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Preferred mode of delivery and its determinants among nulliparous women attending antenatal clinic in a secondary health facility in south-south Nigeria

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Abstract

Background: Multiparous women's preferred mode of delivery is partly influenced by their experiences in their previous deliveries. For the nulliparous women, the possible influencers of their preferred mode of delivery could be multifactorial including narrations from multiparous women regarding their experiences in previous deliveries.
Objective: The aim of the study was to evaluate the preferred mode of delivery and its determinants among nulliparous women attending Antenatal clinic (ANC) in a secondary health facility in south-south Nigeria.
Materials and methods: This was a cross sectional study conducted at the antenatal clinic of Central Hospital Agbor, Delta state, Nigeria. A total of 221 consecutive consenting nulliparous women who came for ANC registration were recruited for the study after obtaining their informed written consent. Questionnaire was used to seek for their sociodemographic characteristics, their preferred mode of delivery and possible influencers of their decision.
Results: The preference for vaginal delivery (VD) was 70.6% while 5.4% preferred Caesarean section (CS). Twenty four percent (24.0%) had no preference and will accept CS if advised by the Doctor. Factors significantly associated with preference for CS were advanced maternal age, occupation and a previous history of miscarriage. Reasons given by women for preferring VD were to experience labour, avoid CS pain, fear of death, avoid CS scar and delayed recovery while those who preferred CS cited advanced maternal age, to avoid labour pain, for the safety of baby and mother and to avoid multiple vaginal examinations and episiotomy.
Conclusion: The preference for CS was 5.4% while 24.0% had no preference and would accept CS following Doctors advice despite the policy of free maternity care. There is the need to address non-cost barriers through ANC health education to improve acceptance of CS.

Key words: Preferred mode of delivery, Nulliparous women, South-South Nigeria.

Introduction

The patients' bill of rights which provides patients with information on how they reasonably expect to be treated during the course of their hospital stay gives patients the privilege to actively participate in their choice of medical treatment including the method of delivery.[1] Obstetricians and midwives owe her informed consent regarding the benefits and disadvantages of her preferred mode of delivery. Generally, there is high preference for VD over CS among pregnant women.[2,3] However, it is generally believed among obstetricians and perinatologists that the rates of CS worldwide have maintained a rising trend in the past few decades, even though in most of sub Saharan Africa, one can still argue that

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many women who need CS do not get it, or do so too late, thereby resulting in an unnecessary increase in maternal and perinatal adverse outcomes. According to WHO, CS rate in any population should lie within the range of 5–15%, and there is no justification to have more than 15% CS births.[4] The International Federation of Gynecology and Obstetrics (FIGO) states that CS should be performed for medical indications not maternal preference[5], but maternal requests are often pointed at as one of the forces increasing CS rates[6-9] due to the fear of pain of the VD, fear of having genital trauma during VD, the availability of good and safe surgical and anesthetic skills and the misconception that CS is safer for the baby. [10,11]

The dramatic increase in the use of CS globally, bearing in mind its consequences and associated risks has continued to be a subject of discussion among medical personnel.[12] The increasing trend in CS is partly attributed to demands by women themselves for the procedure (maternal request).[13] Non-medical indications for CS such as Obstetrician and maternal preferences have been linked to the global increase in CS rates.[14] Multiparous women who have had negative labour or CS experiences are more likely to choose one method over the other. The factors influencing the preferred mode of delivery ranges from socio-cultural and Obstetric factors to experiences from previous deliveries. For the nulliparous woman who have not experienced child birth, anxiety, fear of labour and negative narrations from women who have delivered previously may act as influencers of her preferred mode of delivery. Alkhaza et al[15] and Yuksel et al[16] reported 85.5% and 93.2% respectively of nulliparous women preferring vaginal delivery. The commonest reasons given for their preference for VD were to have a natural birth, quick recovery, anxiety and fear of labour pains, the fear of anaesthesia and less blood loss and lower cost. Only 13.5% and 6.8% respectively opted for CS delivery. Their reasons were the fear of putting the baby at risk, fear of normal labour and need to preserve the normal anatomy.

The cost of CS has been documented as a reason for women preferring VD and rejecting CS especially in settings without functional health insurance schemes.[17-20] The cost of delivery appears to be an obstacle for many women and families considering that most people live below the poverty line in Nigeria.[21] Hence it is pertinent to enquire what other factors are strong influencers of behavior regarding preferred mode of delivery when the role of cost is relatively minimized. Most of the previous studies were conducted in settings where patients mostly paid out of-pocket. Central Hospital Agbor, where the present study was conducted, is a government funded secondary healthcare facility with an intervention to increase access to maternal and child healthcare in place with one of the components being free antenatal care and delivery.

