

Original Research Article

Effect of antenatal education on knowledge and utilization of facility-based delivery services among pregnant women in two health institutions in Alimosho, Lagos state

Orji Urenna Okafor^{1*}, Ademuyiwa Iyabo Yewande²

¹School of Nursing, Department of Maternal and Child Health, Babcock University Ilishan-Remo, Ogun State, Nigeria

²Department of Nursing Science, Faculty of Clinical Sciences, University of Lagos, Lagos State, Nigeria

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***Correspondence:**

Orji Urenna Okafor,

E-mail: ayodelewole@gmail.com

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ABSTRACT

Background: Facility-based delivery care is an essential component of maternity care. Overtime, its under-utilization despite improvement in antenatal attendance has become a public health concern in Nigeria. To assess the effect of antenatal education on the knowledge and utilization of facility-based delivery services among pregnant women in primary health facilities in Alimosho, Lagos.

Methods: Quasi-experimental design of 2 groups pre- and post-intervention was adopted and through multi-staged sampling techniques, 128 participants were selected but 117 completed the study. Self-developed structured questionnaire with reliability index of 0.76 was used for data collection. The intervention package was antenatal education package on benefits and components of delivery services. Data were analyzed using Statistical Package for the Social Sciences (SPSS) version 23 statistical package.

Results: The mean age of participants in control and experimental groups was 32.3±9.60 and 34.7±8.21 years respectively. Findings revealed moderate knowledge mean score (control- 54.97±10.52; experimental-52.14±11.09) and low pre-intervention utilization mean score (control 13.33±3.41; experimental-13.17±4.21). Findings also showed significant improvement on post-intervention mean knowledge score of 52.14±11.09 versus 104.75±5.56 and a significant difference in post-intervention utilization (p=0.000) and follow-up (p=0.013) on the experimental group.

Conclusions: The study concluded that the antenatal education programme had positive effect on the pregnant women's knowledge and utilization of health facility delivery services, therefore, there is need to strengthen and intensify antenatal education at all levels of healthcare using appropriate teaching techniques.

Keywords: Facility-based delivery, Antenatal education, Effect, Knowledge, Utilization

INTRODUCTION

Childbirth is perceived by many as a natural process that would occur with little or no assistance. This informed the choices people make regarding place of delivery. However, the childbirth process could be complicated and necessitate assistance for safe delivery. More so, better outcome could only be anticipated if is occurring within a

health facility. Delivery in health facility plays a critical role in improving maternal health and new-born survival.^{1,2} Facility-based delivery ensures that woman receive quality care and deliver in an environment prepared for an emergency and increases access to appropriate equipment and supplies available on site or through immediate referral to a higher level facility, and reduces risk of complications and infections of the mother

and newborn.^{3,4} Skilled birth attendance is the hallmark of care in facility-based delivery as skilled attendance during labour, delivery and in the early postpartum has been observed to be a major strategy to reduce maternal and new-born mortality.^{5,6}

However, there is still a slow progress made in achieving facility based delivery as shown in Nigeria demographic and health survey (NDHS), 2018 where 67% of women received antenatal care from a skilled provider but only 39% of deliveries in Nigeria occur in health facilities.⁷ Other regions of the world have made substantial progress in utilizing the health facility for delivery as over 9 in 10 births occurred in health facilities in eastern Europe and central Asia (97%), western Europe (99%), latin America and the Carribeans (90%) and east Asia and Pacific (90%), which is in contrast with Sub-Saharan Africa (57%) where the burden of maternal and new-born deaths is highest.³ About 810 women died from pregnancy or childbirth-related complication around the world every day in 2017 and 94% of these maternal deaths which occur in low-resource settings could be prevented by skilled care before, during and after childbirth.^{8,9} Poor utilization of health facilities during delivery by pregnant mothers is still a challenge in Nigeria as a prevalence of home delivery of 78.3% and 38.1% in rural and urban residence respectively was found in a study; and another Nigerian study also found 62% of the women did not utilize health service during delivery.^{2,10} It has also been observed that the chance of maternal mortality is higher among non-users of institutional facilities for delivery services due to poor knowledge of pregnancy complications, among others.¹¹

