

Maternal demand for cesarean section: perception and willingness to request by Nigerian antenatal clients

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Background: Contrary to the widely reported aversion to cesarean section in the West African subregion, maternal demand for cesarean section (MDCS) seems to be on the increase, and there is little evidence to explain this trend. The purpose of this study was to determine the perception and attitudes of Nigerian antenatal clients towards MDCS, their willingness to request MDCS, and the relationship between willingness to request MDCS and sociodemographic characteristics.

Methods: A cross-sectional survey was undertaken among 843 antenatal clients at Agbongbon/Orayan primary health care centers (PHCs), Adeoyo Maternity Hospital (SHC), and UCH Ibadan (THC), representing the three different levels of health care in Nigeria, ie, primary, secondary, and tertiary.

Results: The proportion of women aware of MDCS was 39.6%. Predictors of awareness were education and type of health facility. Women from THC and those with tertiary education and above were more likely to be aware of MDCS than others ($P = 0.001$). Doctors were major sources of information on MDCS (30.8%) as well as friends (24.3%). Common reasons reported for MDCS were fear of labor pains (68.9%), and fear of poor labor outcome (60.1%), and fear of fecal (20.2%) and urinary incontinence (16.8%). More women from the THC than other facilities believed that requests for MDCS should be granted ($P < 0.001$). However, willingness to request MDCS was low (6.6%). More than 50% of those willing to request MDCS would likely be criticized, mainly by their husbands. On multiple logistic regression, respondents at the THC were significantly more likely than those at the SHC or the PHCs to request cesarean section and to favor a woman's right of autonomy to choose her mode of delivery.

Conclusion: The decision for MDCS is a difficult one, because willingness is low and criticism by partners of those who choose MDCS is high. Provision of epidural anesthesia and improved safety of vaginal delivery is recommended. This may prevent Nigerian women from making a difficult choice for MDCS based on fear of pain and poor labor outcome. The role of the male partner should be taken into consideration in order to make sustainable policies or guidelines for MDCS in developing countries.

Keywords: maternal demand cesarean section, perception, antenatal, clients, Nigeria

Introduction

There has been a global rise in cesarean section rates since the 1970s, especially in developed countries,¹⁻³ mainly due to rising levels of primary cesarean rates and increasing maternal request cesareans. The trend of maternal demand for cesareans (MDCS) has also been noted recently in the West African subregion.^{4,5} This is against the backdrop of high aversion to cesarean sections and lower cesarean section rates.^{2,6,7} In addition, women in this region who have had previous cesarean delivery reportedly

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have poor self-esteem and cesarean sections are sometimes refused in emergency situations.^{8,9} It is thus an irony that MDCS is reported in this region. In developed countries, while fear of birth, increasing maternal age at marriage and first pregnancy, fear of pelvic floor damage, and genital prolapse in later years are implicated reasons, in developing countries, the view that cesarean section is the surest way to a live birth is believed to be a critical factor underlying their choice.⁴

MDCS is defined as primary cesarean section without any medical indication. Other authors describe it as medically unnecessary cesarean section performed on request by the pregnant patient, irrespective of whether it is a primary cesarean section or a repeat cesarean section. The incidence of MDCS is difficult to determine and this is because of differences in the nomenclature used to refer to MDCS, and its poor documentation as an indication.¹⁰ In developed countries, conservative estimates of cesarean delivery on maternal request range from 4% to 18% of all cesarean deliveries.¹

MDCS requires the performance of an operation on an expectant mother without a medical reason, with its attendant complications. The decision whether to accept or refuse a request for MDCS presents a moral and ethical dilemma for the obstetrician in choosing between the patient's right to an autonomous decision and the care giver's right to operate in accordance with accepted medical practice.¹¹ If women are indeed choosing cesarean over vaginal delivery in the absence of any recognized indication, how should their requests be managed in this circumstance? This is important now that the philosophy of maternity care tends towards being client-centered, especially following the Winterton and Cumberlege reports.^{12,13}