This study was therefore designed to assess the preferred mode of delivery among a nulliparous pregnant women population in the setting of free access to antenatal care and delivery and the possible influencers of their decision. We hope to be able to highlight the emerging barriers to appropriate decision-making for women regarding their preferred mode of delivery in our environment.

Patients and methods

Study Setting

Ethical approval for the study was obtained from the Research and Ethics Committee of Central Hospital, Agbor, on March, 2023, with protocol no: E. Comm/C/0/AMZ/091/23. The study was executed in accordance with the guidelines of the Declaration of Helsinki, 2013. The authors are available and ready to supply the data upon any requests.

Central Hospital, Agbor, Delta state Nigeria was established in the year 1906. It is a 250 bedded Hospital that is located in the South South region of Nigeria. It provides general medical care and specialist services to indigenes of Delta State and neighbouring Edo state. The Obstetrics and Gynaecology Department has two consultants who are Fellows of the National and West African Colleges of Obstetricians and Gynaecology. Training of Medical Officers and Intern form part of the activities of the Hospital.

In November 2007, the Delta State Government introduced Free Maternal Health program in the state. The program recognizes the negative effect of poverty to accessibility of health care and thus provide free antenatal care, drugs, Laboratory tests, two free ultrasound scans, delivery and surgical services right from conception to six weeks after

delivery, inclusive of Caesarean section, Ectopic pregnancy and blood transfusion. The present government has keyed into the program and modified it for better services to be rendered. Currently, the hospital has monthly antenatal booking of over two hundred (200) clients. The delivery rate is over 2000 per year with a Caesarean section rate of about 27.96%.[22] The postnatal clinic is manned by medical officers with over fifty (50) attendees seen weekly.

Study Design

This was a cross sectional study that was conducted at the antenatal outpatient unit of the Department of Obstetrics and Gynecology, Central Hospital, Agbor, Delta State, Nigeria, from July to December 2023.

Inclusion and Exclusion criteria

The target population consisted of all nulliparous pregnant women in their third trimester who were attended to in the ANC within the study period. Clients who refused to give consent were excluded from the study.

Data Collection

A total of 221 nulliparous women who were in their third trimester of gestation were included in the study. Written informed consent was taken from each participant after explaining the purpose of the study, with an assurance of confidentiality. Those who did not give consent were allowed to opt out. Data were collected using a pretested questionnaire which included sociodemographic characteristics and Obstetric history and their preferred mode of delivery and reasons for their preferences. The questionnaires were essentially self-administered, after full explanation of the relevant sections by clinic staff. However, for non-literate women, the questions were explained by clinical staff in the local language, who also assisted them in completing the questionnaire.

Sample size calculation

Calculated minimum sample size was 163 based on the formula $[P \times Q (E/d)^2]$ (where P = the probability of choosing CS or VD =50%; Q =100-P =100-50=50; E = chosen error margin at 95% confidence interval =5%; and d = standard error at 95% confidence interval which is 1.96). The probability of choosing CS or VD was assumed to be equal at 50%, at 5% chosen error margin and 1.96 standard error at 95% confidence interval. However, 221 patients who presented within the study period and consented were recruited to increase the external validity of the study.

Data Analysis

Completed questionnaires were retrieved from participants and entered into the IBM Statistical Package for Social Science (SPSS) version 22. Descriptive statistical methods were used to summarize data on sociodemographic characteristics using mean, range, and percentages/proportions and presented as tables. Participants' preference for mode of delivery was presented using a pie chart. A comparison of participants' preferred mode of delivery across sociodemographic findings was performed using Pearson's Chi-Square or Fisher exact test where appropriate. Statistical significance was set at p=0.05.

Table 1: Sociodemographic characteristics of participants

Characteristics	No (221)	%
Age		
≤20	37	16.7
21-25	67	30.3
26-30	84	38.0
31-35	26	11.8
36-40	5	2.3
≥41	2	0.9
Marital status		
Married	132	59.7
Co-inhabiting	52	23.5
Unmarried	37	16.7
Religion		
Catholic	28	12.7
Anglican	15	6.8
Pentecostal	155	70.1
Moslems	9	4.1
Others	14	6.3
Tribe		
Ika	110	49.8
Ibo	46	20.8
Urhobo	11	5.0
Yoruba	2	0.9
Hausa	6	2.7
Others	46	20.8
Education		
Non	2	0.9
Primary	3	1.4
Secondary	138	62.4
Tertiary	78	35.3
Occupation		
Civil servant	4	1.8
Teaching	15	6.8
Trading	59	26.7
Student	5	2.3
Housewife	26	11.8
Professional	4	1.8
Artisans	108	48.9