A systematic review of African and Asian countries revealed that the majority (53.4%) of women in Africa deliver in a facility while the rates are lower in southern Asia (roughly 45%) and southeast Asia (just over 40%).¹² A Nepal study found 62.4 % had their deliveries conducted at home while 37.7% delivering in the health facility; out of this, 57.9% visited the health facility for obstetric emergencies with major problem as prolonged labour, premature labour and malposition.¹³ A southern Ethiopian study using 756 participants also revealed that only 14.5% delivered in the health facility while 83.3% delivered at home. This poor utilization was linked to poor knowledge of need for assistance by health personnel during childbirth, danger signs, birth complications and free delivery services.¹⁴

Overtime, studies have identified myriads of factors which could make use of health facility for delivery by the pregnant women very difficult such as long distance, cost of care, poor quality of service, husband's/family decision, poor counselling among others; and many countries have implemented different intervention programmes including health education to address these challenges.^{1,15,16} Health education intervention has been found to be effective in improving knowledge and utilization of health services as receiving antenatal advice (health education) to deliver at the health facility and on BP/CR was significantly

associated with health facility delivery.^{17,18} Childbirth information received during antenatal influence women's sense of control and empowerment during labour and delivery.¹⁹ Enabling factors to give birth in health facility are being prepared in advance, strengthening health education and sensitization of families and communities regarding the importance of health facility delivery.¹⁸ Antenatal care (ANC) raises awareness about the need for care at delivery, and also gives women and their families a familiarity with health facilities that enables them seek help during crisis.²⁰

Increased frequency of ANC visits is associated with facility delivery as mothers who had four or more visits were 2.7 times more likely to deliver in health facility.²¹ This was attributed to counselling and training during each ANC session focusing on evidence-based practices, identifying risk factors and involving support persons. A study found that women who were not exposed to information on delivery care during their recent pregnancy were 94% less likely to use the health facility for delivery when compared to women who were exposed to information on delivery during their recent pregnancy. The focus of the maternal health information was thought to have contributed to the major reason for home deliveries which is "unaware of onset of labour and delivery" in the study.²² A study also found poor counselling during antenatal sessions as significant number of participants did not obtain classified information on when and where to give birth and were not told anything about danger signs of pregnancy and importance of facility based child birth.²³

Maternal knowledge on benefit of institutional delivery was found to be an independent predictor of giving birth in a health facility as mothers who had delivery plan of their recent pregnancy were found to be significant predictor of health facility delivery and were 3.33 times more likely to deliver at health institutions than those counter parts because they have adequate knowledge about its benefit.²⁴ Another study in Uganda reported health facility delivery improvement of 8% (66% to 73%) in the intervention group while the control group remained unchanged. The claim of fast progress of labour was most common reason among the two groups.²⁵ Another Nigerian study found significant improvement in knowledge level of the participants after a health education intervention about delivery care service but poor willingness to utilize delivery care services ($p < 0.05$).²⁶ A Tanzanian study found increase in knowledge of three or more components of birth preparedness and increase in institutional deliveries in the intervention district.²⁷ Good knowledge helps the women develop positive attitude towards seeking for health assistance.²⁴

However, there is a wide margin between antenatal attendance and delivery in health facilities. An Ethiopian study found that ANC use does not lead to facility delivery.¹⁶ In cross river state, Nigeria, women were found to have poor understanding of birth preparedness and complication readiness and importance of facility delivery

which led to high preference of the services of traditional birth attendant (TBAs).²⁸ Low usage (60.5%) of health facility delivery services was also found in rural area of Ethiopia which was due to difference in awareness and knowledge of facility birth, health education and accessibility of health facility.²⁴

There is, therefore, high unmet need for information among women on functional bowel disorder (FBD) and pregnancy complications. This lack of information hinders women's ability to fully use facility based delivery. Since information is essential for change, health education especially during antenatal period is a veritable tool to improve knowledge of the pregnant women on delivery services. This study therefore, seeks to implement antenatal educational intervention and assess its effect on knowledge and utilization of delivery services among the pregnant women at the primary health facilities in Alimosho LGA, Lagos State.

