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Impact of Health Education on Knowledge and Access to Delivery Care Services by Women among Edu Local Government Area, Nigeria

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Abstract

Background/Objective: Even with the best possible antenatal screening, any delivery can become a complicated one requiring emergency intervention. Generally, health education is always required to improve health situations of vulnerable populations. This study was conducted to find out the impact of health education on the knowledge and access to Delivery Care services among women of childbearing age in Edu Local Government Area of Kwara State, Nigeria.

Materials and Methods: Using a quasi-experimental design, a researcher-designed questionnaire was used to collect data from a purposive sample of 120 women, divided into two groups: an experimental and a control group made up of 60 women each. A split-half test of reliability was used to determine the reliability of the instrument. The results were analyzed using descriptive (frequencies, mean and standard deviation) and inferential (t-test, Alpha level of 0.05 used as a criterion) statistics were used to answer research questions and test hypotheses respectively.

Results: A significant improvement in knowledge level among WCA about delivery care services after health education intervention programme in experimental group over those in control group after the intervention was found. Findings also indicate a very poor willingness of WCA to utilize delivery care services in both experimental group and control group before and after HEIP.

Conclusion: Health education intervention programme had positive impact on the knowledge of women of childbearing age about delivery care services but there was no significant impact on their willingness to access delivery care services in Edu local Government Areas.

Recommendations: Health education intervention programmes should be intensified to create further increase health awareness and knowledge while efforts should be made to encourage WCVA to patronise available delivery care services being provided. This may require further research to identify motivator factors to make WCA become willing.

Keywords: Delivery care services; Women of childbearing age; Knowledge and access delivery care services

Introduction

In recent times, more attention has been focused on issues of maternal health care services in Nigeria. Many programmes have been launched at national and international levels on women's health, with particular reference to reduction in maternal morbidity and mortality in developing countries especially Nigeria. Maternal and child morbidity and mortality are on the increase in most developing countries especially in Nigeria, the increase showing maternal mortality ratio of 1:100 higher than the regional average, despite available human and material resources indicating the ugly trends in maternal health situation in Nigeria [1]. Delivery periods are periods that commenced as soon as the labour sets in until period the baby is born. This period is critical to both mother and the unborn child as any slight mishandling of the process of delivery will have a devastating effect on both the health of mother and that of the unborn child. The need for presence of a skilled birth attendant (trained midwife), at this period is critical for both mother and the newborn (WHO) [2]. It has been reported that Africa accounts for the highest burden of mortality among women and children in the world.

In Nigeria, the use of health facilities during delivery by pregnant mothers is still very low and maternal morbidity and mortality remain a public health problem; the causes which may be attributed to several factors including demographic, socio-economic, culture, obstetric and health system factors [3]. Most maternal deaths seem to occur between the third trimester and first week after delivery. This however, necessitates skilled attendant at the time of delivery and access to emergency obstetric care which remain the most effective measures to reduce morbidity and mortality [4]. Improved maternal health is achieved through skilled care at every birth and adequate management of pregnancy, childbirth and the post-partum period [5]. In a study by Moore et al. [6], it was concluded that level of education influences the level of utilization of health facilities for delivery as more than two third of the women using the services were found to have formal

education. Furthermore, the Nigeria Demographic and Health Survey [7] reports shows that only 10% of deliveries to mothers with no education occurred in health facilities compared to 90% of deliveries to mothers with education.

Many women of childbearing age in Edu LGA deliver their babies at home attended to by unskilled attendants in unhygienic conditions. Delivery of babies in such filthy environments exposed both the mother and the new born baby to high risk of infections and many lose their lives shortly after delivery of baby as a result of complications arising from delivery. The prevalence of maternal death is on the increase in Edu LGA. In 2015 the Health Records of Edu LGA Information Unit showed that about 25 women of childbearing age (WCA) lose their lives during and shortly after delivery. Based on the observed maternal and child mortality and morbidity in Edu LGA, this study examined the impact of health education intervention programme on the knowledge and willingness of women of childbearing age to access delivery care services before and after HEIP in Edu Local Government Area of Kwara State, Nigeria.

