Original Research Article

WOMEN'S PREFERENCE FOR MODE OF DELIVERY AFTER A FIRST DELIVERY BY CAESAREAN SECTION AT A TERTIARY HOSPITAL IN PORT HARCOURT, NIGERIA

ABSTRACT

Background: The continuous increase in the rate of repeat caesarean sections after a first prior caesarean delivery is alarming. There is a decrease in the rate of vaginal birth after caesarean delivery (VBAC) and trial of labour after caesarean section (TOLAC) in women with a prior caesarean delivery. However, like other surgical operations, CS exposes the woman and the infant to immediate and long-term health risks, potentially affecting the course and outcome of subsequent pregnancies.

Aim: To determine women's preference for mode of delivery after a prior caesarean delivery and the reasons for their preferred choices.

Methodology: This was a cross-sectional study of 229 consenting pregnant women with one previous caesarean delivery attending antenatal clinic at the University of Port Harcourt Teaching Hospital (UPTH) from 1st March to 31st May, 2023. Structured interviewer administered questionnaires were used to collect information on participant's prior caesarean related birth experience, complications and current delivery desires. The data was analysed with SPSS version 25.

Results: The modal maternal and gestational age groups were 30-39years (66.5%) and 24-34weeks (48.5%). Approximately 58.9% were in their second pregnancy and 61.6% experienced labour pain in their previous caesarean delivery. Maternal and neonatal complications documented were wound infection and birth asphyxia respectively. Majority of the respondents (89.1%) had satisfactory overall birth experience. Of the 229 respondents, 82.1% preferred vaginal delivery in the index pregnancy due to the cost of caesarean section and innate desire to experience natural birth while 41(17.9%) of them preferred repeat caesarean delivery due to phobia for labour pain.

Conclusion: Majority of the women with prior caesarean delivery attending the antenatal clinic preferred TOLAC in subsequent pregnancies as against a repeat caesarean delivery. Women with a prior caesarean delivery should be adequately counselled during the antenatal period for possible TOLAC in the cases that meet the eligibility criteria in order to reduce the caesarean delivery rate.

Keywords*: Caesarean section, delivery mode, women's preferences, Port Harcourt*.

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1. INTRODUCTION

Caesarean section (CS) is one of the most common major surgical procedures performed for pregnant women. It is life-saving both for the mother and the new born when indicated [1,2].However, like other surgical operations, CS exposes the woman and the infant to relevant immediate and long-

term health risks, potentially affecting also the course and outcome of subsequent pregnancies [1]. The main obstetric complications associated with CS include but not limited to post-partum infection, uterine rupture, bladder injury, abnormal placentation, ectopic pregnancy, stillbirth, preterm birth and maternal death [1,3]. Furthermore, there is also increasing evidence that CS may alter the hormonal and micro-biological physiology of the infant, compromising the flora of the gut and increasing the risk of allergies by interfering with the development of the child's immune system. These alterations seem to have a role in the enhanced risk of asthma and also on childhood obesity later in life[4,5].

There is currently no proof, that elevated CS rates would translate into reduced maternal/child perinatal morbidity or mortality [1,6]. Since 1985, The World Health Organisation (WHO) has been advocating the maintenance of the CS rate not to be higher than 10–15% in any region of the world, although recent evidence suggests a cut off of 19% would be more reasonable [1,7]. Caesarean section has been increasingly overused almost everywhere in the past decades, becoming a pandemic phenomenon, with almost a third of women worldwide now delivering by CS [8]. An overall 29.7 million births (21.1% rate) occurred by CS in 2015 across the globe, almost doubling the corresponding rate of 2000 (12.1%), and an estimated 6.2 million CSs are performed in excess (without medical justification) worldwide each year[1,8].The primary CS (PCS) rate has become a main indication for the overall CS (OCS) rate, accounting for more than two thirds of all CSs in the USA. The first CS carries intrinsic risk of repeat CS (RCS) in future pregnancies due to the uterine scar, justifying the Cragin's dictum back in 1916 "once a cesarean always a cesarean". Repeat caesarean sections after a previous CS are significant contributors to the increase of OCS rate [9].