METHODS

The study adopted quasi-experimental design of two groups pre- and post-intervention among 128 mothers attending antenatal clinic in two primary health centres in Alimosho, Lagos State namely Rauf Aregbesola Flagship primary healthcare center (PHC) and Mosan-Okunola PHC.

Sample size estimation and sampling technique

The sample size for this study was estimated using Leslie Kish (1965) formula for a single proportion while 39% prevalence rate used was based on NDHS 2018 publication of deliveries occurring in health facilities.⁷ A sample size of 128 participants was selected out of 170. Proportionate sampling technique was applied in deciding the representative sample drawn from each facility because they did not contribute equal number to the total population.²⁹

Inclusion criteria

Pregnant women who had given birth at least once (i.e. secundigravidae and multigravida) and in the 35th and 36th of pregnancy were included.

Exclusion criteria

Those who have not delivered before (i.e. primigravida and nullipara) were excluded.

Instrumentation

A self-structured questionnaire was developed and used to obtain information on participants' socio-demographic data, knowledge of delivery services and utilization of delivery services. And yielded a reliability index of 0.76.

Method of data collection

The data collection was done in six (6) weeks from February 2020 to March 2020 and in three major phases of pre intervention, intervention, and post intervention sessions.

Data analysis

Data was sorted, coded and analyzed using Statistical Package for the Social Sciences (SPSS) version 23. Descriptive analysis was done to calculate mean and standard deviation, and proportion for categorical variables. Hypothesis was tested for inferential statistics using student t-test at P value of less than 0.05.

Ethical considerations

A letter of clearance and permission was obtained from Babcock University Health Research Ethical Committee (BUHREC). Lagos State Primary Health Care Board issued a permission letter requesting management of the selected PHCs (Rauf Aregbesola PHC, Mosan-Okunola and Ikotun PHC, Ikotun) to grant access to researcher for data collection. Written informed consent was obtained from all participants before conducting the study.

RESULTS

The pre-intervention knowledge mean score of participants on the facility-based delivery care in the control group was 54.97 ± 10.52 and 52.14 ± 11.09 in the experimental group with a mean difference of 2.83 while the post-intervention knowledge mean score of participants on the facility-based delivery care in the control group was 56.38 ± 11.07 and 104.75 ± 5.86 in the experimental group with a mean difference of 48.37 (Table 2 and 4). There was significant improvement in knowledge of the intervention group from 24 (38.7%) participants who had below average score to none at post intervention (mean difference=48.37, $t_{(115)}=17.98$, $p=0.000$). The difference observed in the post intervention mean score on knowledge of facility-based delivery care in the control and experimental groups could not have happened by chance but due to the educational intervention the participants in experimental group were exposed to.

There was no significant difference between the control and experimental groups at pre-intervention (mean difference=0.16, $t_{(115)}=1.09$, $p=0.239$), but there was a significant difference in the post intervention (mean difference=7.97, $t_{(115)}=10.10$, $p=0.000$) and follow up (mean difference=8.17, $t_{(88)}=9.98$, $p=0.013$) in relation to utilization of participants on facility-based delivery care. Hence, there is a significant difference in the utilization mean scores of participants on facility-based delivery care between post intervention and follow-up in the control group and experimental groups.

Table 1: Pre-intervention level of knowledge of pregnant women on facility-based delivery care in the control and experimental group.

Knowledge of facility-based delivery care	Category of scores	Control		Experimental	
		Frequency	%	Frequency	%
Below average	1-38	17	30.9	24	38.7
Average	39-76	29	52.7	31	50.0
Above average	77-115	9	16.4	7	11.7
Total		55	100.0	62	100.0
Mean ± SD (%)		54.97±10.52 (47.8%)		52.14±11.09 (45.3%)	
Mean difference		2.83			
Maximum score		89.0		86.0	
Minimum score		34.0		37.0	

Table 2: Post-intervention level of knowledge of pregnant women on facility-based delivery care in the control and experimental group.

