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# Trends in Elective Caesarean Section at the Jos University Teaching Hospital, Jos Nigeria

**Anyaka Charles<sup>\*</sup>, Ocheke Amaka, Shambe Iornum, Egbodo Christopher, Pam Victor, Karshima Jonathan, Daru Patrick**

Department of Obstetrics and Gynaecology, University of Jos/Jos University Teaching Hospital, Jos, Nigeria

## Email address:

[charlesanyaka@yahoo.com](mailto:charlesanyaka@yahoo.com) (Anyaka C.)

<sup>\*</sup>Corresponding author

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**Abstract:** *Context:* Elective caesarean sections have been considered safer for both mother and the foetus compared to emergency caesarean sections. Paradoxically emergency caesarean sections have continued to form majority of caesarean deliveries in our facility. *Objective:* The objective of this study was to determine the caesarean section rate, indications and trend associated with elective caesarean delivery. *Study design:* A retrospective study of the clinical records of all patients that had caesarean section between 1<sup>st</sup> January 2003 and 31<sup>st</sup> December 2007 at the Jos University Teaching Hospital, Jos. Data on the number and type of caesarean section and indication for the caesarean section was analysed using descriptive statistics. *Results:* During the 5 year study period, 2666 caesarean sections were performed out of 13,611 total deliveries giving a caesarean section rate of 19.6%. Elective and emergency caesarean sections accounted for 757 (28.4%) and 1909 (71.6%) of the cases respectively. The rate of elective caesarean section increased from 25.4% in 2003 to 26.5% in 2005 and 32.6% in 2007. Repeat caesarean section (24.7%), HIV in pregnancy (23.0%), bad obstetrics history (11.4%) were the leading indications for elective caesarean operation. *Conclusion:* The rising trend in the elective caesarean section rate as identified in this study strengthens the need for better patient selection together with improved counseling on its benefits and risks. This is because despite the fact that it is safer than emergency caesarean operation, it also has its own short-comings and complications.

**Keywords:** Caesarean Section, Elective, Emergency, Trends, JUTH

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## 1. Introduction

Caesarean section refers to the delivery of a foetus, placenta, and membranes through an abdominal and uterine incision after viability [1]. It is one of the most commonly performed surgical procedures in obstetrics and it is certainly one of the oldest operations in surgery [1]. Novel practises and modification in surgical skill and technique, infection prevention, antibiotic therapy, blood transfusion, and anaesthesia have minimised but not eliminated the risks associated with caesarean section [2, 3].

It can be performed as an emergency or elective procedure. Elective caesarean section is not urgent and may be planned at a time that is convenient for the patient, obstetrician, neonatologist and anaesthetist. Proper planning and decision

is taken prior to or during pregnancy to arrive at a date that is at term or very close to term. Emergency caesarean section on the other hand is performed during labour or delivery when there is danger to the mother, foetus or both [2, 3].

The indications for elective caesarean section are so numerous and keeps increasing with time. Documented indications for the elective procedure include placenta praevia, malpresentations, previous caesarean section for recurrent causes, hypertensive disorders of pregnancy, intrauterine growth restriction, contracted pelvis, elderly primigravidae and bad obstetrics history [2, 4]. HIV in pregnancy is also an indication for caesarean section which is performed in a bid to reduce vertical transmission of the virus to the foetus. Caesarean section on maternal request is now seen to be a contributor to the increasing indication for this procedure [5]. Caesarean section rates are thought to have

increased further worldwide due to maternal requests for planned caesarean section especially in private practice [6].

Caesarean delivery on maternal request (or "on demand") refers to a primary caesarean delivery performed because the mother requests this method of delivery in the absence of standard medical/obstetrical indications for avoiding vaginal birth. A woman's right to be actively involved in choosing the route of her delivery is now widely accepted by clinicians and patients [5, 7, 8].

