [5, 6, 7, 21]

Various treatment options are available for management of pelvic organ prolapse. Both surgical and non-surgical options were utilized in the management of these women. The number of patients who were treated was 42.8% (207/484). The reasons for the non-treatment of 57.2% of the remaining may be closely related to low socio-economic status with poor financial status, educational level and culture which affect patient perception of the disease. [25] From our study, nonsurgical treatment was less commonly done as compared to other parts of the world where pessaries are readily available. This could be another reason for the high non treatment rate especially for women who probably would have been averse to surgical treatment. Vaginal hysterectomy and pelvic floor repair constituting 9.7% (47/484) was the commonest surgery done from the study. This is similar to a previous report from this centre, [4] and similar to other authors in Nigeria. [17, 21, 27] When there is uterine prolapse in a woman who has completed her family size, vaginal hysterectomy and pelvic floor done. At the surgery, uterosacral/cardinal ligaments are re-attached to the vaginal vault to strengthen the vault and prevent enterocele. [1, 13]

CONCLUSIONS

Post menopause, chronic intraabdominal pressure, prolonged labour and high parity constituted the leading risk factors for pelvic organ prolapse seen in this study. The likelihood of early presentation was higher among women who were nulliparous, students, civil servants and possession of tertiary education as compared to multiparous women, housewives, farmers and possession of no form of education. This affirms the place of education in the overall quality of life of women.

Our results suggest the importance of developing policies and programs that are focused on early health care for pelvic organ prolapse through family planning and health education programs, as well as women empowerment programs for prevention of pelvic organ prolapse and possible complications. The end result will be to restore quality of life related to pelvic organ prolapse.

Surgical services for affected patients could be provided in hospitals within the various communities from where these patients are referred from. So, there is need for more gynecologists in such area which may reduce the time these patients spend before presentation with symptoms.

Limitations of this Study

1. This is a hospital-based study and may not be representative of the widespread population.
2. This is a retrospective study so some case notes could not be retrieved or were incomplete, thus were excluded.

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Conflict of Interest:
There are no conflicts of interest.

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