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Factors Influencing the Choice of Place of Delivery among Women in Gindiri, Mangu Local Government Area, Plateau State: A Mixed Method Study

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Abstract

Background*: Maternal mortality has remained high in Nigeria and only a third of births take place in healthcare facilities. This study sought to determine the factors influencing the choice of place of delivery among pregnant women in Gindiri, Mangu Local Government Area, Plateau State.*
Methods*: A mixed method study consisting of a descriptive cross-sectional survey and Focused Group Discussion was conducted among women in Gindiri District, Mangu Local Government Area of Plateau State. An interviewer administered questionnaire and an interview guide were used respectively for the quantitative and qualitative data collection. Data was analysed using the SPSS Version 23.0 and the framework approach for the quantitative and qualitative data respectively.*
Results*: Of the 107 respondents, 72 (67.3%) had facility delivery. Sixty six (61.7%) cited financial constraints, 28 (26.2%) quality of care, 26 (24.3%) suddenness of labour, 18 (16.8%) attitude of health workers and 12 (11.2%) proximity as reasons for choice of delivery location. Higher birth order and higher level of education were linked to facility delivery. The best fit framework identified cost, perception of normalcy of the labour, sociocultural influence and bad attitude of health workers as reasons why pregnant women do not deliver in health facilities.*
Conclusion: *About two-third of women delivered in healthcare facilities, leaving a third at risk of maternal morbidity and mortality from home delivery. Facility birth should be made affordable to families. Communities should be educated on the dangers of non-facility delivery while health workers should be trained on proper conduct to encourage hospital delivery.*
Keywords*: Maternal mortality, Pregnant Women, Home Childbirth, hospital delivery, Birth Attendants;*

Introduction

Maternal mortality in Nigeria has remained high in spite of several efforts by stakeholders and public health practitioners to address it. Currently, the country's Maternal Mortality Ratio (MMR) stands at 917 per 100,000 live births, ranking 4th globally after South Sudan, Chad and Sierra Leone.[1] Antenatal care improves maternal and child health

outcomes as pregnant women are adequately prepared for birth thereby helping them to make informed healthy choices, part of which is to deliver in a health facility. Delivery in a healthcare facility where skilled birth attendants are obtainable reduces not only maternal mortality but also its psychological and economic impact.[2] Unfortunately, only 39% of Nigerian women give birth in a health facility.[3]

The "three delay model" (in decision making, reaching the health facility and receiving care) does not adequately conceptualise other factors that result in maternal mortality.[4] This is because some women decide ab initio not to deliver in a health facility. A recent systematic review demonstrated that the choice of birthplace is anchored on four major thematic areas which are care quality at the health centre, resource availability and access, influence of sociocultural context, and beliefs and perceptions of pregnancy. The pregnant woman lies in the middle of these factors showing that decision making is dynamic.
Anecdotal evidence in Comprehensive Health Centre, Gindiri shows that antenatal care attendance does not necessarily translate to facility-based delivery. This preliminary finding is in keeping with normative form of social need according to Bradshaw taxonomyand further confirmed through the corporate approach of health needs assessment which is the engagement of the stakeholders of the hospital. It is also important to note that the corporate approach of health needs assessment takes into account the felt and expressed needs of a community.[7,8] Furthermore, some women present to the labour ward, sometimes with complications after trial of labour elsewhere without success. This perspective is corroborated by a study done in northern Nigeria where 98% of new mothers attended antenatal care but only 24% actually delivered in the health facility.[9]

An analysis of the factors leading to such decisions is important for the success of any intervention.[5] Therefore, it is imperative to explore the perspectives of the women as regards the influence of both the health system and community-level factors on their choice and decision-making right during the period of the pregnancy. This study explored the factors that influence decision making within the context of this recent best fit framework among pregnant women attending antenatal clinic at the Comprehensive Health Centre (CHC) Gindiri.

