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Assessing the Influence of Clinic-based Health Education on Pregnant Women's Utilization of Primary Health Care Services in Ogun State

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Author's contribution

The sole author (C.O. Agbede) designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

Aims: The paper assessed the influence of clinic-based health education (C-BHE) on pregnant women's attitude in relation to birth preparedness, complication and readiness (BP/CR) and utilization of Primary Health Care (PHC) services in Ogun State.
Study Design: Quasi-experimental design was used. Primary data was collected from surveyed participants.
Place and Duration of Study: Study was conducted between February and May 2013 in Ikenne, Ogun state, Nigeria.
Methodology: Stratified sampling method was used to allocate 48 pregnant women, attending ante-natal care, each to experimental and control groups, making a total of 96 respondents. Structured questionnaire was used to collect data from the respondents. The women in the experimental group were exposed to two hours of health education discussion addressing pertinent maternal health issues weekly for five weeks. Data were analyzed using descriptive statistics and independent t-test. All tests were measured at $p \leq 0.05$ level of significance.
Results: Results showed that the women were between 19 and 24 years, had up to secondary education, recorded parity of 1-2 while timing of first visit was between 20 and 24 weeks of gestation and number of Ante-natal visits were ≥ 4. At baseline, there were no significant difference in the attitudes and desires for utilization of PHC facility for delivery for the experimental and

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control groups. However, after intervention, the mean scores for variables measuring attitudes to BP/CR and desire to utilize PHC facility for the experimental group increased and were significantly higher than the control group. Follow-up evaluation confirmed that the C-BHE increased actual utilization of PHC centre for delivery among the respondents in the experimental group (75%) as compared to the control group (42%).

Conclusion: Corroborative intervention programme initiatives, directed at creating more awareness about benefits of professional attendants during delivery, stimulating attitudinal change towards BP/CR and fostering necessary confidence in the PHC services for pregnant women should be encouraged.

Keywords: Clinic-based; health education; pregnant women; attitudes; utilization; primary health care.

1. INTRODUCTION

Utilization of Primary Health Care (PHC) services is associated with improved maternal and neonatal health outcome [1] and reduction in maternal deaths [2]. About 75% of all maternal deaths are those associated directly and indirectly with poor utilization of health care facility particularly during delivery and the week immediately after [3]. It is very crucial that pregnant women should be attended to by skilled attendants (trained doctors, midwives, trained nurses or trained community health officers) [4]. The utilization of PHC in developing countries, as compared to developed countries, is very low. In the developed countries an estimate of 97% pregnant women receive Ante-natal Care (ANC) and 99% use skilled obstetric services at delivery while in developing countries 63% and 53% of women use ANC and skilled obstetric care respectively [5,6,7].

Proportion of deliveries attended to by skilled health personnel in Nigeria was 43% in 1990 and declined to 38.9% in 2008 [8]. Although it has moved to 53.6% in the year 2012 [7], the rate of utilization is still low. The situation is particularly poorer in the rural communities [9]. Global Maternal Mortality Ratio (MMR) associated with delivery as at 2012 was 210 maternal deaths per 100,000 live births [2]. Report further showed that Sub Sahara Africa had 162,000 deaths which was 56% of the global estimate while Nigeria accounted for 14% which was 40,000 maternal deaths which placed her as one of the forty countries with high MMR (defined as MMR ≥ 300 maternal deaths per 100,000 live births). For every woman that dies in childbirth, around twenty or more suffer injuries, infections or diseases [2].

Okaro et al. [10] discovered that only a third of child bearing age women in Nigeria chose to deliver in health facilities despite their use of these facilities for antenatal care. Iyaniwura and Yussuf, [11] in a study on the utilization of PHC for ANC and delivery in Sagamu, South-West Nigeria, discovered that 54.8% of the women who had ANC from PHC delivered elsewhere. Some even used Traditional Birth Attendants (TBA) and Spiritual healing homes.

The stated Millennium Development Goal (MDG) 5 which is to improve maternal health and reduce maternal mortality by 75% from what it was in 1990 by the year 2015 is still far from being achieved in Nigeria despite supporting policies and programmes (such as the Safe Motherhood Initiative, National breastfeeding Policy and others) put in place. From Fig. 1, current statistics show that Nigeria has only being able to barely achieve approximately 50% reduction MMR.

The proportion of birth attended by skilled health personnel is one of the expected indicators for monitoring progress in achieving this goal. The need for effective intervention to corroborate government efforts to improve utilization of PHC by pregnant women in Nigeria is therefore pertinent. It is against this backdrop that this paper examined the effects of motivational health education information diffusion on utilization of PHC facilities for deliveries at Ikenne Local Government Area, Ogun State, Nigeria.