It is argued that vaginal delivery, which is considered the preferred alternative by the ethics of medical practice, is not without risks. So far, there are no randomized controlled trials as yet showing superiority of planned vaginal delivery over planned cesarean section to inform an evidence-based choice.¹ Normal vaginal deliveries and even more so instrumental deliveries, can cause birth trauma, facial bone fractures and intraventricular hemorrhage. Cesarean section on the other hand, which is traditionally considered a life-saving procedure, is believed to be associated with less blood loss¹ and to protect against pelvic floor damage^{1,14-17} when done electively. However, it is believed to be associated with a higher risk of anesthetic complications, placenta previa, and neonatal respiratory complications.¹

There is a paucity of data showing why African women, who would normally link vaginal delivery with successful

womanhood, prefer to request cesarean section when vaginal delivery can be achieved. The first study on MDCS published from Nigeria and West Africa was conducted amongst south-eastern Nigerian women requesting MDCS between 2003 and 2006.⁴ In that study, 4.4% of all MDCS deliveries were due to maternal request. The majority of the women had tertiary education, and common reasons for their request were previous infertility and advanced maternal age. None of them had any regrets about their choice of MDCS. However, having had a successful live birth, the majority (85.2%) said they would like to experience vaginal delivery in their next pregnancy in order to feel like "a real woman", further confirming the already known preference for vaginal delivery by African women. This study showed that the belief that cesarean section is the way to ensure a live birth was a critical factor in making the choice for cesarean section. In a follow-up study to determine women's opinions on MDCS, prolonged infertility, repeated pregnancy losses, and advanced maternal age at first pregnancy were common reasons.⁵

Because of the ethnic and cultural diversity in Nigeria, perception of MDCS among south-western Nigerian women may differ from that of south-eastern Nigerian women, which was the setting of the previous studies and indeed may differ from women of other geopolitical zones in Nigeria. This study is the first to be undertaken among south-western Nigerian women. In addition, the previous studies focused on women at two levels of the health care system, ie, tertiary and secondary. We decided to perform this study in all three levels of the health care service in Nigeria in order to understand better the dynamics of autonomy within each level of care. Furthermore, being an emerging area, information from the study in combination with previous studies will clarify gray zones as to the magnitude of MDCS in Africa and provide insight into women's expectations of MDCS requests in a poor resource setting like ours.

Materials and methods

A cross-sectional survey of 843 women was conducted between November 1, 2008, and February 28, 2009, in Ibadan, south-western Nigeria, at the antenatal clinics of three health facilities. The health facilities were purposively selected to represent the three different levels of health care in Nigeria, ie, tertiary, secondary and primary. University College Hospital, Ibadan, was selected as the tertiary health care (THC) center. It is an 850-bed institution serving as a referral center for secondary and primary health care centers in Ibadan and environs. It also serves as a referral center for other tertiary health care facilities across Nigeria. It is the

only tertiary institution in the Ibadan study area. Adeoyo Maternity Hospital was selected as the secondary health care center (SHC), being the largest one in this region. From a framework of primary health care centers in Ibadan, those with antenatal attendance rates of at least 1500 per year were listed to approximate the attendance rates of the THC and SHC and ensure a sizeable population of women was obtained. This narrowed down the list to five primary health care centers (PHCs), from which two were randomly selected, ie, Oranyan and Agbongbon PHCs. Ibadan town, where the study was conducted, is the capital city of Oyo state and the former administrative capital of the old western region of Nigeria. The population mix is urban and is representative of Ibadan, which is an urban metropolis.

Study instrument

A 33-item questionnaire was generated from previous surveys, publications, and review articles on MDCS. It consisted of two sections, ie, section A, containing questions on socio-demographic characteristics, such as age, religion, level of education, occupation and relevant obstetric history such as parity, mode of previous delivery and gestational age at booking; while section B contained questions addressing awareness of MDCS, sources of information on MDCS, perceived reasons for MDCS, granting requests for MDCS and willingness to request MDCS. The questionnaires were translated into the three major Nigerian languages, back translated to ensure accuracy and validated by administering it to about 30 antenatal attendees in facilities not participating in the main study. Cronbach's alpha was computed for reliability of the instrument.