Methodology

Study area: This study was carried out in Gindiri district of Mangu Local Government Area (LGA), Plateau State. Gindiri has a population of 40,400 persons. Educational institutions in Gindiri include a College of Education, private secondary schools and public primary and secondary schools. The district has 6 public and 5 private PHC facilities. The Comprehensive Health Centre (CHC) Gindiri is a 33-bed rural outpost of the Jos University Teaching Hospital (JUTH), a tertiary hospital based in Jos, the State capital. It offers both inpatient and outpatient care and also serves as a referral centre for PHC and Private healthcare facilities within the district. Dalang is one of the communities in Gindiri district and has only one PHC facility with 2 beds providing mainly outpatient care including ANC and delivery services.[10]

Study population: The quantitative study population was pregnant women attending antenatal clinic at the CHC Gindiri while the qualitative study was carried out among women in Dalang community of

Gindiri district.

Inclusion and exclusion criteria
All consenting pregnant women booked for antenatal care who had had at least a previous vaginal delivery were included while primigravidae and pregnant women whose only previous deliveries were through caesarean section were excluded.

Study design: This was a mixed method study consisting of a descriptive cross-sectional study and Focused Group Discussions (FGDs) conducted among pregnant women attending antenatal care in the CHC Gindiri, healthcare workers and women in Dalang community of Gindiri respectively.

Sample size determination and sampling technique: the minimum sample size for the quantitative study was determined by using the Kish and Leslie formula for cross sectional studies.[11]

$$n_0 = \frac{Z^2 pq}{d^2}$$

Where n = minimum sample size, z = standard normal deviate at 95% confidence interval (1.96), p = prevalence of facility delivery from a previous study and q = 1-p. This gave a minimum sample size of 365. However, the total number of women registered for Antenatal care clinic at the time of the study was 150. Therefore, the finite population correction formula was applied using;

$$n = n_0 \Big/ \frac{1 + (n_0 - 1)}{N}$$

Thus, the sample size was corrected to 106. Three FGDs were conducted;

- Group of 6 women comprising the PHC Dalang health workers (n=2), pregnant women (n=2), Traditional Birth Attendant (n=1) and an elderly woman (n=1)
- Group of 8 pregnant women attending ANC clinic in Gindiri and
- Group of 8 health workers in CHC Gindiri comprising doctors (n=3), nurses (n=2) and, Community Health Officers (n=2)

The CHC Gindiri was purposively chosen being the referral healthcare facility in the district, thus likely to have the largest number of women registered for ANC. A cluster sampling technique was used where women attending antenatal clinic in the JUTH CHC formed the cluster. All pregnant women who met the inclusion criteria were selected consecutively into the study until the minimum sample size was reached, making a total of 107 women. Dalang community was purposively chosen based on perceived needs by the CHC Gindiri indigent staff. The women for the FGD were sampled purposively.

Data collection instrument: The questionnaire for this study was adapted from two previous studies.[12,13] Section A of the questionnaire covered the socio-demographic characteristics of the respondents. Section B assessed the accessibility of healthcare facilities and section C sought antenatal care information. The delivery information was taken in section D, while section E assessed the quality of care given at the health facilities and attitude of the health workers within the context of delivery. A pre-test with 11 participants was done at the PHC Gindiri. This was to test the deliverability of the questionnaire and make necessary adjustments. An interview guide was used for the FGDs using the best-fit framework as a guide.

The best fit framework identifies specific domains of four thematic areas: Perception of pregnancy and childbirth, resource availability and access, perception of

quality of care and influence of socio-cultural context and care experiences were assessed. Issues raised were organized into the pre-existing thematic areas.