1.1 Concept and Development of Primary Health Care (PHC) in Nigeria

The concept of PHC was formulated by the 134 countries that met at the Alma Ata conference in Russia in 1978, organized under the auspices of the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) [12]. Primary Health Care means essential health care

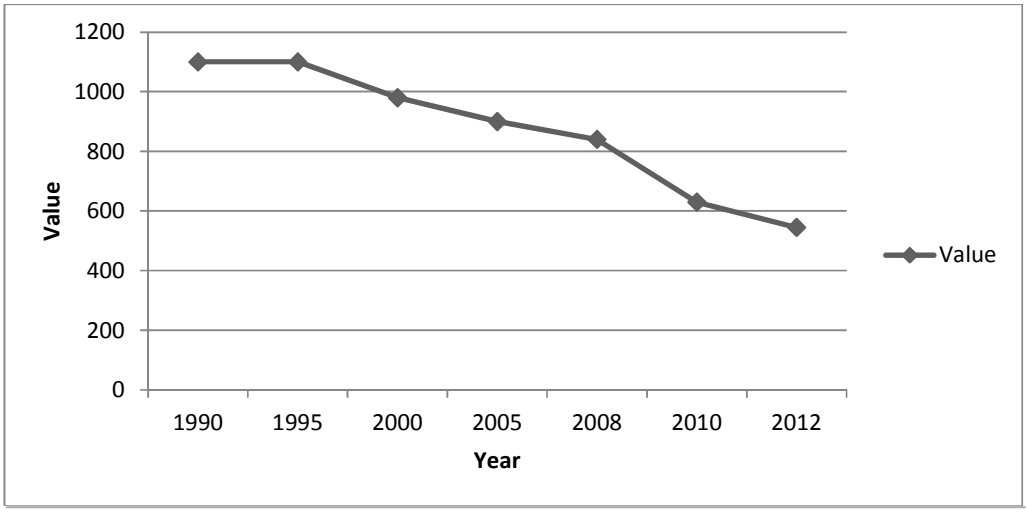

Fig. 1. Nigeria- trend in maternal mortality: 1990-2012
Source: WHO (2012).

based on practical, scientifically, sound and socially acceptable methods and technology, made universally accessible to individuals and families in the community through their full participation and at a cost which the country can afford to maintain at every stage of their development in the spirit of self reliance and self determination [13,14].

In Nigeria, PHC forms an integral part of social and economic development. It is the first level of contact for individuals and communities in the National Health System (NHS), thus bringing health care as close as possible to where people live and work and contributes the first element of a continuing health care process [12].

In the 1999 Constitution of the Federal Republic of Nigeria, health is on the concurrent legislative list, by implication every local government is expected to have PHC facilities equipped to attend to immediate health needs of the people such as immunization, family planning, treatment of common diseases like malaria and provision of ANC and obstetric services at delivery. Therefore, by policy, PHC facilities were to provide general health services for preventive, promotive, curative and rehabilitative healthcare [15].

Most of the Strategies for reducing maternal morbidity, mortality and increasing utilization of health facilities for delivery have been based on a number of established laws, policies programs and some studies. In Nigeria, some of these policies include:

1. The National health policy and strategy which was developed in 1988, revived in 1998 and 2004 to achieve health for all Nigerians, emphasizing Primary Health Care as key to developing the health care.
2. The National Policy on Population for Development, Unity, Progress and Self Reliance, 1998 initiated to promote maternal health especially for the vulnerable groups such as adolescents.
3. The National Economic Empowerment Development Strategy (NEEDS) 1999. To reduced the level of poverty in Nigeria
4. The National Reproductive Health Policy (NRHP) developed by the Federal Ministry of Health (FMOH) in 2001 to achieve quality reproductive and sexual health for all Nigerians and to reduce maternal morbidity and mortality due to pregnancy and childbirth by 50% by 2006.
5. The National Reproductive Health Strategic Framework developed by FMOH 2002 also to reduce maternal mortality.
6. The National Guidelines for Women's Health developed in 2002 to establish women-friendly services at all levels of the health care system.
7. The Health Sector Reform policy, developed FMOH in 2003 to improve the functioning of Nigeria's health system as a way of reducing maternal mortality in the country.
8. National Strategic Plan for Reproductive Health Commodity Security also developed by FMOH in 2003 to develop a strategy to

secure the supply of reproductive health commodities.

9. The National Family Planning/ Reproductive Health Policy Guidelines and Standards of Practice developed in 2004 to improve the quality of reproductive health and family planning.
10. A National Strategic Framework and Plan for Vesico-Vaginal Fistula (VVF) Eradication in Nigeria Developed by FMOH in 2005 to improve the quality of life of women by eliminating obstetric fistulae by 80% and a 300% increase in health care services to repair them between 2005 and 2010.
11. National Health Promotion Policy (NHPP). Developed by FMOH in 2006 to expand and elaborate on the health promotion/education component of NHPP
12. Integrated Maternal, Newborn and Child Health (IMNCH) Strategy Developed by 2007 to build synergy among many programs designed to reduce maternal and child mortality in Nigeria and to ensure a continuum of care from pregnancy.

Inadequate implementation strategies had been the focal constraint to achieving the goals set by these policies. Despite the fact that the policies suggest that the government recognized the need to reduce maternal mortality in Nigeria, the political will to transform these policies into action is largely absent [16,17]. Corroborative intervention package as proposed from the output of this study is therefore imperative.

