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Factors Associated with Preference for Caesarean Section among Women in the Ante-Natal Clinic of a Tertiary Hospital in the Niger Delta, Nigeria. A Pilot Study

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Authors' contributions

THIS WORK WAS CARRIED OUT IN COLLABORATION BETWEEN ALL AUTHORS*. All authors contributed to the study concept and design. Authors EOA, JNO, AIO and JAO wrote the protocol, managed data collection, entry and analysis. Authors NCO and ECO managed the literature searches. Authors EOA, NCO and ECO wrote the first draft. All authors read and approved the final manuscript.*

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ABSTRACT

Aims: Preference for caesarean section for childbirth that could otherwise have been natural has led to a significant increase in the rate of caesarean sections in the world. This pilot study therefore, sought to determine the factors associated with preference for caesarean section among women receiving antenatal care in the University of Port Harcourt Teaching Hospital, Rivers State, Nigeria.
Study Design: A descriptive cross-sectional study.
Place and Duration of Study: Department of Obstetrics and Gynaecology, University of Port

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Harcourt Teaching Hospital, between January and February 2014.
Methodology: The pilot study was conducted among 256 pregnant women in the University of Port Harcourt Teaching Hospital. A pretested well-structured self-administered questionnaire was administered to all pregnant women in their third trimester that attended the antenatal clinic on the different days of the week and consented to be part of the study. Data was entered into an excel sheet and analysed using the Statistical Package for Social Sciences (SPSS) version 20.0.
Results: Respondents were aged between 18 and 44years. Two hundred and forty one (94.1%) of them were married, with 87(34%) and 75 (29.3%) of them being Business women (traders) and civil servants respectively. Of the respondents, 180 (70.3%) preferred vaginal delivery, 44(17.2%) did not mind if they had vaginal delivery or caesarean section while 32 (12.5%) would prefer a caesarean section. The major factors that influenced preference for caesarean section in this study were doctors' advice 13(40.6%), previous caesarean section 8(25%), safety for both mother and child 3(9.4%), fear of labour pains 3(9.4%) and previous bad birth experience 3(9.4%). In addition, those who had had a previous vaginal delivery wanted a repeat vaginal delivery (77.5%) and those who had had a previous CS wanted it again (54.2%) (P <0.05).
Conclusion: Our pilot study has shown that women's preferences are unlikely to be the most significant factor driving the high caesarean section rates in the Niger Delta region, Nigeria.

Keywords: Caesarean section; preference; antenatal clinic; delivery rate.

1. INTRODUCTION

Caesarean section is a surgical procedure in which an incision is made through a mother's abdomen and uterus to deliver one or more babies, or rarely, to remove a dead fetus [1]. A caesarean section is one of the most frequently performed operations in women, usually when a vaginal delivery would put the baby's or mother's life or health at risk. In recent times it has also been performed upon request for childbirth that could otherwise have been natural, leading to a significant increase in the rate of caesarean sections and making it a major public health problem because it increases the health risk for mothers and babies as well as the cost of health care compared with normal deliveries. The cause of this rising rate of caesarean section has been difficult to identify [2-4]. In Nigeria, the incidence of caesarean section varies from one region to the other with values that range from 12% - 49% [5-13].

The following interconnected factors appear to contribute to the high caesarean rate: low priority of enhancing women's own abilities to give birth, side effects of common labour interventions, refusal to offer the informed choice of vaginal birth, casual attitudes about surgery and variation in professional practice style, limited awareness of harm more likely with caesarean section, and incentives to practice in a manner that is efficient for providers. All of these factors contribute to a current caesarean section rate of over 30%, despite evidence that a rate of 5% to 10% would be optimal [14].

Childbirth Connection's National Listening to Mothers survey of women who gave birth in hospitals from mid-2011 to mid-2012 found that only 1% of mothers reported that they had a planned caesarean section knowing that there was no medical reason for it. However, a change in practice standards reflects an increasing willingness on the part of professionals to follow the caesarean path under all conditions. In fact, one quarter of the Listening to Mothers survey participants who had caesarean sections reported that they had experienced pressure from a health professional to have a caesarean section [14]. A study done in Sweden (2001) to describe the prevalence of women's preference for caesarean section and reasons for the preference, found that 7.0% of women in late pregnancy had preference for caesarean section while by one year post-partum, 9.8% of them stated that they would prefer a caesarean section if they were to have another baby. This was related to their birth experience and there were more multiparous women who wished for a caesarean section [14,15].