Research questions

What is the knowledge level of women of childbearing age about delivery care services before and after health education intervention programme (HEIP) in health centres of Edu Local Government Area of Kwara State?

What is the impact of health education intervention programme (HEIP) on women of childbearing age willingness to access delivery care services in health care centers of Edu Local Government Area of Kwara State?

Hypotheses

HO1: Health education intervention programme has no significant impact on the knowledge of women of childbearing age about delivery care services in Edu LGA of Kwara State.

HO2: Health education intervention programme has no significant impact on the on the willingness of women of childbearing age to utilize delivery care services among WCA in experimental group and control group in Edu LGA of Kwara State.

Material and Methods

Design

This study is a quasi-experimental research design using pre-test and post-test control group design. The aim of using pre-test and post-test control group design is to compare two groups that is, women of childbearing age exposed to health education intervention programme in experimental group with those not exposed to the treatment (control group), to examine the impact of health education intervention on their knowledge and accessibility of delivery care services among women in Edu Local Government Area of Kwara State.

Population and sample

The population for this study consisted of all women of childbearing age in Edu Local Government Area of Kwara State, Nigeria. Edu LGA has total populations of 201,642, out of which 97,602 are females (National population Census, 2006).The LGA comprises of three traditional districts with ten (10) political wards and sixty five (65) health facilities located in all communities of the LGA. Eleven (11) out of sixty five (65) health facilities provide maternal health services among others which did not offer such services. The sample for this study includes 120 WCA who were either pregnant or has one or more children drawn from 160 households in the two districts of Edu LGA.

A multiple stage sampling method was used in this study, that is, six (6) political wards were selected by simple random sampling, that is, three from Lafiagi as experimental group and other three wards were selected from Tsaragi district used as control group. The households were selected using systematic sampling procedure from each of the political ward that is, researchers and research assistants conducted a house numbering in each ward and the selection of houses were made from the buildings list in each ward at specified intervals of every third building from a starting number depending on the length of the street. In each of the household selected, there were two or more WCA who were pregnant or has one or more children. One hundred and twenty (120) WCA were purposively sampled from 160 households in the two districts for the study. Sixty (60) WCA from Lafiagi were used for experimental group while, sixty (60) WCA from Tsaragi were used as control group respectively.

Instrument for data collection

The research instrument was a 25 item researchers-designed questionnaire on knowledge and accessibility of delivery care service. The questionnaire consisted of three sections: Section A sought information on the knowledge of WCA about delivery care services designed in the form of "Yes" or "No" answer mode, while Section B was designed into three (3) point responses of modified Likert type scale that is: A: Always (5 points), ST: Sometimes (3 points) and NA: Not Always, scored (1 point) that was used to obtained information from the respondents in Edu LGA of Kwara State.

This instrument covered all components of Delivery Care Services (DCS) to ensure face and content validity. The questionnaire was translated into Nupe language and used as Interview Schedule for WCA who could neither read nor write in English Language. The reliability of the instrument was determined by pre-testing using Split-half test of Cronbach statistic of reliability and result of coefficient of reliability of 0.68 was obtained.

Data collection procedure

Approval for the conduct of this study was obtained from the authorities of Edu LGA and community leaders of the study areas. A copy of the permission letter was read to women for their consent at various households selected for the study. The data collection was in three phases which includes pre-intervention phase (pre-test), intervention phase and post intervention phase (post-test)

Pre-intervention

The pre-intervention phase, involved advocacy visits community leaders and the heads of the households as well as sampling of the women for the study. The research assistants were recruited to help in administering the question items to women of childbearing age as pre-test.

