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Determinants of Caesarean Sections in A Secondary Health Facility in Cross River State, South-South Nigeria: A 5-Year Review

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Abstract

Background: *The number of Caesarean sections (CS) has been on the rise globally over the last decade. This study examined the pattern of caesarean section rate and indications for caesarean section at Sacred Heart Catholic Hospital, Obudu.*

Methods: *This was a five-year retrospective study of caesarean sections done from January 1st 2014 to December 31st 2018. Patients' details were identified from the theatre records and their case notes retrieved from the health information unit of the hospital. Information including socio-demographic data, indications and types of caesarean section performed were extracted from the folders. Data was collected using a structured proforma and entered into the computer. Data analysis was performed by means of IBM SPSS version 23. Results are presented in tables, means and simple percentages.*

Results: *There were 3444 deliveries over the studied years, out of which 993 were caesarean sections, giving a CS rate of 28.8%. The highest CS rate was recorded in year 2015 (33.7%) while 2016 reported the least (23.0%). Of the 993 patients that has caesarean section; only 978 folders with complete data were retrieved and analyzed. Majority of the patients (52.0%) who had CS were in the age group 20-29 years, with a mean maternal age of 28.58 ± 5.37 years. Of those who had CS (978), 27.3% and 40.7% were nulliparous and multiparous respectively while only 6.1% were grand multipara. About two-third (67.8%) of the women were booked. Failure to progress secondary to cephalopelvic disproportion (CPD) was the commonest indication for CS (20.4%), followed by previous CS and obstructed labour (13.6% and 8.2% respectively).*

Conclusion: *The CS rate in this study is relatively high. Efforts should be put in place to mitigate the rising trend.*

Keywords: *Caesarean Section, Cross River, Determinants, Obudu, Prevalence*

I. Introduction

Caesarean section is a major obstetric surgical procedure for saving lives of women and their newborns from pregnancy and childbirth related complications. It is the oldest surgical procedure in obstetric history[1]. Caesarean section is a surgical procedure that involves making incision on the anterior abdominal wall and the uterus in order to deliver fetus after the age of viability. The WHO recommended that caesarean section rate should not to be higher than 10-15%[2]. However, the number of Caesarean sections (CS) has been on the rise globally over the last decade[3].This may not be unconnected with the availability of safer caesarean section procedures, potent broad spectrum antibiotics, improved anaesthetic techniques and efficient blood transfusion services[4].Similarly, the fear of litigation, detection of fetal distress with the use of continuous electronic fetal monitoring, gradual loss of training in conduct of breech deliveries and use of instrumental deliveries especially forceps have lead to a rise in CS rate especially in the developing countries[5].

Even though caesarean section is relatively safe; it is not without its complications as it could result in significant and sometimes permanent maternal disabilities or even death especially if conducted in places that lack necessary facilities or trained personnel to conduct safe surgery and manage complications[4,6]. It is also associated with more maternal morbidity and mortality compare to vaginal delivery[6] hence, caesarean section should be performed when it is strictly indicated. While several studies have reported different caesarean section rates in Nigeria ranging between 19.3%[7]and 40.1%[8], others have determined indications for caesarean section. However, there has been no study in this part of the state to determine the rate and risk factors even though the facilities located in the region carry out the procedure on daily basis. Hence, this present study aims to determine the pattern of caesarean section rate over a 5-year period and also explore its indications.

II. Materials and Method

Sacred Heart Catholic Hospital, Obudu is a 235-bed faith based secondary health facility located in Cross River state, South-South Nigeria as at the time of this study. The maternity unit has a 44-bed capacity which includes four delivery beds. It has a maternity theatre attached to the labour ward for emergency caesarean sections and a twin theatre for elective procedures. It receives referrals from nearby hospitals and neighboring states and it is the only secondary health facility in the northern zone of Cross River State that offers some specialist maternal care services.

It was a retrospective study carried out on 978 women who had caesarean sections from January 1, 2014 to December 31, 2018. Medical records from both theatre and labour ward were examined. Socio-demographic and other information were obtained from the patients' case notes. Patients who ''Booked'' were those who had antenatal care in the facility or elsewhere while "unbooked" patients were those who never had antenatal care anywhere but presented on referral to the labour room or obstetric emergency unit. All the surgeries were carried out by a minimum of a senior registrar in Obstetrics and Gynaecology unit. These are resident doctors and consultants who come on monthly rotation from various tertiary health institutions including Jos University Teaching hospital, Jos, Dalhatu Araf Specialist Hospital, Lafia, and Federal Medical centre, Makurdi among others.

Data were fed into and analyzed using IBM SPSS version 23 software. Categorical variables were summarized using number and percentages and results presented in form of tables, means and percentages.

III. Results and Tables

Within the study period, 993 patients had caesarean section. However, 980 folders were retrieved out of which 2 had incomplete data. The total number of deliveries within the period was 3444 giving a caesarean section rate of 28.8%.