A cross-sectional study in India (2011) was undertaken with an objective to determine the level of knowledge, attitude, and perception about caesarean section among pregnant women. Women preferring caesarean birth were multiparous, and were more likely to have had a previous caesarean delivery, but there were otherwise no differences in age, parity, income, or education [16]. A similar study done in Rivers State at the University of Port Harcourt Teaching Hospital on the attitude of antenatal patients

towards caesarean section among 400 antenatal clients in 2009 showed increasing maternal level of education and age were associated with increased knowledge and support for caesarean section [17].

Contrary to the widely reported aversion to caesarean section in the West African sub-region, Maternal Demand for Caesarean Section (MDCS) seems to be on the increase, and there is little evidence to explain this trend [18]. A study on MDCS done at Agbongbon/Orayan (primary health care centre) Ibadan, Adeoyo Maternity Hospital (secondary health centre) Ibadan and University College Hospital, Ibadan (tertiary health centre), (2012) representing the three different levels of health care in Nigeria, showed that respondents at the tertiary health centre were significantly more likely to request caesarean section and to favour a woman's right of autonomy to choose her mode of delivery. Fear of labour pains (68.9%) was the major influence on MDCS, as well as fear of poor labour outcome (60.1%), doctors' influence (30.8%), friends' influence (24.3%), fear of faecal (20.2%) and urinary incontinence (16.8%) [18].

Another study done in Ebonyi State University Teaching Hospital Nigeria (2011) showed that caesarean section was still perceived as an abnormal means of delivery by many women. Only 4 (1.4%) of the women viewed caesarean section as very good and elected to undergo a caesarean section [19]. A study done in the University of Benin, Benin City, Nigeria (2007) on the perceptions and attitudes of pregnant women towards caesarean section in urban Nigeria among 413 antenatal clients showed that the women had good knowledge of caesarean section; however, only 6.1% were willing to accept caesarean section as a method of delivery, while 81% would accept caesarean section if needed to save their lives and that of their babies [20].

The factors that influence women's preferences for mode of delivery are difficult to assess, as they are influenced by culture, knowledge of risk and benefits, and personal and social factors, hence understanding the factors leading to increased caesarean delivery would help develop and implement safe and successful approaches to reduce needless obstetric mediations in childbirth and come up with guidelines to address misconceptions about childbirth, encourage normal vaginal birth, as well as improve the delivery of care provided by health professionals. This is of great concern as caesarean deliveries increase the risk of neonatal morbidity and mortality and maternal morbidity, compared with spontaneous vaginal delivery [21,22,23,24]. The objective of this study therefore, was to determine the factors associated with preference for caesarean section, assess the relationship between preference for caesarean section and socio demographic characteristics, as well as ascertain how previous birth experience affects attitude towards caesarean section among women receiving antenatal care in University of Port Harcourt Teaching Hospital, Rivers State, Nigeria.

2. METHODOLOGY

2.1 Study Area

This study was carried out at the department of Obstetrics and Gynaecology in the University of Port Harcourt Teaching Hospital (UPTH) Nigeria, located in Obio-Akpor Local Government Area of Port Harcourt, Rivers State. The local government area has a total land mass of approximately 311.71km^2 and at the 2006 census had a population of 464,789 [25]. It is mainly constituted by the people of Ikwerre ethnic nationality. The antenatal clinic runs from Monday through Friday (7am – 4pm).

2.2 Study Population

The study included pregnant women who had attended a minimum of 3 antenatal visits and those in their third trimester.

2.3 Study Design and Sample Size Determination

It was a descriptive cross-sectional study. A sample size of 256 pregnant women in their third trimester in UPTH was used. A prevalence rate of 16.6% was used [26] and margin of sampling error tolerated was set at 5% at 95% confidence Interval and a non-response rate of 10%.

2.4 Sampling Method

This involved, going to the study area every day of the week, just after the health talks by the nurses. All the pregnant women in their third trimester who attended antenatal clinic on the different days of the week and consented were given the questionnaire to complete. This was

done until the required sample size was achieved.

2.5 Study Instrument

A structured self-administered questionnaire was used to collect data from the pregnant women. The questionnaires consisted of four sections. A consisted of the socio-demographic characteristics; B consisted of questions on past obstetric history; C consisted of questions on the index pregnancy and D consisted of questions on attitude towards caesarean section. The drafted questionnaire was pretested on 30 women in a public primary health centre to validate it.

