

## Research Article

# Impact of Health Education Intervention on Knowledge and Utilization of Postnatal Care Services among Women in Edu Local Government of Kwara State, Nigeria

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## ABSTRACT

**Background:** This study examined the impact of health education intervention (HEI) on the knowledge and utilization of postnatal care services among women in Edu, Nigeria.

**Methods:** A quasi-experimental research design using pre-test and post-test control group to examine impact of HEI among women. Researchers-developed questionnaire was used for data collection. Intervention: One hundred and twenty women were exposed to ten weeks health education intervention; sixty (n=60) experimental group exposed to postnatal care services lectures and sixty (n=60) control group were exposed to HIV/AIDS prevention lectures. The results were analyzed using descriptive and inferential statistics to answer research question and test null hypothesis at 0.05 significant levels.

**Results:** The findings showed an improvement from pre intervention mean scores of 64.26 to post intervention scores of 98.15 for the experimental group against 68.88 post intervention mean score of control group. While, the pre intervention mean score of utilization was 56.67 compared with post intervention mean scores of 92.91 for the experimental group and 61.04 for the control group utilization This showed positive impact of health education intervention on knowledge and willingness of women of childbearing age to utilize postnatal care services in Edu LGA.

**Conclusion:** Study concluded that, health education intervention had positive impact on knowledge and willingness of WCA to utilize postnatal care, and the knowledge gained need to be sustained to improve WCA health seeking behaviour in the communities of Edu LGA.

**Keywords:** Edu local government area; Health education intervention; Knowledge and Utilization; Nigeria; Postnatal care services; Women of childbearing age

## INTRODUCTION

The global maternal mortality ratio declined by 44 per cent-from 385 deaths to 216 deaths per 100,000 live births, according to UN inter-agency estimates from 1990 to 2015. This translates into an average annual rate of reduction of 2.3 per cent. While development was impressive, it is still less than half the 5.5 per cent annual rate needed to achieve the three-quarters reduction in maternal mortality targeted for 2015 in Millennium Development Goal 5 <sup>[1]</sup>. Although levels of maternal mortality remain unacceptably high in sub-Saharan Africa especially in Nigeria. Almost all maternal deaths can be

prevented, as evidenced by the huge disparities found between the richest and poorest countries <sup>[1]</sup>. The lifetime risk of maternal death in high-income countries is 1 in 3,300, compared to 1 in 41 in low-income <sup>[2]</sup>.

In spite of numerous efforts by the government and various agencies in Nigeria, the Maternal Mortality Rate (MMR) is still unacceptably high based on a report of the maternal health indicators in Nigeria, shows that the maternal deaths ratio was still 243 per a 100,000 live births; <sup>[3]</sup> while in Kwara State of Nigeria, the MMR was estimated to be 532 per 100,000 live births; <sup>[4]</sup>. The very low maternal and infant morbidity and mortality rates reported in developed countries have been attributed to

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the higher utilization of modern maternal health services especially post natal care services [5].

Maternal mortality refers to deaths due to complications from pregnancy or childbirth, while postnatal care begins with the onset of the postpartum period; it is also referred to as the puerperium. It is generally defined as a 6- to 8-week period beginning with the delivery of the placenta [6].

Maternal health has a high priority on the global agenda mentioned under Millennium Development Goal (MDG) 5 which aims to improve on maternal health, the target is to reduce by three-quarter the Maternal Mortality Rate (MMR) between 1990 and 2015 [7]. Hence, Postnatal Care (PNC) is one of the most important maternal health care services for not only prevention of impairment and disabilities among the women of childbearing age, but also a reduction in maternal mortality rate. In many countries, maternal and child health intervention programmes are strengthened to provide routine PNC services to all new-borns and their mothers in the first days after birth. Other studies viewed postnatal care services as the major interventions aimed at reducing maternal and new-born deaths worldwide [8].

In Nigeria, the use of health facilities during and shortly after delivery by WCA is still very low and maternal morbidity and mortality remains a public health problem [9]. This low level use of health facilities may be influenced by several factors including demographic, socio-economic, culture, obstetric and health system factors [10].

Health education intervention is a key priority among basic components of primary health care (PHC) according to the Alma Ata Declaration of 1978 report and as was also contained in the patient bill of right that the client/patient has the right to accurate and easily understood information about his/her health plan. Based on these reports, it is necessary to include WCA when deciding the type of treatment to be given to her by the health care professionals at health facilities [11,12]. Various studies were conducted on the impact of health education on family planning knowledge, attitudes, and practices among married women in military barrack, in Nigeria and also study on attitude of student towards organ donation and transplantation among students of University of Maiduguri, and the reports showed significant impact of health education intervention programmes on the knowledge and willingness of respondents to participate on health activities [13,14].