Pre-intervention activities: Health personnel which comprises of nurses and community health educators working in the health centers of the target communities were selected and trained as research assistants by the researchers. Three types of educational materials were

used to communicate health messages that is, pamphlet and posters, docudrama (video documentation) and a delivery care services post sign charts. The first week was used for advocacy visit to the community leaders in the three study areas to seek permission and cooperation for the conduct of the study.

The husbands and household heads where the WCA residents were visited and the purpose of the study was explained to them. On the second week, a day and time was fixed for the meeting with the research assistants following development of the instructional materials and a training workshop was conducted for research assistants. Another meeting was scheduled the second day of the week with the researchers and women of childbearing age who volunteered to participate in the study. The same pre-tested instrument using semi-structured questionnaire was administered on I20 consenting WCA that is, 60 women in the experimental group and 60 women in the control group. This interview schedule was used by the researchers and research assistants to obtained information from the WCA in the communities on the pre-tests day.

Intervention phase

On the first day of intervention, women childbearing age (WCA) was briefed separately on the purpose of the study and they were allowed to discuss freely and ask questions for clarifications by the researchers. The WCA were grouped into two based on districts; one served as the experimental group (60 women from Lafiagi districts) who had health education intervention on delivery care services and the control group (60 women from Tsaragi district) were given health education intervention on transmission and control of sexually transmitted infections. The grouping was done on district basis which are about 160 kilometers apart to control exchange of information among women in the two groups. The degree of separation of women in the experimental and control groups might not be perfect because the districts share common boundaries and this made randomization of the subjects in the groups impossible. However, the decision on which district served as experimental or control was determined by the maternal health care services utilization outcome as revealed by the health information unit of the LGA.

The community–based health education intervention was conducted for the period of ten weeks that is, second week to eleventh week of the study period. The health education intervention programme (HEIP) started with a video show and health teaching on Delivery Care Services (DCS) on the experimental group and health teaching on transmission and control of sexually transmitted infections on control group every Thursdays and Sundays at the village primary school and Town halls designated for the intervention throughout the intervention sessions. The researchers met with the experimental and control groups twice in every week for 45 minutes health education intervention programme per month at community level for a period of ten weeks using lecture and discussion methods of health education. At the end of the ten weeks health education intervention programmes, a week revision of all the topics taught was done on the eleventh week on both experimental and control groups respectively.

Post Intervention Phase

The post-intervention session was conducted on the twelfth week of intervention phase, the researchers and research assistants re-administered the same sets of questionnaire/interview schedule used during pre-test phase to women of childbearing age in both experimental and control groups at community levels in the two districts.

Data analysis

Descriptive statistics of mean and standard deviation were used to answer research questions and inferential statistic of t-test was used to test the null hypotheses at 0.05 level of significance, used as a criterion for either rejecting or retaining the null hypotheses. The points scored by respondents on knowledge and utilization were summarized using percentage mean score from their responses thus: (sum of scores on items)/(3 × No. of items) × 100%. Knowledge of the respondents on the items on delivery cares services (DCS) were categorized into two, that is, high knowledge for respondents who chose yes and low knowledge for the respondent that chose no. On the other hand, utilization was categorized into three that is, very high utilization if the respondent chose always, high utilization if the respondent chose not always and poor utilization if the respondent chose not at all.

Table 1 shows the demographic characteristics of women of childbearing age (WCA) with regards to age, number of children, educational qualification and religion. Women with mean age of 28.7 constituted majority (58%) of the respondents in both the experimental group and the control group. it was evidence that these WCA were young and in their early age of reproductive stage. Greater number of WCA who are married, constituted 98% of the respondents and 68% of them have 1-3 children. It is however; possible that WCA in Edu LGA had experiences of child birth as well as issues on maternal health services utilization in the past.