Trial of labour after CS (TOLAC) is a planned attempt to deliver vaginally for a woman with previous CS. This approach enables the opportunity to achieve a vaginal birth after CS (VBAC), a realistic option for some women with history of CS, which should be encouraged with the view of containing the number of unnecessary CS [1,10].Women have been discouraged from having VBAC for decades, until 2019 when recommendation was made for TOLAC and VBAC, due to the risk of rupture of the previously vertically incised large uterine muscle during contractions[11]. This risk increases with the number of previous CS. Transverse lower segment caesarean section has reduced this risk and allowed more women to ~~try~~ TOLAC. The TOLAC is now widely recommended in well selected and supported pregnant women with up to two transverse lower-segment CS [9,10]. Also, in addition to reduced medical expenditures, an adequate choice of TOLAC (in strict compliance with obstetric guidelines) instead of needless repeat caesarean section provides a number of advantages, like quicker recovery time after childbirth and a reduction of untoward maternal sequelae (hysterectomy, bowel/bladder injury, transfusion and placenta previa)[8,9].

Despite the evidence of safety and feasibility of TOLAC and the recognized health risks associated with repeatcaesarean section, the average rate of VBAC in the whole of Italy is still low (9–11%). Italy also has the highest CS rate (38.1%) among all European countries. Other European countries such as Sweden, Finland and the Netherlands reportedly have a 45–55% VBAC rate [12].The optimum mode of delivery for the woman who has had one previous caesarean section remains a controversial topic in obstetric practice, and is a subject for which clinical practice varies somewhat worldwide[13].

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Vaginal birth after caesarean section (VBAC) rates varies significantly from one country to another, ranging from 9.6%-52.2% in the developed world. In an era when general caesarean section (CS) rates are deemed to be disproportionately high at 25–50% in many countries and rising, it must be borne in mind that one of the largest contributions to such rates in a population arises from the cohort of women who have had one previous caesarean section. In approximately 28% of caesarean deliveries in the UK, and in 30–50% in the USA, a previous caesarean section has been cited as the primary indication[13,14].

Vaginal birth after caesarean section or elective repeat caesarean section (ERCS) are the options of delivery for a parturient who has had one previous caesarean delivery. In different ways both of these confer a degree of additional maternal and perinatal morbidity, and rarely mortality [9,10]. The risks of VBAC include increased risk to the mother of emergency caesarean section (failed VBAC), haemorrhage, transfusion, uterine rupture, and endometritis, and to the infant an increased risk of asphyxia or perinatal death[13,15]. The risks are lowest with successful VBAC but unfortunately none of the existing VBAC screening tools provide consistent ability to identify women who may achieve this. The risks of ERCS include surgical complications, placenta praevia, placenta accreta, risks associated with multiple caesareans and increased risk of hysterectomy[13]. For the infant neonatal respiratory morbidity, and putative long term childhood risks like asthma, obesity and neurological impairment, are associated with such delivery [4,5].

In the absence of reliable data from randomised trials it is difficult to make sensible conclusions regarding the benefits, or otherwise, of these changes, but the resulting increased caesarean section rates have raised many concerns [16]. The exact reasons for these recent trends are unclear, but multiple factors have contributed such as clinician views, patient preference, institutional protocols, national guidelines, litigation and the lack of good quality evidence to counsel patients reliably.

Caesarean section has also been associated with complications such as abnormal placentation, bladder injuries, uterine rupture, primary postpartum haemorrhage and maternal mortality. Despite these potential complications, there has been a surge in caesarean section in our environment occasioned by both doctors and sometimes patient's request especially after an initial unsatisfactory vaginal birth experience. This study was therefore geared towards finding reasons for women's preferred mode of delivery after a prior caesarean delivery and the factors influencing their decision.

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2. MATERIALS AND METHODS

This was a cross-sectional study of pregnant women with one previous caesarean section attending antenatal clinic in the University of Port Harcourt Teaching Hospital, Port Harcourt,Nigeria conducted between 1st March to 31st May 2023.

The study population consisted of 229 pregnant women with one previous caesarean delivery attending the antenatal clinic.

2.1 Inclusion and Exclusion criteria

2.1.1Inclusion criteria

Pregnant women with one previous caesarean delivery attending antenatal clinic at the University of Port Harcourt Teaching Hospital, irrespective of inter-pregnancy interval and outcome of previous caesarean delivery.

2.1.2Exclusion criteria

- Pregnant women with more than one previous caesarean delivery.
- Non-consenting women with one prior caesarean delivery.
- Pregnant women with one previous caesarean section and multiple gestation
- Pregnant women with malpresentation at term.

2.2Sample size determination and sampling technique

Sample size was calculated using the prevalence of women's preferences of child birth of 83.3% in a similar study in women with one previous caesarean delivery attending antenatal clinic in Lagos State University Teaching Hospital by Akinlusi et al [17].

The minimum sample size was determined using the formula;

$n = Z^2PQ/d^2$

Z = the normal standard deviation, usually set at 1.96, which corresponds to 95% confidence interval.

P = prevalence from the above study (83.3%).