Statistical analysis: Completed questionnaires were examined for completeness after which data was entered into Microsoft Excel, cleaned and edited for inconsistencies. The analysis was done using the Statistical Product and Service Solutions (SPSS) version 23.0. Univariate analysis was carried out on the socio-demographic characteristics of respondents, and presented as frequencies and percentages. Median and interquartile range were calculated for skewed variables and data were presented using tables. Descriptive statistics were used to present the factors responsible for decision-making by the antenatal care attendees while bivariate (Chi-square) analysis was used to test the association between facility delivery and factors influencing the choice of the place of delivery. Factors that were found to be significantly associated with choice of delivery place were entered into a multivariate logistics regression model. Results were presented as Adjusted Odds Ratio (AOR) at 95% Confidence Interval.
The qualitative analysis was done using framework approach in which the data was mapped deductively using a best-fit framework. The best-fit framework is a qualitative systematic review that is done to assess the factors that influence the utilisation of facility-based delivery services in Nigeria.[6]

Ethical considerations: Written informed consent was obtained from the study participants after a detailed explanation of the nature of the research. Participants were free to decline participation and to opt out at any point in the course of the study without suffering any negative consequence. Confidentiality of collected information was ensured. Permission for the study was granted by the Paramount ruler of Gindiri and the traditional leader of Dalang community.

Results

Quantitative results

The median age (interquartile range) of the women was 28 (27) years. Ninety (84.2%) respondents had at least 3 children with 45 (42.1%) having more than 5 children. (Table 1). Eighty (74.8%) had a public health facility as their nearest health facility and most of the respondents, 72 (67.3%) had their last delivery in a health facility. Quality of care, 28 (26.2%), suddenness of labour, 26 (24.3%), availability of ANC services, 15 (14.0%) and nearness to residence, 12 (11.2%) were some of the reasons for respondents' choice of delivery location. Financial constraints, 66 (61.7%) and bad attitude of midwives, 18 (16.8%) were identified as reasons why women deliver at home. (Table 2).

About a quarter (24.3%) of the respondents believed health workers in public facilities are rude compared to 3.7% who believed that workers in private health facilities are rude. Respondents with higher parity were significantly (p= 0.033) more likely to deliver in a health facility compared to those with lower parity. Education was significantly (p= 0.037) associated with facility delivery as those with more education had a higher tendency to deliver in a health facility (Table 3). However, multivariate analysis showed that none of the significant factors were predictors of choice place of delivery (Table 4).

Qualitative results

Data was organised under four overarching themes according to the best-fit framework used for this study.

Perception of pregnancy and childbirth

A health worker in the community opined that, "*...it is when the labour is prolonged or becomes critical that they find their way here*. " The issue of medicalisation of childbirth here was seen as an issue.

> "*I think the woman's knowledge about the pregnacy and the anxiety associated with it contributes, some of them are scared of oxytocin, CS, episiotomy which they think they won't get in other places*" (Medical Doctor, CHC Gindiri)

In another perspective, some of the women take advantage of delivering in the hospital as an avenue for favours from their husbands.

> "*Some might even want to go to the healthcare centre because they will want to take tea and bread. She will eat good food with meat*."- Older woman

Influence of sociocultural context and care experiences

Family influences are a significant part of decision making for most women in this community.

> "*…The labour was tough…my relatives came and said 'let's go to the hospital' but my neighbours came and said 'let's wait a bit'. I blatantly refused. By the time we returned from the hospital, my mother in-law sent message saying that I refused to endure so that her son would spend unnecessarily…"*- Pregnant woman

A Traditional Birth Attendant shared an experience;

> "*…one woman delivering her first child, her husband insisted that she must give birth at home. They said she lasted two days in labour and even when the husband was asked to take her to the hospital, he refused, and insisted that she must deliver at home. The woman had a stillbirth and the placenta refused to come out*"

Another perspective is that the husbands refuse to permit hospital delivery because of financial constraints as "…*they are struggling to feed the family, and now delivery.*"- Older woman.

Another theme here is the intersection of traditionalism and modernity which typifies the point in which care should be transitioned from the traditional care to modern care. The TBA facilitates this process of transition, but a couple of the women are recalcitrant to this change particularly the high-risk pregnancies like the primigravidae. Though the issue of religion didn't come out strongly discussants cited the fact that some women frown at males attending to them at delivery.