2.6 Data Analysis

Data collected was collated and entered into a Microsoft Excel spread sheet and analysed using the Statistical Package for Social Sciences (SPSS) version 20.0. Descriptive and inferential statistical analyses were employed and data was summarized using graphic presentations for the interpretation of findings. The Chi-square test was used to assess the significance of the data with P-values of less than 0.05 considered significant.

3. RESULTS

A total of 256 questionnaires were distributed among third trimester pregnant women in the ante-natal clinic of the University of Port Harcourt Teaching Hospital. They were all appropriately filled and returned, giving a response rate of 100%.

3.1 Socio-Demographic Data

Thirty six of the respondents (14%) were between age 18 and 25years, 100(39%) between 26 and 30 years, 77(30%) between 31 and 35 years, 34 (13.3%) between 36 and 40 years while 9 (3.6%) of them were between 41 and 44 years. About 241(94.1%) of them were married, 13(5.1%) were single and 2(0.8%) were separated. Two hundred and fifty (97.7%) of the women were Christians while 6 (2.3%) of them were Muslims with 87(34%) Business women (traders), 75 (29.3%) civil servants, 39 (15.2%) students and 23 (9%) house wives, (Table 1).

Table 1. Socio-demographic characteristics of respondents

Demographic variables	Category	Frequency (256)	Percentage (100%)
Age (years)	18- 25	36	14
	26-30	100	39
	31-35	77	30
	36-40	34	13.3
	41-43	9	3.6
Marital status	Married	241	94.1
	Single	13	5.1
	Separated	2	0.8
Level of education	Primary	4	1.6
	Secondary	62	24.2
	Tertiary	186	72.7
	Non-formal education	4	1.6
Religion	Christian	250	97.7
	Muslim	6	2.3
Occupation	Business woman	88	34.4
	Civil servant	76	29.6
	Student	40	15.6
	Housewife	24	9.4
	Accountant/Banker	7	2.7
	Health worker	5	2.0
	Youth Corper	3	1.2
	Engineer	4	1.6
	Estate surveyor	2	0.8
	Lawyer	3	1.2
	Pastor	2	0.8
	Private teacher	2	0.8

3.2 Past Obstetric History of Respondents

Of the 256 (100%) respondents, 174 (68%) were multigravidae while 82 (32%) were primigravidae. Fifty-eight (84.1%) of these women who had had a previous caesarean section were satisfied with it while 11(15.9%) were not satisfied either because they lost their babies at the end or they did not like caesarean section (Table 2).

3.3 Preferred Type of Delivery

Of the 256 respondents, 180(70.3%) preferred vaginal delivery, 44(17.2%) did not mind if they had vaginal delivery or caesarean section (CS) while 32(12.5%) would prefer a caesarean section (Fig. 1). Thirteen (40.6%) of the women preferred CS because of their doctor's advice and 3 (9.4%) for fear of labour pains *(P=.05*) (Table 3).

3.4 Factors that Influence Preference for Caesarean Section

There was a significant relationship between the respondents' age and their choice of Caesarean Section (CS) (*P* = .05) as those aged between 31 and 35 years (31.2%) preferred CS as a mode of delivery. There was also a significant relationship between marital status and preference for CS (*P* = .05) as all those living separately from their

Table 2. Past obstetric history

Previous pregnancy variable	Category	Frequency (256)	Percentage (100%)
Pregnancy status	Primigravidae	82	32
	Multigravidae	174	68
Previous pregnancy(ies)	1	65	37.4
	2	57	32.8
	3	38	21.8
	4	9	5.2
	5	4	2.3
	6	1	0.6
Previous type of delivery(ies)	Vaginal	105	60.3
	Caesarean	45	25.8
	Both	24	13.8
Reason for caesarean section	Elective (personal choice)	10	14.5
	Previous CS	10	14.5
	Abnormal presentation	8	11.5
	Big baby	6	8.7
	Obstructed labour	10	14.5
	Prolonged labour	13	18.8
	High blood pressure	8	11.5
	Fetal distress	2	2.9
	PROM	2	2.9
Were you satisfied with the CS	Yes	58	84.1
	No	11	15.9
Place of last delivery	UPTH	107	61.5
	Private clinic	35	20.1
	Health centre	11	6.3
	Maternity home	10	5.7
	At home	1	0.6
	BMH	7	4
	UCTH	2	1.1
	Abroad	1	0.6
Complications after delivery	Vaginal tear	35	33.3
	Haemorrhage	12	11.4
	Vesicovaginal fistula	4	3.8
	Wound breakdown	1	0.9
	Hypertension	1	0.9
	Vaginal tear and haemorrhage	1	0.9
	No Complication	51	48.6