Q = 1- P

d = Sampling error of 5%

$n = 1.96^2 \times 0.833 \times 0.167 / 0.05^2$

n = 214 (minimum sample size).

Additional 10% non-response rate was added to the sample size = 214 + 21.3 = 235.

Convenience sampling technique was used. The pregnant women who met the eligibility criteria were identified, counselled and enrolled into the study after obtaining an informed consent from them.

Data was obtained using a pre-tested structured interviewer administered questionnaire which was designed based on variables from existing literature before conducting the study.The questionnaire

was used to obtain information on the socio-demographic characteristics, child birth experience of the previous caesarean delivery, complications and current delivery desires.

Data analysis~~is was doneed~~ using Statistical Product and Service Solutions (SPSS) 25 version.

3. RESULTS

There were 235 questionnaires administered to the participants during the antenatal clinic. However, only 229 women responded to all the questions giving a response rate of 97.4%. The remaining 6 questionnaires were incompletely filled as respondents were unwilling to complete the interview.

The analysis of the demographic information in **Table 1** reveals that the majority of participants fell within the 30-39 age group, with 152 individuals representing 66.5% of the total. Those aged 20-29 constituted 59 (25.7%) of the participants, and the >40 age group included 18 respondents (7.8%). Regarding religion, Christians dominated the cohort with 211 respondents (92.2%), while Muslims accounted for 18(7.8%). In terms of education, a significant majority had tertiary education, 172(75.1%), followed by secondary education, 49 (21.4%), and primary education, 8(3.5%).

Table 2, which provided information on the Gestational age and Child Birth Experience**,** shows that the majority of participants had been pregnant twice, 135 (58.9%), with decreasing frequencies for higher gravidity. Gestational age was most commonly between 28-34 weeks, 111 (48.5%), with fewer cases <28 weeks, 80 (34.9%). A large majority had one child, 189 (82.5%). Regarding childbirth experience, 141 (61.6%) had experienced labour before caesarean section (C/S), and during C/S, the most common level of pain reported was moderate, 95 (41.5%).

Table 3, which looked at Complications During Child Birth, reveals that maternal complications during childbirth were reported in 18 (7.8%) of the cases, with the most common being wound infection (3.9%) and bleeding (2.6%). A significant majority (92.2%) did not experience any maternal complications. Neonatal complications were slightly more common, affecting 31 (13.5%) of the newborns,with birth asphyxia (8.3%) being the most frequent complication. Despite these complications, a large proportion (86.5%) of the births did not have any neonatal complication.

Table 4, where the Overall Experience and Preferred Mode of Delivery were measured**,** indicates that the majority (204, 89.1%) found their childbirth experience satisfactory. Most participants preferred vaginal delivery for their current pregnancy (188, 82.1%), with the main reasons being the desire for a natural process (24.5%), fear of pain associated with caesarean section (CS) (17.4%), and the cost of CS (40.2%). A smaller group opted for CS due to fear of labour (8.3%), poor previous experiences (5.2%), and fear of complications (4.5%).

Table 1: Demographic Information of Participants

Characteristics	Frequency (n)	Percent (%)
Age Interval (Years)		
20 -29	59	25.7
30 -39	152	66.5
>40	18	7.8
Religion		
Christianity	211	92.2
Muslim	18	7.8
Level Of Education		
Primary	8	3.5
Secondary	49	21.4
Tertiary	172	75.1

Table 2: Gestational age and Child Birth Experience

Characteristics	Frequency (n)	Percent (%)
Gravidity		
Two	135	58.9
Three	60	26.3
Four	19	8.3
> Four	15	6.5
Gestational Age		
<28wks	80	34.9
28-34wks	111	48.5
>34wk	38	16.6
No of Children		
One	189	82.5
Two	36	15.8
Three	3	1.3
>Three	1	0.4
Experienced Labour before C/S		
Yes	141	61.6
No	88	38.4
Experienced Pain During CS		
None	53	23.1
Mild	51	22.3
Moderate	95	41.5
Severe	30	13.1

Table 3: Complications During Child Birth

Characteristics	Frequency (n)	Percent (%)
Maternal Complication		
Yes	18	7.8
No	211	92.2
Type of Maternal Complication		
Wound infection	9	3.9
Bleeding	6	2.6
Others	3	1.3
None	211	92.2
Neonatal Complication		
Yes	31	13.5
No	198	86.5
Types of Neonatal Complications		
Birth asphyxia	19	8.3
Infection	5	2.2
Cerebral palsy	2	0.8
Death	5	2.2
None	198	86.5