Resource availability and access

The subject of cost was a major issue among the participants. The cost of delivery at the PHC was 1000 naira at the time of the study and according to the PHC staff "… *even the one thousand you are wondering where some will get it from*". In comparison to JUTH, one of the participants argued that she has spent up to eight thousand naira on delivery. Despite this large discrepancy the PHC staff stated that; "*there are times I forfeited the bills for some because they couldn't afford the one thousand... If it is free women will come".* A healthcare worker corroborated on the issue of cost as "*they were previously charged 4000 to 5000 naira but presently around 10,000 naira*".

A critical issue regarding access is lack of 24-hour service in the PHC as "…*labor starts after the doctors have closed for the day or at late night. Most women around here give birth early hours of the morning and at night*"- Pregnant woman.

Perception of quality of care

The issue of poor attitude displayed by the facility staff during delivery came up;

> "*…but for a place like JUTH (CHC), I took my sick child one certain time and the nonchalant attitude I received made me vow never to go there for delivery. My child fainted in my arm and no one showed any concern. At the end, I had to leave and go to COCIN. You see, for some if you don't get the necessary care, you won't even want to stay…"*- Pregnant woman
>
> "*Of a truth, if we had more staff, the situation would be different but I can't allow my family to suffer because of me being here all the time. Even on Saturdays I come here. It is only Sundays I don't come because I have dedicated it to God."*- Health worker Dalang

A nurse at CHC Gindiri agreed with the issue of maltreatment: "*Lack of confidence in us, bad handling of patients and shouting at them and handling them badly in the delivery room*". A pregnant woman recounted her experience during her previous delivery which made her decide not to deliver in the hospital again. She was kept on the hospital bed for 5 hours without any attention until she left and was about going when the health workers called her back. On return, she gave birth within an hour. Because of this, she felt there was no need for hospital delivery and delivered her second baby at home.

Aside the issue of neglect at the hospital by the staff, verbal abuse was also expressed.

> *"While crying with labour pains and asking that she be helped to urinate because she was pressed but could not urinate. one of the health workers came and said I should not disturb them, that there are patients in the hospital that don't want disturbance. Moreso when I was taking in, was I shouting? Is it today that you will be shouting*" (L.S, Pregnant woman,)

In terms of the cadre and gender of staff, most of the women stated that female nurses are the ones with bad attitude attending to them during labour. The political support to the PHC is also lacking which has significantly affected the quality of care offered.

> "*This chairman has never supported for once since he assumed office. So, getting drugs has been a serious issue."*- Health worker Dalang

Quality of care at CHC Gindiri was also cited as a challenge by a medical officer working at the facility: "*Sometimes delays come from different points in the hospital like records, health workers etc. We are compelled to compromise and improvise many times e.g using a torch for suturing a cervical laceration*". This sometimes affects the perception of the women that they do not feel safe delivering in the hospital.

Table 1: Socio-demographic characteristics of women attending Antenatal Clinic in CHC Gindiri

Socio-demographics	Frequency n=107	Percent
Age Group (Years)		
18-25	31	29.0
26-33	52	48.6
= 34	24	22.4
Median age (IQR): 28 (27) years		
Parity		
1-2	17	15.9
3-4	45	42.1
= 5	45	42.1
Median parity (IQR) 4 (7)		
Religion		
Christianity	37	34.6
Islam	70	65.4
Ethnic Group		
Pyem	47	43.9
Mwaghavul	14	13.1
Bijim	9	8.4
Hausa/Fulani	6	5.6
Others	31	29.0
Marital Status		
Single	1	0.9
Married	103	96.3
Divorced/Separated	1	0.9
Widowed	2	1.9
Highest Level of Education		
None	21	19.6
Primary	36	33.6
Secondary	26	24.3
Tertiary	24	22.4
Occupation		
Housewife	34	31.8
Farming	16	15.0
Trading	29	27.1
Formal Employment	9	8.4
Artisan	17	15.9
Student	2	1.9