Compared with a plan for vaginal delivery, caesarean delivery on maternal request may be associated with lower rates of haemorrhage, maternal incontinence, and rare but serious neonatal outcomes. However, caesarean delivery on maternal request is associated with a higher risk of neonatal respiratory morbidity [9].

The increase in caesarean section rates is largely driven by several factors which include societal demands for improved foetal outcome, protection of pelvic floor, and the aspiration of obstetricians to meet these demand [10].

Elective surgery has been judged to be better than emergency surgery [10, 11], more so the operation avails the patient the benefit of a team of an anaesthetist, neonatologist, obstetrician and the operating theatre staff [2]. Anaesthetic complications are more likely to occur in patients who need emergency caesarean section, and are administered general anaesthesia sooner than 4-6 hours after taking food and fluids [12].

The greater risk of adverse events following emergency caesarean delivery, indicate that at a certain level of risk of emergency caesarean delivery, a strategy of delivering all women by a planned procedure may actually carry a lower risk of adverse events directly attributable to surgery [10, 13].

Few publications on this subject as observed elsewhere informed this review in elective caesarean section and to report any emerging trend as a departure from the previously observed pattern of indications.

## 2. Aim and Objectives

To determine the caesarean section rate, the indications for elective caesarean section and to evaluate the trends in elective caesarean section.

## 3. Subjects and Methods

This was a retrospective analysis of 2666 consecutive caesarean sections performed at JUTH Jos Nigeria over 5 years (January 2003 to December 2007). The records from the labour ward, the operating theatre and the post natal wards were retrieved and checked for caesarean deliveries. The delivery records of patients that had elective caesarean sections were obtained and relevant variables extracted. The variables were age, parity, mode of delivery, the type of caesarean section and the indication(s) for the caesarean section. The data was analysed using simple percentages.

## 4. Results

There were 13,611 total deliveries in JUTH, Jos Nigeria during the period of which 2666 were caesarean sections giving a caesarean section rate of 19.6%. A total of 757 patients (28.4%) had elective caesarean section while 1909 patients (71.6%) had an emergency procedure.

*Table 1. Annual distribution of deliveries and C/S.*

Year	No of deliveries	Total C/S N (%)	Elective C/S N (%)	Emergency C/S N (%)	Ratio of elective to emergency C/S
2003	3010	507(16.8)	129(25.4)	378(74.6)	1:2.9
2004	2065	429(20.7)	112(26.1)	317(73.9)	1:2.8
2005	2417	430(8.5)	114(26.5)	316(73.5)	1:2.7
2006	2998	723(24.1)	214(29.6)	509(70.4)	1:2.4
2007	3121	577(18.5)	188(32.6)	389(67.4)	1:2.1

Table 1 shows the annual distribution of total, elective and emergency caesarean section. It also shows the ratio between elective to emergency caesarean section. It demonstrates a gradual increase in the rate of elective caesarean section increasing from 25.4% in 2003 to 32.6% in 2007. The ratio of elective to emergency caesarean section was 1:2.9 in 2003

and reduced to 1:2.1 in 2007.

Table 2 shows the indications for elective caesarean section. Repeat caesarean section for two or more previous caesarean section (24.7%) and HIV in pregnancy (23.0%) were the leading indications for elective caesarean delivery.

*Table 2. Indications for elective caesarean section.*

	2003	2004	2005	2006	2007	Total	%
≥ 2 previous C/S	48	27	28	47	37	187	24.7
HIV in pregnancy	9	16	31	70	48	174	23
Bad obstetric history	18	11	9	26	22	86	11.4
Abnormal presentation / lie	15	11	7	14	13	60	7.9
Placenta praevia	7	7	9	8	15	46	6.1
Hypertensive disorders of pregnancy	10	9	4	8	13	44	5.8
Multiple pregnancy	5	4	5	6	6	26	3.4
Previous myomectomy	0	5	5	6	8	24	3.2