Conduct of study

Nine trained research assistants were employed, three for each level of health care facility. Ethical approval for the study was obtained from the University of Ibadan/University College Hospital Health Research Ethics Committee. At the respective antenatal clinics where women waited before their consultation, the research assistant obtained informed consent after explaining the purpose of the study. The intending participants were encouraged to seek clarification where necessary and willing participants signed the informed consent form. Self-administered questionnaires were then distributed. For participants who could not read or write, the items in the questionnaire were read out to them in the language they understood best and their responses were recorded in the relevant sections of the questionnaire by the research assistants. The number of women studied

at each level was determined using proportional allocation based on yearly antenatal attendance rates. Eventually, 257 respondents were recruited from the THC, 295 from the SHC, and 291 from the PHCs.

Data collection and analysis

Data were entered and analyzed using SPSS version 15 (SPSS Inc, Chicago, IL). Summary statistics such as means and proportions were reported. The Chi-square test was used for significance of the association between categorical variables. Multiple logistic regression analysis was carried out separately for two dependent variables, ie, willingness to request cesarean section if not indicated and favoring the view that a woman has the right to choose mode of delivery. The forward selection procedure was used, which is a step-wise selection method entering variables based on the significance of the score statistic and removing them based on the probability of the likelihood ratio statistic which is based on maximum partial likelihood estimates. For each dependent variable, hospital type and other independent variables which were significant at 5% on the Chi-square tests were entered into the logistic models. Statistical significance was set at the 95% confidence level.

Results

The mean (\pm standard deviation) age of the antenatal clients was 28.2 ± 5.8 years, with the majority (35.6%) of the respondents aged 25–30 years. Seventy-five percent of the respondents had at least secondary education, making the study population a literate one, with a significantly ($P \leq 0.001$) higher proportion of women having tertiary education (84.5%) in the THC than in the SHC (28.5%) and PHCs (4.9%). Occupational distribution showed that they were predominantly traders (48%), with a significantly higher number of traders in the PHCs (64.1%) and SHC (55.5%) than the THC (24%), while there was a significantly ($P < 0.001$) higher number of professionals in the THC (54.4%) than the SHC (32.8%) and the PHCs (10.2%). The majority were Muslims (58.5%) and of the Yoruba ethnic group (92.6%). There were significantly higher proportions of Muslims at the PHCs (81.5%) and higher proportions of Christians (70%) in the THC than other centers ($P < 0.001$). Significantly higher proportions of the study population had had no previous cesarean section or stillbirths ($P < 0.001$), and were nulliparous ($P = 0.012$, see Table 1).

The proportion of respondents aware that women request cesarean section without medical reasons was 39.6%. Awareness was significantly associated with type of health

Table 1 Comparison of sociodemographic characteristics of women studied by facility

Variable	Frequency	%	UCH, n (SD)	Adeoyo, n (SD)	PHC, n (SD)	Chi square (P value)
Age (years)						
<25	196	23.3	11 (4.4)	78 (26.5)	107 (36.8)	108.181 (<0.001)
25–29	300	35.6	85 (34.3)	112 (38.1)	103 (35.4)	
30–34	208	24.7	95 (38.3)	73 (24.8)	40 (13.7)	
≥35	129	15.3	57 (23.0)	31 (10.5)	41 (14.1)	
	10	1.2				
Education						
Primary or lower	18	2.1	12 (4.8)	55 (18.9)	128 (44.8)	406.493 (<0.001)
Secondary	177	21.0	27 (10.7)	153 (52.9)	144 (50.3)	
Tertiary	324	38.4	213 (84.5)	83 (28.5)	14 (4.9)	
	310	36.8				
	14	1.7				
Occupation						
Trader	403	47.8	60 (24.0)	161 (55.5)	182 (64.1)	216.509 (<0.001)
Artisan	150	17.8	22 (8.8)	60 (20.7)	68 (23.9)	
Civil servant	146	17.3	84 (33.6)	35 (12.1)	27 (9.5)	
Banker	85	10.1	52 (20.8)	31 (10.7)	2 (0.7)	
Others	40	4.7	32 (12.8)	3 (1.0)	5 (1.8)	
	19	2.3				
Religion						
Christianity	337	40.0	175 (70.0)	109 (37.2)	53 (18.5)	149.302 (<0.001)
Islam	493	58.5	75 (30.0)	184 (62.8)	234 (81.5)	
	13	1.5				
Ethnicity						
Yoruba	781	92.6	218 (86.2)	283 (96.9)	280 (97.2)	35.802 (<0.001)
Others	52	6.2	35 (13.8)	9 (3.1)	8 (2.8)	
	10	1.2				
Total pregnancies						
One	287	34.0	99 (39.9)	105 (36.1)	83 (29.2)	16.266 (=0.012)
Two	190	22.5	64 (25.8)	68 (23.4)	58 (20.4)	
Three	152	18.0	37 (14.9)	57 (19.6)	58 (20.4)	
Four or more	194	23.0	48 (19.4)	61 (21.0)	85 (29.9)	
	20	2.4				
History of stillbirths						
Yes	133	15.8	46 (17.9)	40 (13.6)	47 (16.2)	130.84 (<0.001)
No	341	40.5	121 (47.1)	173 (58.6)	47 (16.2)	
Others	369	43.8	90 (35.0)	82 (27.8)	197 (67.7)	
Previous CS						
Yes	67	7.9	45 (17.5)	15 (5.1)	7 (2.4)	47.641 (<0.001)
No	776	92.1	212 (82.5)	28 (94.9)	284 (97.6)	