Many women of childbearing age in Edu LGA do not visit post natal clinics (48 hours) following the delivery of the baby so many delivery and post-delivery complications are not identified on time and that lead to so many obstetrics complications that account for loss of lives after delivery of baby. Between January and June 2015, about fifteen (15) WCA lost their lives shortly after

delivery of life babies in the three districts of the Local Government [15]. Based on the observed maternal and child morbidity and mortality rate among WCA in Edu LGA, this study was designed to determine the impact of health education intervention programme on the Knowledge and willingness of women of childbearing age to utilize postnatal care services before and after HEIP in Edu Local Government Area of Kwara State, Nigeria

## MATERIALS AND METHODS

### Study design

This study is a quasi-experimental research using pre-test and post-test control group design. The aim of using pre-test and post-test control group design is to compare 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 knowledge and utilization of postnatal care services among women in Edu Local Government Area of Kwara State.

### Study population and setting

The population for this study consisted of women of childbearing age drawn from the total population of 97,602 females in Edu LGA [16]. The Edu Local Government Area (LGA) is one of the sixteen Local Government Areas in Kwara State, Nigeria which is located at about 186 Kilo meter to the northern part of the state. The LGA comprises of three traditional districts with ten political wards and sixty five health facilities located in all communities of the LGA. Eleven out of sixty five health facilities provided maternal health services among others which did not offer such services. The sample for this study included 120 WCA who were either pregnant or has one or more children in the 160 households of the two districts in Edu LGA.

### Sampling technique and sample size

A multiple stage sampling method was used in this study, in stage 1; six political wards were selected by simple random sampling, that is, three from Lafagi used as experimental group and other three wards were selected from Tsaragi district used as control group. In stage 2; 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 or on the total number of houses on each street. In each of the household selected that have WCA with one or more children or pregnant were included in the study and any

of the household that did not have a pregnant woman or woman with one or two children was not included in the study. In Stage 3; since this study was a quasi-experimental research, which is similar to true experimental research, one hundred and twenty (120) WCA were purposively sampled from 160 households in the two districts for the study that is, sixty WCA from Lafiagi used for experimental group and sixty WCA from Tsaragi were used as control group respectively.

### The instrument

The research instrument was a 25-item researchers-designed questionnaire on knowledge and utilization of postnatal care service. The questionnaire consisted of two sections; Section A sought information on the knowledge of WCA about postnatal care services designed in the form of Yes or No answer mode while, section B was designed in Likert type scale modified into three point responses that is, A-Always (5points), ST-Some Times (3points) and NA-Not Always-scored (1 point) which are used to obtain information about utilization of PNC services among WCA in Edu LGA of Kwara State. The reliability of the instrument was determined by pre-testing using split-half test of Cronbach statistic of reliability. The coefficient of reliability of 0.68 was obtained from a pilot study conducted at Patigi LGA. a neighbouring community that has similar characteristics with EduLGA the studied area.

### Data collection procedure

The ethical 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 that is, 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 head 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 maternal health

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 on 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 researchers-designed questionnaire was administered on 120 consenting WCA to obtain information from 60 women in the experimental group and 60 women in the control group on the pre-tests day.

### Intervention phase

On the first day of intervention, WCA were briefed and 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 postnatal 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 hence the choice of quasi-experimental study. 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 postnatal care services (PNCS) 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 sessions. The researchers met with the experimental and control groups twice in every week for 45 minutes health education intervention session 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. The points scored by WCA on knowledge and utilization were summarized using percentage mean score:

$$\frac{\text{sum of scores on items}}{3 \times \text{No. of items}} \times 100\%$$

Knowledge of WCA on the items on ante natal cares (PNC) services 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.

## RESULTS

Group	Pre-intervention			Post-intervention			
	N	X	± S.D	S.E	X	± S.D	S.E
Experimental group	60	64.26	± 31.56	4.07	98.15	± 5.47	0.7
Control group	60	76.67	± 29.41	3.8	68.88	± 20.12	2.59

**Table 1:** Summary of mean and standard deviation scores on knowledge of women of childbearing age about post natal care service.

Table 1 showed the pre intervention shows mean scores of 64.26 for the experimental group and 76.67 for the control group, while post intervention shows scores of 98.15 for the experimental group and 68.88 for the control group.

Group	Pre-intervention			Post-intervention			
	N	X	± S.D	S.E	X	± S.D	S.E
Experimental group	60	56.67	± 39.62	3.88	92.91	± 19.81	2.55

Control group	60	58.54	± 30.11	3.84	61.04	± 36.64	4.73
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**Table 2:** The summary of mean and standard deviation scores on the utilization of post natal care services among WCA.

Table 2 shows the utilization pre intervention mean scores of 56.67 for the experimental group and 58.54 for the control group; while post intervention means scores were 92.91 for the experimental group and 61.04 for the control group.

Experimental Group (n=600)	X	S.D	S.E	df	t	p-value
Pre- intervention	64.26	31.57	4.07	59	8.19	0
Post-intervention	98.15	5.48	0.7			

t=8.19, df=59, p<0.05

**Table 3:** Summary of t-test on the knowledge of post natal care services among experimental group.

Table 3 above shows pre-intervention mean of 64.26 and post intervention mean of 98.15 with t-value of 8.19 which is greater than table value of 1.96, the null hypothesis is hereby rejected at 0.05 level of significance.