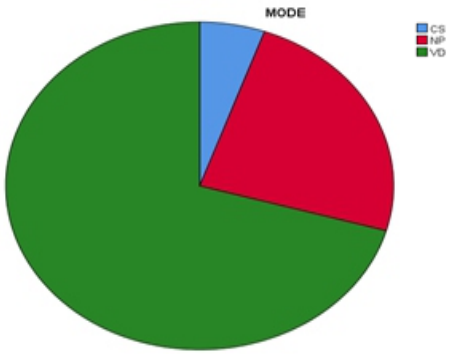

Fig 1: Preferred mode of delivery

Table 2: Sociodemographic and obstetric history versus preferred mode of delivery

	Preferred mode of delivery			
Age	CS (12)	NP (53)	VD (156)	P value
<20	0	8	29	
21-25	1	12	49	
26-30	2	24	58	0.00
31-35	6	4	16	
36-4	3	0	2	
>41	0	0	2	
Marital status				
Married	11	36	85	0.074
Co-inhabiting	1	10	41	
Unmarried	6	7	30	
Religion				
Catholics	2	9	17	
Anglican	0	6	9	0.685
Pentecostal	9	34	112	
Moslems	0	2	7	
Others	1	2	11	
Tribe				
Ika	4	32	74	
Ibo	4	10	32	0.565
Urhobo	0	3	8	
Yoruba	0	0	2	
Hausa	0	2	4	
Others	4	6	36	
Education				
None	0	0	2	
Primary	0	0	3	
Secondary	6	31	101	0.452
Tertiary	6	32	50	
Occupation				
Civil servant	0	1	3	
Teaching	1	2	12	
Trading	0	12	47	0.005
Students	0	2	3	
House wives	6	4	16	
Professionals	0	3	1	
Artisans	5	29	74	
Previous miscarriage?				
Yes	6	11	13	0.00
No	6	42	143	
Planned pregnancy				
Planned	11	38	110	
Not planned	1	15	46	0.290
History of infertility				
Yes	4	5	22	0.098
No	8	48	134	

Results

The mean age of participants was 26.03 years with a standard deviation of 5.09 years. The minimum age of participant was 17 years while the maximum age was 43 years. The mean gestational age at booking was 21.84 weeks. Majority of the participants (59.2%) were married while non marital fertility was 40.2%.

The level of education of the participants was high with 62.4% and 35.3% of them having secondary and tertiary levels of education respectively.

Majority of the women (156: 70.6%), preferred VD while only 12 (5.4%) preferred CS as a choice for delivery. However, 53 (24.0%) have no preference and would accept CS if the Doctor feels it would be the best option

Factors that were significantly associated with acceptance of CS were Age (p value 0.00), occupation (p value 0.005) and previous history of miscarriage (p value 0.00). Women with advanced age, house wives and Artisans and those that have had miscarriages in previous pregnancies were more likely to accept CS as an option of delivery.

The commonest reasons why women preferred to have VD delivery were to experience labour, to avoid pains associated with CS, fear of death from CS, to avoid the scar associated with CS.

The reasons given by women for preferring CS were for the safety of mother and baby, because of advanced maternal age, fear of labour pains, to avoid multiple vaginal examinations and dislike for episiotomy.

Table 3: Reasons for preferring VD

Reason	Number (156)	%
Experience labour/womanhood	55	29.1
Avoid CS pains	21	11.1
Fear of death from	16	8.4
Avoid CS scar	10	5.2
Delayed recovery from CS	6	3.1
I hate CS	6	3.1
CS makes tommy big	6	3.1
Best way to deliver	2	1.1

Table 4: Reasons for preferring CS

Reason	Number (12)	%
Safety of me and my baby	4	2.1
My age is advance	3	1.6
To avoid labour pains	3	1.6
Avoid multiple VE	1	0.53
I hate episiotomy	1	0.53