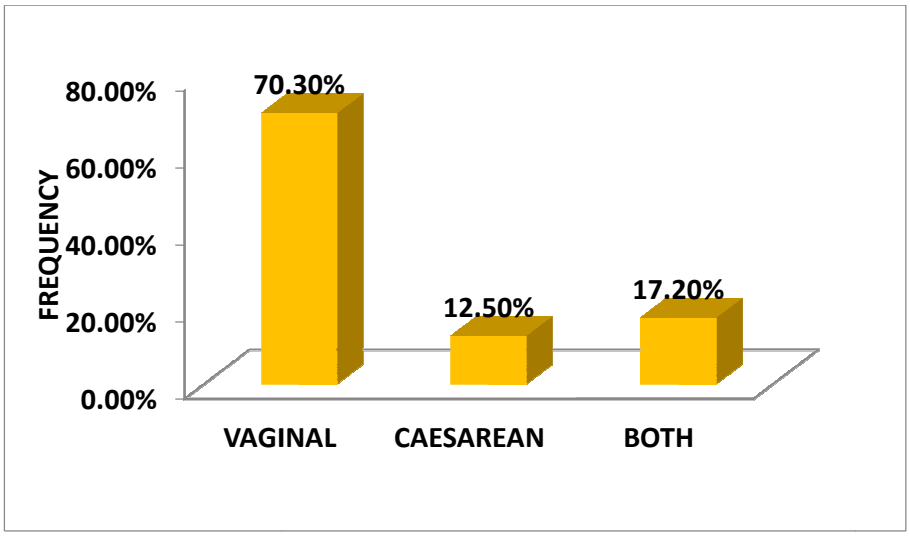

Fig. 1. Preferred type of delivery

Table 3. Respondents' reasons for preferring a caesarean section

Reasons for caesarean section	Frequency 32	Percentage (100 %)
Doctor's advice	13	40.6
Previous Caesarean Section	8	25
Fear of labour pain	3	9.4
Safer for mother and child	3	9.4
Previous bad birth experience	3	9.4
More satisfactory	2	6.2

husbands 2 (4.2%) did not mind either type of delivery while 30 (93.8%) of those who preferred CS were married and the remaining 2 (6.2%) were single. Additionally, the respondents' level of education was significant (*P* = .05) as 30 (93.8%) of respondents with tertiary level of education preferred CS while none of the respondents with primary level of education had such preference (Table 4). With respect to previous deliveries, there was a significant relationship between complications that arose and preference for CS (*P* = .05) as women who had complications from previous CS preferred a vaginal delivery while those that had complications from previous vaginal delivery preferred a CS. Furthermore, there was a significant relationship between previous type of delivery of respondents and their preferred choice of delivery for current pregnancy (*P* = .05). Those who had had a previous vaginal delivery wanted a vaginal delivery (77.7%) and those who had had a previous CS wanted it again (53%)(Table 5).

4. DISCUSSION

Our pilot study showed that majority of the women preferred vaginal delivery (70.3%) while 17.2% did not mind either mode of delivery. These findings are similar to those of a Ghanaian Teaching Hospital study done in 2008, among women attending the hospital's antenatal clinic in which about 93% of women preferred vaginal delivery [26]. However, this study is not in accordance with a study done by Israel et al. [17] on the attitude of antenatal patients towards caesarean section, which showed that 68.5% favoured caesarean section while 31.5% were averse to it. From this study, 32 (12.5%) of the respondents had a preference for Caesarean Section which is similar to the finding of Bukar et al. where 11% requested it [27]. However**,** this does not agree with findings in a study to ascertain the attitude to caesarean section amongst antenatal clients in Ibadan, which found that only 4% of the respondents said they would request a CS for non-medical reasons [28].