IQR= Inter Quartile Range

Table 2: Delivery information of respondents

Variable	Frequency n=107	Percent (%)
Previous delivery location		
Healthcare facility	72	67.3
Non-facility	35	32.7
Reason for choice of previous delivery location		
Nearness	12	11.2
Familiarity with health workers	1	0.9
Quality of care	28	26.2
Suddenness of labour	26	24.3
Family tradition	1	0.9
Family member decision	5	4.7
Low risk perception	10	9.3
ANC facility	15	14.0
Referred by health worker	7	6.5
Others	2	1.9
Decision for place of delivery		
Self	85	79.4
Health worker	5	4.7
Husband	15	15.0
Joint decision (self and husband)	2	1.9
Availability of transport at onset of labour		
Yes	66	61.7
No	7	6.5
Did not deliver in a facility	34	31.8
Reasons why women deliver at home (Multiple responses n=121)		
No health facility	5	4.7
Financial Constraints	66	61.7
Bad attitude of midwives	18	16.8
Availability of TBAs	2	1.9
Family tradition	8	7.5
No need for health facility	7	6.5
Other reasons	15	14.0
Plan for next delivery		
Home	16	15.0
TBA	2	1.9
Public Hospital	72	67.3
Private Hospital	10	9.3
Don't Know	7	6.5

TBA = Traditional Birth Attendant

Table 3: Factors influencing choice of place of delivery

Factors n = 107	Place of delivery: Facility Frequency (%)	Non-Facility Frequency (%)	df	X^2	P value
Age Group					
18-25	21 (19.6)	10 (9.3)			
26-33	35 (32.7)	17(15.9)	2	0.007	0.996
=34	16 (14.9)	8 (7.5)			
Parity					
1-2	16 (14.9)	1 (0.9)			
3-4	29 (27.1)	16 (14.9)	7	12.541	**0.033**
=5	27 (25.2)	18 (16.8)			
Religion					
Christianity	27 (25.2)	10 (9.3)	3	1.759	0.362
Islam	45 (42.1)	25 (23.4)			
Ethnic Group					
Pyem	30 (28.0)	17 (15.9)			
Mwaghavul	12 (11.2)	2 (1.9)			
Bijim	5 (4.7)	4 (3.7)	4	2.982	0.561
Hausa/Fulani	4 (3.7)	2 (1.9)			
Others	21 (19.6)	10 (9.3)			
Level of Education					
None	10 (9.3)	11 (10.3)			
Primary	22 (20.6)	14 (13.1)	3	8.510	**0.037**
Secondary	22 (20.6)	4 (3.7)			
Tertiary	18 (16.8)	6 (5.6)			
Occupation					
Housewife	22 (20.6)	12 (11.2)			
Farming	12 (11.2)	4 (3.7)			
Trading	19 (17.8)	10 (9.3)			
Formal Employment	8 (7.5)	1 (0.9)	5	3.309	0.652
Artisan	10 (9.3)	7 (6.5)			
Student	1 (0.9)	1 (0.9)			

Table 4: Multivariate (logistics regression) analysis of significant factors influencing choice of place of delivery

Variable	df	AOR	95% C.I	*p*-value
Parity	1	1.201	0.957-1.508	0.113
Level of Education				
Primary	1	2.088	0.522-8.358	0.298
Secondary	1	1.628	0.506-5.241	0.414
Tertiary	1	0.485	0.116-2.023	0.320

AOR =Adjusted Odds Ratio; C.I = Confidence Interval

Discussion

This study assessed the factors affecting the choice of place of delivery among women. It showed about two-thirds of ANC attendees gave birth in a health facility in their previous delivery. This is better than the national value of about a third delivering in health facilities. Though a positive step, a third of the women who were delivered at home and exposed to the risks associated with labour and delivery at home without skilled attendance is significant. This reveals that antenatal care attendance does not automatically translate to hospital delivery as some women see ANC as being an end in itself. This finding is similar to that from a study done among mothers attending a PHC in southern Nigeria.[14]

Between pregnancy and delivery lies a spectrum of influences that place the woman at the centre of decision making. Access to the health facility in terms of cost was a significant reason for home delivery. This was the most common reason cited by the respondents for delivering at home. This agreed with the finding of cost barrier within the resource availability thematic area. Interestingly, cost came out strongly as an underpinning factor within the thematic area of influence of sociocultural context and care experience. This is because most men who were not in support of hospital delivery did that because they lacked the financial capacity to pay the bills. This was corroborated by a study done in Vom, central Nigeria where participants mentioned cost as a barrier to facility delivery.[15] Sociocultural influences of other family members like mothers-in-law was observed in this study. Thus, community influencers like women leaders must be beneficiaries of intensified health and behaviour change communication by implication. The role of TBAs who are trusted by women in the community must be discussed by stakeholders. Trained TBAs who are able to recognise danger signs in pregnancy and appropriately refer to a health facility are an asset to the community.