Discussion

From the study, 70.6% of the nulliparous women preferred VD. The finding is slightly lower than the figures obtained by Kjerulff et al[23] who recorded 93.9% preference for VD. Alkhazal et al[15] in Saudi Arabia and Yukel et al[16] in Turkey reported 85.5% and 93.9% preference for VD in their studies. However, in the study by Alkhazal et al[15] and Yuksel et al[16], participants were restricted in their choices of mode of delivery to either CS or VD. The women were not given the option to make choices of their preferred mode of delivery should the managing team advise otherwise. The preference for CS among the participants was 5.4% which is comparable to the study by Yuksel et al[16] and Kjerulff et al[23] that reported 6.8% and 3.1% acceptance respectively. Alkhazal et al[15] and Al-Rifai et al[24] reported 13.5% and 9.76% respectively of acceptance of CS in their studies. The factors that were significantly associated with acceptance of CS were advanced maternal age (p 0.00) Occupation (p 0.005) and a previous history of miscarriage (p 0.00). Women who were advanced in age were more likely to choose CS by choice. Many of them would have had difficulty conceiving or married late. Advanced maternal age and history of subfertility are valid Obstetric indications for CS. Women who had previous miscarriages were more likely to accept CS as an option of delivery. This finding is in agreement with earlier reports by Kjerulff et al[23].

The other reasons given by women for accepting CS as their preferred option for delivery were the fear of labour pains, the fears of multiple vaginal examinations and episiotomy. The finding is similar to other previous reports.[17-20,24,25] There is need for health practitioners especially Obstetricians and midwives to establish protocols for pain management in labour. Making epidural anaesthesia for labour management available will go a long way in ameliorating the pains of labour. Although the expertise is not readily available, many of our pregnant women especially in the rural setting are not aware of epidural analgesia for labour management. Oladokun et al[26] while reviewing the awareness of use of epidural analgesia in labour among women attending the ANC in Ibadan, reported that only 19.5% were aware of this option. The inclusion of the various options of pain management in labour including epidural analgesia during the antenatal classes is suggested to help allay the fears of the pregnant women.

The reasons adduced for rejecting CS were to experience labour, to avoid CS pain, the fear of death, to avoid CS scar and delayed recovery after CS. The finding is similar those documented in some previous studies.[17-20,24,25] In some culture, women who delivered by CS were regarded as reproductive failures and "Failure of womanhood".[20] This belief has continued to play a significant role on why pregnant women reject CS when offered the procedure.[20] Religious beliefs also play a significant role in women's decisions regarding CS, with some religions viewing medical interventions like CS as an affront to divine will. The mythology that pregnant woman should deliver like the "Hebrew woman" remain as folklore that is deep rooted in the mind of many antenatal women, hence their desire to have vaginal delivery to avoid the perceived reproductive failure.[20] The perceived attitude of the community towards women who had CS and their stigmatization has remained a major setback in the acceptance of CS.[27] Health care providers should engage the communities in the form of advocacy, public enlightenment, and shared responsibility for the overall health of their people directed toward a determined effort to discard myths and strengthen correct information about the place of CS as an intervention. The impact will be a positive attitude toward CS by the stakeholders in the communities to remove the stigma associated with delivery by CS, which has the potential of improving the uptake of CS. The perceived fear of death are real concerns considering the high rate of maternal mortality and complications of CS[18] like ureteric injury, bowel injury and Hysterectomy resulting in subsequent infertility. The death of one-woman during childbirth is a significant loss to the community. It is therefore important for obstetricians, midwives, and allied health practitioners to continue to scale up coordinated package of maternity health education and counseling through the antenatal care clinic, emphasizing the place of every woman's desire for best maternal and perinatal outcome, as well as empathy towards the experience of women during pregnancy and childbirth. Utilization of the antenatal care have been shown to have a positive impact on the utilization of Caesarean delivery and

therefore, a reduction in morbidity and mortality associated with a contraindicated vaginal delivery.[28]

Twenty four percent of the women had no preference and would consent to CS if they are informed by the Doctor that it will be the best option. The overriding factors that influenced their decisions were the safety of herself and that of the unborn child.

The preference for CS as an option of delivery was low at 5.4% even after mitigating the effect of cost. There is the likelihood of rise of unconventional birth requests, including a desire to have vaginal delivery even after a diagnosis of conditions like placenta praevia and contracted pelvis in the coming years should this observation reflect what is obtainable in other parts of the country.

Strength and limitations: The study was conducted in a facility where ANC and delivery is free. It gave us the opportunity to assess non-cost barriers that could affect the preferred mode of delivery among a nulliparous pregnant women population. However, the study was conducted in a facility, and as such the findings cannot be regarded as the general opinions of the population.

Conclusion

The desire of many pregnant women is to have a vaginal delivery. However, in some circumstances, Vaginal delivery is absolutely contraindicated and can be catastrophic when allowed to progress. Despite mitigating the effect of cost, the preference for CS was still low. This finding suggest that non-cost factors may play significant role in women decision regarding their preferred mode of delivery. Informed consent, wherein important information, including possible risk and benefits of their preferred treatment choice is absolutely necessary to help guide the patient in their decision making.

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