TABLE 1: Socio-demographic Variable Table Showing the Characteristics of Patients and Type of Caesarean Section

Maternal Age (years)		**Frequency**	**Percentage**
	<20	36	3.7
	20-29	509	52.0
	30-39	409	41.8
	40-49	24	2.5
	Total	**978**	**100.0**
[1]**Parity (P)**			
Nullipara	0	267	27.3
Primipara	1	253	25.9
Multipara	2-4	398	40.7
Grand multipara	≥5	60	6.1
Total		**978**	**100.0**
Booking Status			
	Booked	663	67.8
	Unbooked	315	32.2
	Total	**978**	**100.0**
Type of Caesarean Section			
	Elective	230	23.5
	Emergency	748	76.5
	Total	**978**	**100.0**

TABLE 1 shows the socio-demographic distribution of the women who had caesarean section during the study period. The mean age of the study subjects was 29.3 ± 5.03 years. About half (52.0%) of the patients were in the 20 - 29 age group. About two-thirds (67.8%) of the patients were booked. Multiparous women made up 40.7% while nulliparous women were 27.3%. A vast majority of the caesarean section (76.5%) were done as emergency.

TABLE 2: Pattern of Caesarean Section Rate

Years	**Number of CS**	**Number of deliveries**	**CS rate (%)**
[2]2014	172	642	26.8
2015	245	728	**33.7**
2016	175	762	**23.0**
2017	206	630	32.7
2018	195	682	28.6
Total	**993**	**3444**	**28.8**

TABLE 2 shows the pattern of caesarean section rates over the 5-year period. The highest rate was recorded in 2015 at 33.7% while 2016 recorded the lowest rate of 23.0%. The average caesarean section rate for the five years period was 28.8%.

Table 3: Indications for Caesarean Section

Indications	**Frequency**	**Percentage (%)**
Failure to progress/ Cephalopelvic disproportion	200	20.4
Previous CS		
Obstructed labour	133	13.6
Breech	80	8.2
Fetal distress	80	8.2
Prolonged labour	73	7.5

Placenta praevia	61	6.2
Twin gestation	51	5.2
leading breech	42	4.2
Preeclapsia/Eclampsia		
Fetal macrosomia	32	3.3
Abnormal lie (Transverse lie)	25	2.6
Abruptio Placenta with live baby	20	2.0
Failed Induction of labour	9	0.9
Others	2	0.2
Total	170	17.4
	978	**100.0**

The indications for caesarean section are presented in TABLE 3 above. The most common indication for caesarean section was failure to progress secondary to cephalopelvic disproportion in labour with 20.4% contribution; others were for previous caesarean section (13.6%), obstructed labour (8.2%), breech presentation (8.2%), and fetal distress (7.5%). Failed induction of labour and abruption placenta with life babies contributed the least at 0.2% and 0.9% respectively.

IV. Discussion

The highest CS rate was recorded in 2015 at 33.7% followed by 32.7% in 2017. Despite the fact that the highest number of delivery took place in year 2016, the year recorded the lowest CS rate (23.0%) within the 5-year period of study. It was also noted in this study that, the CS rate obtained in year 2018 (28.6%) was coincidentally a similar representation of the overall average CS rate (28.8%) within the 5-year period. The average CS rate of 28.8% obtained in this study is relatively higher than the WHO recommended rate[2] and rate obtained from previous study[7] done in the North Central part of Nigeria. However, it is relatively lower than the rates of 34.8%, 35.9% and 40.1% earlier recorded in Abakaliki[9], Osogbo[10] and Lagos[8] respectively. The fact that these cities are the state capitals which are expected to be densely populated could account for very high CS rates as compared to what was found in our study. The relatively higher rate (as compared to WHO recommended rate) obtained in this study could be as a result of the massive referral of complicated cases to our hospital which happens to be a major secondary health care facility in the area that has specialist obstetricians (a minimum of a senior registrar) available at all time. The caesarean section rate of 52.0% reported among women of age group 20-29 years in this study is similar to finding of 49.7% and 50.3% obtained in Mamah[9] and Adekanle[10] et al studies. This finding is not surprising as the women within this age group are in the peak of their reproductive career. A proportion of nulliparous women who had caesarean section in this study were 27.3% which is similar to 30.2% from previous study[10] but higher than 12.6% reported in Abakalik1[10].

The main indication for caesarean section in this study was failure to progress secondary to cephalpelvic disproportion which is consistent with findings from previous studies[7,8,9,11], while other studies[10,12] reported previous CS as the commonest indications for CS. This finding may not be unconnected with inadequate pelvic development from malnutrition which is common among women in the rural areas in the developing countries like Nigeria and a relatively higher proportion of teenage pregnancy which accounted for 3.7% in this study. Other indications that also contributed significantly in this study were previous CS, obstructed labour and breech presentation accounting for 13.6%, 8.2% and 8.2% respectively. About 17.4% of the indications are for other reasons other than the ones mentioned. These include those with multiple indications, surgery on maternal request , HIV with unknown viral load or those not on antiretroviral medications and those with unclear indications for the procedure.

About one-third (32.2%) of the patients were unbooked either in our facility or elsewhere and presented either on self referral or referred from neighboring facilities when they devloped complications in labour. This is consistent with findings reported from other study[7]. A vast majority (76.5%) of patients who had CS in this study were delivered by emergency CS. This is similar to 80.8% reported at Ladoke Akintola University of Technology Teaching Hospital, Osogbo [10].

V. Conclusion

The caesarean section rate in this study is relatively high. Attempts should be made to limit CS strictly to patients that meet obstetric indications for it and more doctors should be trained on conduct of breech delivery, external cephalic version and vaginal birth after caesarean section.

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