Abbreviations: CS, cesarean section; PHC, primary health care; UCH, University College Hospital; SD, standard deviation.

Table 2 Women's opinions on patients' and doctors' right to autonomy by type of facility

Statement	UCH, n (SD)	Adeoyo, n (SD)	PHC, n (SD)	Chi square (P value)
A pregnant woman who chooses CS without medical reason has some psychological disturbance	25.4	43.9	43.1	32.527 (<0.001)
It is the right of the woman to choose mode of delivery as long as there is no medical indication which forbids that mode	73.2	28.2	22.8	168.784 (<0.001)
MDCS should be granted	73.8	36.6	22.8	149.789 (<0.001)
Doctor has a right to overrule a request for MDCS	49.8	49.8	61.8	9.843 (0.007)
Practice of requests for MDCS should be discouraged	42.4	79.2	73.7	92.965 (<0.001)

Abbreviations: CS, cesarean section; PHC, primary health care; UCH, University College Hospital; SD, standard deviation; MDCS, maternal demand for cesarean section.

facility and educational status of the clients. A significantly higher number of antenatal clients from the THC (77.4%) than clients from SHC (31.8%) and PHCs (14.8%) were aware of MDCS ($P \leq 0.001$). Respondents with a higher level of education were more likely to be aware of MDCS than those with a lower level of education ($P < 0.05$). Frequency of stillbirth did not impact significantly on awareness of MDCS.

Major sources of information on MDCS were doctors (30.8%) followed by friends (24.3%), reading (22.2%), nurses (16%) and the media (14.5%). Concerning opinions about reasons mothers request cesarean section, 68.9% agreed that it is due to fear of labor pains, fear of problems arising in labor (60.1%), fear of losing the baby during labor (50.3%), advanced maternal age (46.1%), previous pregnancy losses (41.6%), previous infertility (36.3%), and pregnancy achieved by assisted reproduction (26.9), while 39% agreed that it is because cesarean section is now safer than before. Fear of urinary or fecal incontinence was reported by 20.2% and 16.8%, respectively.

Concerning opinions on autonomy, 42.6% of respondents felt that MDCS should be granted. More than half of the respondents (52.8%) felt that the doctor had the right to overrule a request for MDCS. Sixty-six percent felt that MDCS should be discouraged. However, when examined by type of health facility, the results showed some significant differences. Higher proportions of women from the THC (73.1%) than SHC (28.2%) and PHCs (22.8%) felt that it is the right of the woman to choose her mode of delivery as long as there are no medical contraindications ($P < 0.001$, see Table 2). In the same vein, a higher proportion of women in the THC (73.8%) than in the SHC (36.6%) and PHCs (22.8%) thought that MDCS should be granted ($P < 0.001$). In contrast, higher proportions of women at the SHC (43.9%) and PHCs (43.1%) than at the THC (25.6%) thought that a woman who requests cesarean section without a medical indication has underlying psychological ill health ($P < 0.001$), while higher proportions of women from the PHCs (61.8%) than both the SHC and THC (49.8%) felt that a doctor has the right to overrule a request for MDCS ($P = 0.007$). The belief that the practice of MDCS should be discouraged was significantly ($P < 0.001$) higher among women from SHC (79.2%) and PHCs (73.7%) than the THC (42.4%).