	2003	2004	2005	2006	2007	Total	%
IUGR	0	1	0	1	1	3	0.4
Fetalmacrosomia	2	6	4	7	10	29	3.8
Medical disorders of pregnancy	3	4	1	2	2	12	1.6
Elderly primigravida	2	1	4	7	6	20	2.6
Others (vulva warts, cervical fibroids etc)	10	10	7	12	7	46	6.1
Total	129	112	114	214	188	757	100

## 5. Discussion

The caesarean section rate of 19.6% in this study falls within the range of 9.9-34.5% observed in Nigeria by previous authors. 9.9% in Sokoto [10], 11.8% in Maiduguri [14], 12.2% in Gombe [15], 27.6% in Enugu [11] and 34.5% in Eku [16]. However, the proportion of elective caesarean section (28.4%) relative to its emergency counterpart in the present study is much higher than 6.3-27.6% reported in most centres in the country. 6.3% was reported in Enugu [11], 21.8% in Sokoto [10], 26.7% in Eku [16] and 27.6% in Gombe [15]. This wide variation is not surprising as the incidence of caesarean section varies from region to region and from one country to another [3].

The study showed a gradual rise in the rate of elective caesarean sections with a decline in the emergency caesarean births. This same rising trend has also been reported globally [15-18]. Better patient selection, rise in repeat caesarean procedures, fear of litigation and HIV in pregnancy may be adduced for this finding [2, 14, 17]. Other reports elsewhere note two concurrent trends, an increase in the primary rate and a steep decline in the rate of vaginal birth after caesarean [17].

The commonest indication for elective caesarean section in this study was two or more previous caesarean sections. This finding is similar to previous studies in Jos [2], Kano [3], Sokoto [10], Enugu [11]. Usually, trial of vaginal delivery after one previous caesarean delivery is offered except where there are absolute contraindications to vaginal delivery. This is aimed at reducing the rate of caesarean section because repeat caesarean delivery is known to be a major contributor to the rising caesarean birth rate [18].

HIV in pregnancy was the second commonest indication in this study accounting for 23.0%. This finding is in agreement with the 21.7% found in Makurdi [19]. This may be explained by the high prevalence of HIV among women of reproductive age [20], with high prevalence seen in pregnant women in JUTH aged 20-29 having more than 4 fold increased risk of HIV [21]. This also accounts for the change in trend in indication for elective caesarean section with HIV a leading indication now for elective caesarean section in the period under study, a departure from previous finding in the centre [2].

Maternal request for caesarean section as indication for elective caesarean section without an accepted medical indication was not identified from this study. This is in keeping with findings by other authors [2, 22, 23] which may

be due to the documented aversion to caesarean section in Nigeria [24]. However a report from Enugu [18], shows that this represents 4.4% of elective caesarean sections. The incidence of caesarean delivery on maternal request and its contribution to the overall increase in the caesarean delivery rate are not well known, but it is estimated that 3% of all births in the United States are caesarean delivery on maternal request [9].

Elderly primigravida was seen as an indication for elective caesarean section in 2.6% of procedures in this study. This is at variance with earlier report from Jos [2] where it was not indicated but similar to reports from the study in Makurdi [19] and Enugu[18]. The observed findings that pregnancy in older nulliparous women are prone to complications, but when managed by caesarean delivery the overall perinatal outcome was good [25], may have influenced the rising trend in their inclusion for elective caesarean delivery.

Incomplete and inadequate information available in some patients' records were some of the limitations of this study.

## 6. Conclusion

The elective caesarean section rate from this study is higher compared to earlier reports from this centre however it is within the range of other reports within Nigeria.

Against the backdrop of a rising rate and an unfolding trend of this procedure with HIV in pregnancy now becoming a leading indication and elderly primigravida also seen unlike in previous reports, it is our duty to counsel patients properly about the risks involved in the procedure even though it is safer than emergency operations.

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