Age interval	Frequency	Percentage
14-24	28	23.3
25-34	53	44.2
35-44	28	23.3
45 and above	11	9.2
Total	120	100
Marital Status		
Married	118	98.3
Divorce	2	1.7
Total	120	100
Number of Children		
1-3	82	68.3
4-6	24	20
5-6	6	5
7-8	8	4.7
Total	120	100
Educational qualification		
Primary	17	14.2
Secondary	17	14.2
Tertiary	12	10

Quranic school	38	31.7
None	36	30
Total	120	100
Religion		
Christianity	29	24.2
Islam	91	75.8
Traditional	0	0
Total	120	100

Table 1: Demographic characteristics of respondents.

About 24.2% of women have attended secondary school education and above compared with 31.7% who had Quranic education and 30% who did not attend any form of educational institution. This indicates that a great number of WCA in both experimental group and control group are illiterate in terms of Western (English) Education or Eastern (Quranic) Education. The women in both groups practices two major religions in the two districts, that is, Christianity (24.2%) and Islam (75.8%) with Muslims respondents constituted majority in the study.

Research question 1: What is the knowledge level of women of childbearing age about Delivery Care Services before and after health education intervention programme in Edu Local Government Area of Kwara State?

Table 2 shows the summary of mean and standard deviation scores on knowledge of women of childbearing age before and after intervention about delivery care services. The pre-intervention showed mean scores of 67.70 for the experimental group and 61.46 for the control group, while after intervention mean scores was 95.62 for the experimental group and 56.87 for the control group respectively. This result implied that there was an improvement in knowledge about delivery care services after health education intervention programme among WCA in experimental group over those in control group after the intervention.

		Pre-intervention		Post-intervention	
Group	**N**	**X ± S.D**	**S.E**	**X ± S.D**	**S.E**
Experimental group	60	67.70 ± 31.07	4.01	95.62 ± 6.01	0.77
Control group	60	61.46 ± 34.08	4.4	56.87 ± 34.01	4.39

Table 2: Summary of mean and standard deviation scores on knowledge of women of childbearing age about delivery care services.

Research question 2: Will Health Education Intervention Programme have impact on Women of Childbearing Age on Utilization of Delivery Care Services in Edu Local Government Area of Kwara State?

Table 3 shows summary of mean scores on utilization level of deliver care services among WCA before and after HEIP. The pre intervention shows mean scores of 38.33 for the experimental group and 30.51 for the control group, while post intervention mean scores showed 41.09 for the experimental group and 26.81 for the control group respectively. This result indicates a very poor willingness of WCA to utilize delivery care services in both experimental group and control group before and after HEIP. These findings showed no significant impact of health education intervention on the willingness of WCA to utilize delivery care services.

		Pre-intervention		Post-intervention	
Group	**N**	**X ± S.D**	**S.E**	**X ± S.D**	**S.E**
Experimental group	60	38.33 ± 21.18	4.27	41.09 ± 27.23	3.25
Control group	60	30.51 ± 19.73	3.33	26.81 ± 20.91	3.73

Table 3: Summary of mean and standard deviation scores on the utilization of delivery care services among women of childbearing age.

Hypothesis 1: Health Education Intervention Programme (HEIP) has no significant impact on the knowledge of Women of Childbearing Age about Delivery Care Services in Edu LGA.

Table 4 shows pre-intervention on experimental group which has mean of 67.70 while Post-intervention has mean of 95.62 with t-value of 6.83 which is greater than table value of 1.96. The null hypothesis is hereby rejected at 0.05 level of significance. This implies that the health education intervention had positive impact on the knowledge of women of childbearing age about delivery care services.

Hypothesis 2: Health Education Intervention Programme will not have significant impact on the willingness of WCA to utilize deliver care services in the health centers in Edu LGA. Kwara State.

Experimental Group	**X**	**S. D**	**S.E**	**df**	**t**	**P value**
Pre intervention	67.7	31.07	4.01	59	6.83	0.000
Post intervention	95.62	6.01	0.77			
t=6.83, df: 59, p<0.05						

Table 4: Summary of t-test on delivery care services among experimental group.