Experimental Group (n=60)	X	S.D	S.E	df	t	p-value
Pre Intervention	56.67	39.63	3.88	59	6.34	0
Post Intervention	92.92	19.81	2.55			

t=6.34, df 59, p<0.05

**Table 4:** Summary of t-test on the Utilization of Post Natal Care Services among WCA in Experimental Group.

Table 4 shows pre-intervention mean of 56.67 and post-intervention mean of 92.92 with t-value of 6.34. Since t-calculated (6.34) > t-tabulated (1.96), the null hypothesis is hereby rejected at 0.05 significance level.

## DISCUSSION

This study examined the impact of health education intervention programme on knowledge and utilization of post natal care services among women of childbearing age in Edu Local Government, Kwara State. The findings on the knowledge of WCA about post natal care before health education intervention programmes showed a significantly high mean score especially in the areas of personal and environmental hygiene and provision of routine immunization programmes received at the health centre. This implied that WCA have average level baseline knowledge and awareness about various postnatal care services and their importance. However, the findings after health education intervention on WCA, showed much higher improvement on their knowledge about PNC services. This indicated a positive impact of health



education intervention on the knowledge of WCA in Edu LGA of Kwara State.

This study showed pre-intervention mean score lower than the post-intervention mean score, as this study recorded poor attendance of postnatal clinic 24 hours after delivery by WCA before the intervention, this is not surprising because most women do not visit health centres for postnatal care services shortly after babies are delivered safely. The women inability to visit postnatal clinic for care accounted for many delivery complications that arise following the birth of the new baby. This implied that many delivery and post-delivery problems were often not reported for early identification for immediate treatment and this may probably result to Obstetric complications following delivery of babies among WCA in Edu Local Government Area. But the story was different after the HEIP which showed significant improvement on the willingness of WCA to utilize PNCS.

This finding supported similar study on knowledge and willingness to utilize antenatal care services among women of childbearing age in Ilorin-east Local Government Area, it reported that more than two thirds of the respondents (87.7%) were aware of antenatal care services and are willing to use then following pre and post interventions [17]. A study on KAP of women about maternal health services in Bla; Mali, is also in agreement with this study which observed that over 80 percent of women and household heads interviewed perceive antenatal care to be essential for all women, while, 60 percent of respondents claimed that postnatal care was essential for all women [18]. But this finding is contrary to study on comparative analysis of the use of maternal health services between teenagers and older mothers in sub-Saharan Africa which observed that use of postnatal care among women are considerably lower in Nigeria than in most African countries [19]. This findings further agreed with the study conducted on the impact of health education intervention programme on awareness of and attitude to organ donation and transplantation among Students of University of Maiduguri, it observed that following the health education intervention on the students, majority (70%) of the students expressed their willingness to receive and or donate organ for transplanting if need arise [14].

The findings of this study showed significant different outcome in terms of knowledge about postnatal care services among women of childbearing age after post-intervention especially in experimental with high mean scores compared with low mean scores in control group in all postnatal care services. This result corroborate the study on the influence of knowledge on health behaviour as tested by Mann-Whitney non-parametric statistic in Southern Laos, and it showed the linkage between knowledge and utilization of health care services [20]. 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. The study 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 [20]. This study further supported a similar study on impact of HEIP on family planning knowledge, attitudes, and practices among married women in military barrack, Nigeria, which showed a high mean score on the knowledge from 5.5 points to 7.8 points post-intervention ( $t=-16.7281$ ,  $p=0.0000$ ,  $df=460$ ) after health education intervention [14]. Study on impact of HEI on breast cancer among Women in Egypt also 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 [20].

On the willingness of WCA to utilize post natal care services, the post-intervention showed a significant impact of HEIP on the experimental group compared with low mean score of control group. This result implied that there was positive impact of HEIP on the willingness of WCA to utilization PNC services among WCA in experimental group after HEIP. The findings of this study justified study conducted on impact of health education intervention on knowledge and attitude of students towards organ donation and transplantation in University of Maiduguri where 70 percent of students expressed their willingness to receive and or donate organ for transplant if need arise after intervention [15]. While study in Mexico in year 2000, health education intervention programme revealed, 33% of the study population knew about EC, as against only 20 percent in 1997 before the introduction of the health education program [21]. This implies that further improvement in knowledge and willingness of EC could be achieved with repeated reinforcement of the health education [21].

## CONCLUSION

This study concludes that health education intervention programme in this study using various teaching methods on post natal care services had positive impact on the knowledge about and willingness of WCA to utilize post natal care services in Edu local Government Areas. Base on the conclusion of this study it was recommended that Governments at all levels of health care especially in Edu, LGA, Kwara State ministry of health and Non-governmental organizations should strengthen the existing knowledge levels of WCA about and willingness to utilize postnatal care services in all the primary health care centres in the communities. Health education intervention programmes especially on the significant of women of childbearing age visits to health centres for post natal care service and reporting early any

problem experienced shortly after delivery for prompt treatment.

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