Table 4. Factors that influence preference for caesarean section

Socio-demographic characteristics	Respondents preference for delivery method 256(100%)			Test of significance	
	Vaginal delivery	CS	Both	X^2 Value	P Value
	180(70.3%)	32(12.5%)	44(17.2%)		
Age(years)					
18-25	25(13.9)	4(12.5)	7(15.9)	20.326	0.009
26-30	80(44.4)	8(25)	12(27.3)		
31-35	56(31.1)	10(31.2)	11(25)		
36-40	16(9)	7(22)	11(25)		
41-45	3(1.6)	3(9.3)	3(6.8)		
Marital status					
Married	169(93.9)	30(93.8)	42(95.5)	12.345	.015
Separated	0(0)	0(0)	2(4.2)		
Single	11(6.1)	2(6.2)	0(0)		
Level of education					
Primary	6(3.3)	0(0)	0(0)		
Secondary	54(30)	2(6.3)	7(15.9)	14.985	0.02
Tertiary	117(65)	30(93.7)	36(81.8)		
Non formal	3(1.7)	0	1(2.3)		

Table 5. Influence of previous birth experience on preference for caesarean section

Previous birth experience	Respondents choice of delivery method			Test of significance	
	Caesarean section	Vaginal delivery	Both	x^2value	p value
	32(12.5%)	180(70.3%)	44(17.2%)		
Vaginal delivery	5(15.6)	140(77.7)	12(27.3)	48.900	0.000
Caesarean section	17(53)	30(16.7)	18(40.9)		
Both	10(31.4)	10(5.6)	14(31.8)		
No complication	*23(71.9)	144(80)	35(79.5)	30.337	0.002
Perineal tear/episiotomy	4(12.5)	28(15.6)	4(9.1)		
Haemorrhage	2(6.3)	7(3.9)	3(6.8)		
Vesico vaginal fistula	2(6.3)	0(0.0)	1(2.3)		
Wound break down	3(9.4)	1(0.5)	0(0)		

** Two patients had more than one previous birth experience*

The major factors that influenced preference for caesarean section in this study were doctor's advice 13(40.6%), previous caesarean section 8(25%), safety for both mother and child 3(9.4%), fear of labour pain 3(9.4%) and previous bad birth experience 3(9.4%). This agrees with the findings of a study done in Sweden by Karlstrom et al (2001) where previous caesarean sections, a previous negative birth experience, childbirth-related fear and caesarean section as a safe option were strong predictors for preference of caesarean section [16]. However, in a study done in Argentina by Liu et al. [21], pain associated with vaginal delivery was viewed positively. Among the respondents who had a preference for caesarean section, the commonest reason given for this preference was their doctor's advice 13 (40.6%). This differs from the findings of the study in North-east Nigeria that found avoidance of labour pain as the commonest reason for this preference [27].

This study showed that there was a significant relationship between age, marital status and level of education with preference for caesarean section (P<0.05). Increasing maternal level of education and age were associated with increased knowledge and support for caesarean section, and this is in accordance with a study done by Israel et al. [17]. However, this does not agree with the findings of Torloni et al. [29] that showed youth, nulliparity and lower education as

the factors associated with a higher preference for caesarean delivery.

The findings of this study reveal that previous experiences of childbirth seemed to influence women's preferences about their modes of delivery. Forty-five (25.8%) of those who had given birth had only a caesarean section, and it was discovered that a history of previous caesarean section had a significant relationship with current preference for caesarean delivery (P<0.05). Another factor contributing to their decision to have another caesarean section may be attributed to their experience being satisfactory (83.8%). This supports the findings of a study done in India by Ajeet et al. [16,17].

5. CONCLUSION

The preference for caesarean section in our pilot study was low as it did not exceed the WHO recommended value of not more than 15%. In addition, majority of women preferred vaginal delivery. Thus, our pilot study has shown that women's preferences are unlikely to be the most significant factor driving the high caesarean rates in the Niger Delta region, Nigeria. Obstetricians should abide by ethics in clinical practice and carefully evaluate the indication in every caesarean section and take an unbiased decision before performing caesarean sections. Goals for achieving an optimal caesarean delivery rate should be based on maximizing the best possible maternal and neonatal outcomes, taking into account available medical and health resources and maternal preferences.

CONSENT AND ETHICAL APPROVAL

Permission to carry out the study was obtained from the Ethical Review Board of the University of Port Harcourt Teaching Hospital and from the Head of the Obstetrics and Gynaecology Department. Informed consent was obtained from the participants and prior to administering the questionnaires; the objectives of the study were clearly explained to the participants. Confidentiality and anonymity was ensured throughout the execution of the study, as participants were not required to disclose personal information on the questionnaire.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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