Knowledge of facility-based delivery care	Category of scores	Control		Experimental	
		Frequency	%	Frequency	%
Below average	1-38	15	27.3	-	-
Average	39-76	30	54.5	11	17.7
Above average	77-115	10	18.2	51	82.3
Total		55	100.0	62	100.0
Mean ± SD (%)		56.38 ±11.07 (49.0%)		104.75 ±5.56 (91.1%)	
Mean difference		48.37			
Maximum score		89.0		115.0	
Minimum score		37.0		70.0	

Table 3: Independent t-test for difference in utilization mean scores of participants on facility-based delivery care between control and experimental groups in baseline, post intervention and follow up tests.

Variables		N	Mean	Standard deviation	degree of freedom	t-value	Mean difference	P
Pre-intervention	Control	55	13.33	3.41	115	1.09	0.16	0.239
	Experiment	62	13.17	4.21				
Post Intervention	Control	55	13.47	3.61	115	10.10	7.97	0.000
	Experiment	62	21.44	3.58				
Follow-up	Control	31	13.39	3.65	88	9.98	8.17	0.013
	Experiment	49	21.56	3.61				

DISCUSSION

The findings of this study revealed that the pre-intervention mean knowledge score of the pregnant women is moderate and this could be related to fact that majority of the respondents attained tertiary level of education. This finding is in agreement with study on delivery and postnatal care services use among mothers in Ethiopia, in which they found higher level of education being associated with better information processing skills and improved cognitive skills and values.³⁰ Also, the study found a significant post-intervention mean knowledge score of experimental group which is similar to a study that found health education intervention to positively have impact on knowledge of the experimental group.²⁶ This was also corroborated the study that revealed improved maternal health knowledge after intervention.²⁰ Another

study in Nigeria is also in agreement with the findings of this study, they found that health education intervention respecting ANC services had positive impact on pregnant women’s knowledge regarding ANCS for the experimental group.³¹

This findings also showed a low pre-intervention utilization and a significant difference in the post intervention and follow up in relation to utilization of facility-based delivery care among participants. This implies that so many of the participants had their previous births outside health facilities. This finding is similar to a study that found pre-intervention health facility utilization rate for delivery of 47% and 42% for the control and experimental groups respectively and that health education was effective in improving utilization of health facility delivery services.¹⁷

The findings of the pre-intervention facility utilization for delivery corroborates a study in Ethiopia that found poor use of health facility for delivery and linked it to mothers' poor knowledge of need for assistance by health personnel during childbirth.¹⁴ Similarly, a Ghanaian study on predictors of health facility delivery by women in rural found that women who were not exposed to information on delivery care during their recent pregnancy were 94% less likely to use the health facility for delivery when compared to women who were exposed to information on delivery during their recent pregnancy.²² On the contrary, another study found 69.4% of their respondents had their previous deliveries in the health facility while 30.6% delivered outside the health facility and this they explained occurred following maternal satisfaction due to good care.³² Health Education therefore, enables the woman to develop positive perceptions towards facility-based delivery and this improves her self-efficacy which influences perceived barriers, increases her capacity to execute healthy behaviour and makes committed to a plan of care.³³ Health education the woman receives during antenatal visits increases her self-efficacy and therefore, increases her likelihood of committing to delivering in the health facility.

CONCLUSION

The study revealed moderate pre-intervention level of knowledge and low level of utilization of facility-based delivery services among the control and experimental groups. Following intervention with the antenatal education programme, there was a significant improvement on the mothers' knowledge and utilization of health facility delivery services among the experimental group. In order to promote utilization of facility-based delivery services, it is therefore recommended that antenatal education should be strengthened and intensified at all levels of healthcare especially at the PHC level while applying varied teaching techniques with appropriate teaching aids.

Limitations

The major constraint faced was the timing of the research which made the contact days with the participants for antenatal education package few.

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