Table 4: Overall Experience and Preferred Mode of Delivery

Characteristics	Frequency (n)	Percent (%)
Overall Experience		
Satisfactory	204	89.1
Unsatisfactory	25	10.9
Preferred Mode of Delivery in this Pregnancy		
Vaginal	188	82.1
Caesarean Section	41	17.9
Reasons for Choosing Vaginal Delivery		
Desired	56	24.5
Fear of pain with CS	40	17.4
Cost of CS	92	40.2
Reasons for Choosing CS		
Fear of ~~L~~labour	19	8.3
Poor ~~P~~previous experience	12	5.2
Fear of complications	10	4.5

4. DISCUSSION

This research on antenatal mothers explored the prior birth experience and maternal preference of mode of delivery after one previous caesarean delivery. Even though majority of the women (89.1%) had satisfactory birth experience in their previous caesarean delivery, most of the respondents (82.1%) preferred vaginal delivery, similar to the reportfrom Lagos [17].The proportion of respondents that had tertiary level of education was 75.1% which is similar to that reported by other researchers [10,17]. This may be due to the study location which is an urban area with high literacy rate. The study revealed that 22.3%, 41.5% and 13.1% of the respondents had mild, moderate and severe degree of pain intra-operatively during their previous caesarean delivery, which was also reportedby other studies [17,18]. This may contribute immensely to patient's aversion to caesarean delivery. Most of the caesarean sections are done under spinal anaesthesia which often provides adequate analgesia however, a small proportion of patients may experience pain intra-operatively [19]. This may be due to

inadequate dose of anaesthetic drug, making incision before adequate block of anaesthesia, misjudgement of dragging sensation for pain by patients, wearing off ~~of~~ the spinal anaesthesia during prolonged surgery and reluctance of the ~~anaesthestist~~anaesthetistto convert the spinal anaesthesia to general anaesthesia when spinal anaesthesia wears off towards the end of surgery. This may contribute to the rise in intra-operative pain sensation and patient's preference for vaginal delivery.

Approximately 7.8% of the respondents had maternal complications in their previous caesarean delivery. Majority had wound infection, 3.9% and 2.6% of them had postpartum haemorrhage. This is similar to what was reported from Lagos [17].Neonatal birth asphyxia accounted for 8.3% of neonatal complications while neonatal infection and death each accounted for 2.2% respectively. This is considerably low compared to the Lagos report [17]. The variation may be due to early intervention, differences in the availability of resources at the different health care facilities, proactivity by health care personnel in the management of labour and early presentation to managing centres. Maternal morbidity increases with the number of caesarean deliveries due to increased risk for placenta accretaspectrum, placenta praevia and uterine rupture [8,16].

Many of the women (82.1%) preferred vaginal delivery after a prior caesarean delivery and majority (40.2%) gave cost of caesarean delivery as the reason for choosing trial of labour while 24.5% desired to experience natural route of delivery. This is similar to report from Abakaliki[10].Approximately 17.9% of the respondents' preferred caesarean delivery and the reasons given for their choice was fear of labour pain in 8.3% of cases.Thus, Obstetricians need to factor maternal preferences in decision making on the mode of delivery.Favourable factors in thisregard include; a previous transverse lower segment caesarean delivery, non-recurring indication for the first caesarean section, previous vaginal delivery, inter-pregnancy interval of at least eighteen months and estimated foetal weight of less than 3.5kg [9,10,17].

Irrespective of maternal preference, most of the women may still not have a successful vaginal delivery. The conduct of vaginal birth after a prior caesarean section needs to be in a centre with functional theatre, blood banking services and neonatal care unit [19].Vaginal birth after a prior caesarean delivery is appropriate if the parturient meets the criteria, bearing in mind that it is fraught with several complications hence adequate intrapartum monitoring is essential.

5. CONCLUSION

This study revealed that most of the women preferred trial of labour after a prior caesarean delivery due to the cost implication of caesarean section. Also, most of them desired to experience vaginal delivery because it is a natural process of delivery.

Educating parturients about caesarean section and discussing their mode of delivery will enhance a better co-operation from those who do not meet the eligibility criteria for trial of labour after caesarean section.Women who had a prior caesarean delivery should be counselled during the antenatal period

for possible trial of labour and TOLAC done in the cases that meet the eligibility criteria. This will reduce the caesarean delivery rate.

Many of the respondents preferred vaginal delivery in the index pregnancy because of the cost of caesarean section. Therefore, cost of caesarean section in tertiary hospitals should be reviewed where possible.

ETHICAL APPROVAL AND CONSENT

The Ethics committee of the University of Port Harcourt Teaching Hospital gave approval for the study. An informed consent was also obtained from the participants before recruitment into the study.

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