On the whole, 70% of clients from the THC reported that their culture approved of birth by cesarean section compared with clients from the SHC (22.5%) and PHCs (23.4%). Similarly, a higher proportion of clients from the THC (81%)

reported that their religion approved of cesarean section than that from the SHC (30.9%) and the PHCs (28.8%). The differences between the proportions from the THC and other health facilities were statistically significant ($P < 0.05$). There were no statistically significant differences between the proportions obtained from the SHC and the PHCs ($P > 0.005$, see Table 2).

Concerning perception of areas where women who request cesarean section are likely to do better than those who do not voluntarily choose cesarean section; fewer women (31.1%) thought that women who choose MDCS are likely to recover faster, that they will have better postoperative pain control (24.9%), that they will initiate breastfeeding sooner (26.1%), and that they will have better psychological well being (28.9%) than women who do not voluntarily choose cesarean section.

Willingness to ever request for cesarean section was expressed by only 6.6% of all women. Of those willing to request cesarean section, 53.7% said they would likely be criticized. Of those who volunteered information about the likely critics, 33.3% mentioned either their husbands or friends, 17% (parents), 11% (family members) and 1% (doctors). Reasons given for willingness included fear of labor complications (34.8%), fear of pain (26.1%), lack of support in labor (17.4%), past medical illness (13%) and other reasons (8.7%), such as fear of episiotomy and being of advanced age.

Separate multiple logistic regression analysis was carried out for willingness to request cesarean section when not indicated and the right of autonomy of the woman to choose her mode of delivery according to hospital type and other sociodemographic and clinical variables. The latter variables included religion, ethnicity, educational level, occupation, and previous cesarean section in the model for willingness to request cesarean section, while age and number of previous pregnancies were included for right of autonomy to choose cesarean section. Women attending THC were chosen as the reference category for the hospital type variable in the two logistic models. The results of the multiple logistic regressions are shown in Tables 3 and 4. Women receiving antenatal care at the SHC were about seven times less likely (odds ratio [OR] = 0.148, 95% confidence interval [CI] 0.064–0.342) and those at PHCs about 44 times less likely (OR = 0.023, 95% CI 0.003–0.167) than THC women to express willingness to request cesarean section. Also, women with previous cesarean section were more likely than those without to indicate their willingness to request cesarean section (OR = 3.19, 95% CI 1.551–6.56). Concerning views about right of autonomy to choose mode of

Table 3 Logistic regression of willingness to request cesarean section on variables

Variable	OR	95% CI	P value
Hospital			
UCH			
Adeoyo	0.148	0.06–0.342	<0.001
PHC	0.023	0.003–0.167	<0.001
Ever had CS			
Yes	3.189	1.551–6.558	0.002
No			

Note: Only significant variables are reflected.

Abbreviations: CI, confidence interval; CS, cesarean section; OR, odds ratio; PHC, primary health care; UCH, University College Hospital.

delivery, women receiving antenatal care at the SHC were about seven times less likely (OR = 0.137, 95% CI 0.092–0.205) and those at the PHCs, about ten times less likely (OR = 0.104, 95% CI 0.069–0.158) than THC women to express such an opinion. Other predictor variables in the logistic regression were not in the final model.

Discussion

The findings of this study suggest that women experience suboptimal pain control during labor and express weak confidence in the quality of obstetric care provided. The commonest source of information on MDCS being from doctors is a pointer to the possibility of lack of confidence even by health care providers, in the quality of obstetric care being provided. Epidural anesthesia, facilities and manpower for effective monitoring of labor in most developing countries are not available. Therefore, it appears that MDCS is increasingly being employed as a means to avoid labor pains and/or labor complications or concerns for the safety of the baby, as was demonstrated by findings in this study and studies from other parts of the world.^{18–20} This is contrary to the National Institutes of Health guidelines on MDCS, which advise that MDCS should not be motivated by unavailability of effective pain management.¹ Common reasons for MDCS among south-eastern and western Nigerian women showed some variation. While previous infertility and advanced maternal

age were the common reasons among south-eastern Nigerian women,⁴ fear of labor pain and adverse labor outcome ranked highest among south-western Nigerian women, who are known to have higher pain perception in labor.^{21,22}

Fear of pelvic floor dysfunction is a reason for MDCS among the south-western Nigerian women in contrast with south-eastern Nigerian women. This may suggest a lower incidence of pelvic floor dysfunction among south-eastern Nigerian women, or it may be underreported. Further studies would be needed to clarify this. This study confirms that MDCS due to fear of pelvic floor dysfunction following vaginal delivery is not limited to women in developed countries, as was previously believed.