Table 5 shows pre-intervention mean and standard deviation of 38.33 and post intervention mean of 41.09 on experimental group with

t-value of 0.36. Since t-calculated (0.36)<t-tabulated (1.96), the null hypothesis is hereby accepted at 0.05 level of significance. This implied that the intervention had no significant impact on the willingness of WCA in the experimental group to utilize delivery care services at the health centers in Edu LGA.

Experimental Group n=60	X	S.D	S.E	df	t	p-value
Pre-Intervention	38.33	21.18	4.27	59	0.36	0.62
Post Intervention	41.09	27.23	3.25			
t=0.36, df: 59, p<0.05						

Table 5: Summary of t-test on the utilization of delivery care services among women of childbearing age.

Discussion

This study examined the impact of Health Education Intervention Programme (HEIP) to improve women of childbearing age (WCA) knowledge and utilization of delivery care services. This study revealed women of childbearing age with mean age of 28.7 were young and in their early reproductive age. Greater numbers of WCA were married and 68% of them have 1-3 children. It is however; possible that WCA in Edu LGA would have had experiences of child birth as well as on delivery care services utilization in the past. Majority of WCA in both experimental group and control group who were Muslims could not read nor write in English Language as only 24.2% of them attended secondary school education and above. This implied that many WCA could not have benefit of health messages communicated in English Language.

The findings of this study at the base line knowledge of women of childbearing age about delivery care services before HEIP in both experimental group and control group showed a high level of significant in the mean score particularly on the WCA knowledge about signs of labour and the importance women attached to delivery of babies at health centers respectively. There was also a significant increase in knowledge about delivery care services available in ANC centers, especially in the areas of blood screening and urine testing sessions which offered the health workers opportunities to monitor the progress of labour and health status of both the mother and the unborn baby. This level of knowledge among WCA about delivery care services before HEIP may probably been influenced by several factors such as their previous experiences in ANC services attendance and childbirth in health facilities which subsequently determine their continual patronage of that facility for delivery services. This study agreed with reports by Amooti et al. [8], Paul et al. [9], that women tend to deliver with the same provider if a previous delivery went well and tend to change when they are dissatisfied. The deliveries of babies by WCA also depend to a large extend the attitude of health worker, economic status and social support from the husbands and family members.

Health education intervention programme in this study showed positive impact on the knowledge of WCA in experimental group about delivery care services, as demonstrated by increased mean score in WCA ability to identify signs of labour and high level of knowledge about the importance of delivery at health center after HEIP. Subsequently, WCA knowledge has also improved with corresponding increased mean scores in awareness about delivery care services and caesarian section showing an improvement shift from pre-intervention to post intervention. The finding of this study implied that women high level of knowledge about delivery care services as well as on the complications that may arise during or shortly after delivery of baby has awaken WCA awareness to take action on measures to avert such impending dangers related to pregnancy. However, in the control group WCA knowledge about delivery care services showed no significant difference before and after HEIP. This finding support theory of reason action by Ajzen et al. [10] and Rogers [11] that intention of a person to perform a specific behavior is a function of his or her attitude and influence of social environment which may be positive or negative towards a given behavior. This finding implied that exposure of WCA to ten weeks of HEIP has influenced and modified their attitude towards delivery care services provided in the community.

The result of this study corroborate the study by Phoxay et al. [12] that influence of knowledge on health behaviour has been tested by Mann-Whitney non-parametric statistic in Southern Laos they find out the linkage between knowledge and utilization of health care services. This test uses the mean of ranks to determine whether the maternal health care user-group and the non-user group have different characteristics in terms of women's knowledge about pregnancy complication. They found that the mean of rank calculated was significantly different between two groups separated (maternal health care user-group and non-user group) and concluded that, if the mean of rank is significantly different between two groups then the two groups are considered to have dissimilar characteristics. This finding of this study further supported a similar study on impact of HEIP about breast cancer among Women in Egypt by Abed [13] they observed that Women's knowledge about breast self-examination (BSE) show highly significant improvement in the frequency and appropriate time from pre to post-test.