Two factors were seen to be linked with facility delivery; a higher parity and higher level of education. Such women are likely to be more informed with some economic power to practice hospital delivery. The place of women empowerment and girl child education cannot be over-emphasised when it comes to improving health related outcomes. In addition, this study found that non-availability of delivery services round the clock discouraged women from patronizing the health facility especially at nights. This experience highlights the weakness of the health system at rural level and the need for stakeholders to work together to strengthen it.

Quality of care is an important component of the health system and an important contributor to care experience. Care experience shapes the perspective of the women and this goes a long way in determining where their next delivery will take place. The attitude of health workers was seen to be a problem as they were stated to be rude. A study done in Abuja found that maltreatment during child birth is common and as such needs to be urgently addressed.[16] The women in this study also reported physical abuse such as slapping and verbal abuse such as shouting and threats. A multi-country study done on maltreatment of pregnant women during delivery, of which Nigeria was among, revealed that women who were younger and less educated were most at risk of maltreatment.[17] This could also explain why this category of women avoided hospital delivery in this study for fear of discrimination. For example, an

uneducated un-booked woman presenting for delivery will experience a significantly different form of treatment from her educated booked counterpart. Positive pregnancy and delivery experiences in the hospital setting is critical to increasing the uptake of hospital delivery in Nigeria. This study gives an insight into a wide range of conditions and experiences that eventually shape pregnant women's decisions on whether or not to deliver in healthcare facilities.

This study used the mixed-methods design of the sequential explanatory approach. This afforded the opportunity to triangulate the findings for a stronger evidence base. The strength of this study lies in the qualitative component of the research which provides an in-depth perspective of the experiences of the research participants. Over the last decade, the WHO has increasingly given relevance to qualitative research and qualitative evidence in terms of understanding public health interventions and how the uptake of such interventions can be increased.[18] This paper adds to the body of qualitative evidence on the factors that affect the uptake of facility-based delivery services in Nigeria. Furthermore, the paper shows the suitability of using a best-fit framework approach to qualitative research analysis. It is interesting to see how an overarching national framework can be applied to a local context to map out the research findings. The outcome of the research showed that all the domains of the framework were represented deductively by the findings of the research which reveals little dichotomy between the national and local factors.

However, the small size of the study sample and its purposive selection may limit the generalizability of the result. Further studies should consider larger sample sizes and more FGDs to get varying perspectives and experiences as well as the richness of the qualitative data. In addition, it will be interesting to explore the effect of the use incentives like baby care kits as a cost-effective intervention to improve hospital delivery in public hospitals in Gindiri. Feasibility studies should be conducted to determining the appropriate packages or approaches for community health insurance schemes in such communities.

Conclusion

ANC attendance does not automatically translate to hospital delivery and a major barrier to this is cost of delivery services. Public health facilities need to look into the possibility of instituting a subsidized rate for women delivering in the facility to encourage them to deliver in the hospital. For rural women, a form of community health insurance package will be a good starting point. This is a cost-effective intervention as it will encourage more women to deliver in the hospital and both the hospital and the patients will benefit. Furthermore, the staff will benefit from training and retraining so as to improve their attitude towards patient care.

More attention should be given to the primigravidae and those with low level of education particularly using older women such as mentor mothers by sharing positive experiences. Such contextualised approaches should be integrated into ANC to enhance appropriate decision-making processes. In addition, there is need to set up a quality assurance process for the behaviour of staff in public hospitals to improve their attitude towards women in labour and other categories of patients.

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