Awareness of MDCS was 39.6% compared with 15.1% noted from a previous survey⁵ suggesting increasing awareness of MDCS in developing countries. Awareness seems to be driven by higher levels of educational and professional attainment. The higher levels of awareness of MDCS, belief in a woman's right of autonomy to choose their mode of delivery, expectation of respect for such a choice and client willingness to request MDCS among participants at the THC compared with the SHC and PHC were not unexpected because they had significantly higher proportions of women with tertiary and postgraduate education and professional training. More women from the THC and SHC would prefer that MDCS be discouraged.

Interestingly, more women from the THC believed that their culture approved of cesarean section compared with women from other centers, despite sharing the same Yoruba culture. The significant difference between women from the THC and other facilities, notably higher levels of tertiary education, suggests higher levels of education as a modifier of cultural perceptions of cesarean section.^{9,23} A similar trend was also noted in a previous study in south-eastern Nigeria where almost all the women (96.3%) who requested MDCS had university education.⁴ Education thus seems to be a driving force in MDCS. Educational attainment is a single factor that has been shown to improve women's health-seeking behavior and to foster active participation and decision-making in matters involving their health. Its link with MDCS is therefore not surprising.

The commonest sources of information on MDCS being doctors and friends suggests client and physician-led roles in the propagation of MDCS.^{24,25} This is supported by the logistic regression finding of antenatal attendance in the THC as the strongest predictor of client willingness to request MDCS. Physician suggestion to patients,^{24,25} on a background of higher proportions of high-risk obstetric care provided at THC levels and possible fear of litigation, peer

Table 4 Logistic regression of the woman's right to choose mode of delivery on variables

Variable	OR	95% CI	P value
Hospital			
UCH			
Adeoyo	0.137	0.092–0.205	<0.001
PHC	0.104	0.069–0.158	<0.001

Note: Only significant variables are reflected.

Abbreviations: CI, confidence interval; OR, odds ratio; PHC, primary health care; UCH, University College Hospital.

information amongst antenatal clients, and higher levels of educational attainment among clients from the THC revealed by this study to be linked with belief in autonomy of choice are possible reasons. Previous cesarean section was also another strong predictor of MDCS. For this group of women, the reason may be that, having undergone one cesarean section, the fear of cesarean section may have been overcome.^{26,27}

Evidence from this study, as found in other studies, shows that although an increasing trend of MDCS may have been noted, this group of women still comprise a small minority.²⁸ It is unlikely that MDCS contributes significantly to cesarean section rates in developing countries compared with developed countries. Women willing to request MDCS in south-western Nigeria comprised 6.6%, comparable with the prevalence obtained in south-eastern Nigeria (4.4%). Convenience, as was found in this study, was nonexistent as a reason for MDCS in developing countries, and supports findings that a woman would seldom request cesarean section in the absence of what she considers to be clinical or psychological indications.^{18,28}

However, the decision for MDCS will be a difficult one for Nigerian women because the potential for partner criticism is high. The African culture celebrates the leadership of households by husbands, and this affects the decision-making of their partners on all issues, including reproductive health. This reaffirms the importance of male partner involvement in reproductive health decision-making, and the need for its consideration in addressing issues about MDCS in developing countries.

Conclusion

The commonest reasons expressed by south-western Nigerian women for MDCS are fear of labor pains and complications in labor, suggesting suboptimal obstetric care. Willingness for MDCS is low and criticism by partners of those who choose it is high, making the decision for MDCS a difficult one. Provision of epidural anesthesia and improved safety of vaginal delivery may prevent Nigerian women from making a difficult choice like MDCS due to fear of pain and poor labor outcome. The role of the male partner needs to be considered to make sustainable policies or guidelines for MDCS in developing countries.

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Disclosure

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