In the contrary this findings showed no significant impact of health education intervention on the willingness of WCA to access delivery care services when compared with their knowledge. The WCA lukewarm attitudes towards accessibility of delivery care services may be due to high cost of delivery care, poor attitudes of health workers and lack of social support from the families. This result agreed with Falkingham and NPC reports [14,15] that despite the fact that medical services were accessible and free of charge, women in Tajikistan prefer to deliver at home because they perceive available medical services to be of low quality and unsafe. The finding of this study also supported Moore et al. [6] study who opined that respondents' lack of utilization of health facility for delivery was linked with their unfriendliness encounter in the previous delivery.

But this study was slightly disagreed with a study by Adewoye et al. [16] on the knowledge and willingness to utilize delivery care services among women of childbearing age in Ilorin-east Local Government Area, they found that more than two thirds of the respondents (87.7%) were aware of delivery care services and are willing to use then following pre and post interventions. Although, since the impact of HEIP on WCA could not be felt immediately, fifteen out of sixty WCA constituting 25% of study population (experimental group) in their third trimester delivered babies at the health center during the intervention period, this showed that intervention will have positive impact on WCA utilization of delivery care services on the subsequent deliveries. This finding was in line with position of theory of reason action by Ajzen et al. [17] that attitudes are function of beliefs, if a person believes that performing a given behaviour will lead to on the

whole positive outcomes, and then she will hold a favourable attitude toward performing that behaviour.

It is important to note, based on the above findings, that WCA in Edu LGA with adequate and consistent health education during ANC visits, the WCA traditional and religious beliefs about the use of DCS will be corrected and this will further improve the utilization of various delivery care services in communities of Edu LGA.

On the utilization of delivery care services the post intervention showed a significant impact of HEIP on experimental group compared with low mean score for control group. This result implied that there was no significant difference on the mean scores of pre and post intervention, which implied that despite the intervention about delivery care services, HEIP had no significant impact on the willingness of women of childbearing age to utilize delivery care services in Edu LGA of Kwara State. The findings of this study justified study conducted in Mexico in year 2000, where a health education intervention showed, 33% of the study population knew about EC, as against only 20% in 1997 before the introduction of the health education program [18]. This implies that further improvement in knowledge of EC could be achieved with repeated reinforcement of the health education.

Conclusion

Health education intervention programme in this study using Delivery Care Services (DCS) teaching protocol had positive impact on the knowledge of women of childbearing age about DCS in Edu Local Government Areas but with no significant impact on the willingness of WCA to utilize delivery care services.

Recommendations

Governments at all levels of health care especially in Edu LGA, Kwara State Ministry of Health and Non-governmental Organizations need to strengthen and intensify Health Education Intervention Programmes about delivery care services in the primary health care centres in the communities to encourage WCA to utilize Delivery Care Services. This is to improve and sustain knowledge of WCA gained during HEIP about delivery care in the communities of Edu LGA, Kwara State and improve willingness of women of childbearing age visits to health centres for delivery and reporting early any obstetric problem experienced during pregnancy. Health education intervention programmes especially on maternal health services should be packaged to include faith-based interventions on the awareness of WCA about utilization of delivery care and delivery care services in Edu LGA.

Limitation of the Study

This study was limited to women of childbearing age in only two selected traditional districts of Edu Local Government of Nigeria. In addition, this study could only use a 25-item questionnaire for data collection on a samples size of only 120 women of childbearing age, made up of 60 women in experimental group and 60 in control group. These are the main limitations of this study. However, despite these, because of the quasi-experimental nature of the study, findings are quite relevant in assessing the impact of health education on the knowledge and access to Delivery Care services among women of childbearing age in the Local Government Area in Kwara State, Nigeria.

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