1.2 Trend in Utilization of PHC for Delivery by Ante-natal Attendees in the Study Area

Available maternal health records from the PHC centres in the study area from 2009 to 2012 (Table 1) showed a drop in the number of women using the PHC centres for delivery from 2009 to 2012 despite general increase in population and birth rate [14]. As at 2009, only 10% of the ante-natal attendees eventually utilized the PHC centres for actual delivery. By 2012, the situation had even grown worse with only 7% of the clients who attended the ANC services eventually utilizing the PHC facility for delivery of their babies. This study proposed a motivational package to reverse this trend.

1.3 Theoretical Framework

The study focused on health information dissemination necessary to equip selected pregnant women with the necessary knowledge that will bring about changes in their attitudes, belief system and decrease in maternal death. Combination of theoretical models that suggested effective approach to ensure participants in the intervention complied with the information delivered and thus increasing their decisions for better patronage of the healthcare facility were employed. The Comprehensive Health Education model (CHEM) and the Health Belief Model (HBM) were employed.

Table 1. Yearly ante-natal and delivery records of PHC centres in Ikenne LGA

Year	Ante-natal attendance	Delivery at PHC	Percentage of usage
2009	2828	285	10.0
2010	2234	239	10.6
2011	2656	258	9.7
2012	2515	176	7.0

Source: Agbede (2013)

Following Farotimi [18] the six steps of the CHEM model was applied to this study thus:

Step I: The participants (pregnant women) were involved in an active learning process.

Step II: At the end of the program, these pregnant women were able to demonstrate positive attitudes towards birth preparedness, complication and readiness (BP/CR) use of the PHC facility.

Step III: The *a priori* expectation was that significant increase in knowledge of the participant will improve their attitudes and responses to health care services and consequently reduce complications associated with pregnancy and maternal mortality.

Step IV: The sampled women for the study were categorized into experimental and control groups. The experimental group were exposed to the motivational education and compared with the control group for knowledge increase.

Step V: Necessary resources were acquired and utilized to implement the program

Step VI: Evaluation was done with the use of questionnaire.

The Health Belief Model which provides a framework for understanding the potential influence on an individual's decision to make use of available health services was used to corroborate the CHEM. According to HBM, a

positive behaviour change, which in this case is the use of motivational health education, was expected to influence participants' perception of being susceptible or at risk of developing complications any time during pregnancy or delivery. The Cues to action would trigger the individual participant in the intervention to adapt the intended new behaviour and thus influence their final decision to utilizing the PHC facilities for delivery.

2. RESEARCH METHODOLOGY

2.1 Study Area and Description of Population

This study was carried out in Ikenne Local Government Area (LGA) in Ogun state, Nigeria. This LGA is semi-urban comprising of five towns-namely, Ikenne-Remo (the LGA headquarter), Ilishan-Remo, Iperu-Remo, Ogere-Remo and Irolu-Remo. Population of women of reproductive age in the study area was 27, 713 (Nigeria Demographic and Health Survey [19]. However, the target population included women who were pregnant and in the third trimester of pregnancy (28-40 weeks of pregnancy). The healthcare facilities available in the LGA include Babcock University Teaching Hospital at Ilishan, State General Hospital at Ikenne, State Hospital at Iperu, Community Hospital at Ilishan and ten (10) Primary Health Care (PHC) Centres in Wards situated in the five towns. There are also eight registered Private Hospitals/Clinics, some Traditional Birth Attendants and religious Health Care Centres within the Local Government Area.

2.2 Sampling Technique and Data Collection

The multi-stage sampling technique was used to select a total of 96 participants from the five healthcare centres in the study area offering maternity care. The healthcare facilities were stratified into two for the control and experimental groups. Ikenne PHC ward II, Ilisan town PHC ward VII and Irolu PHC ward X were in the control groups while Iperu PHC, ward V and Ogere PHC VII were in the experimental group. Forty eight pregnant women were purposively selected from each group to represent the sample frame. Structured questionnaires designed in line with the developed Motivational Health Education Information (MHE) and with study objectives were used to gather data from the respondents. Reliability analysis was applied to test the internal consistency of the questionnaire. Result of the analysis showed that the average Cronbach's alpha value for the instrument was 0.82. Items of an instrument were considered to represent a measure of high internal consistency if the total Cronbach's alpha value was more than 0.7 [20,21]. The intervention group was exposed to 5 weeks of intervention education (which focuses on pregnancy management and preparedness for delivery) following the focus group discussions.

2.3 Method of Data Analysis

Both descriptive and inferential statistics were employed in analyzing data collected in the study. Frequency tables were used to present results for the descriptive analysis. Each construct of the questionnaire was coded along the appropriate ranking scale. Maximum point-scales (MPS) were generated for each construct to measure the stated research variables, mean scores were also computed. The t-test was used to determine significant difference in the mean of the analyzed variable (willingness to use PHC centres for delivery) in the experimental and control groups. All statistical analysis were done using the statistical package for social science (SPSS version 17) and set at $P \leq 0.05$ levels of significances. Ethical clearance was obtained from the Ethical Review Committee, Babcock University and consent forms were filled by all participants.

3. RESULTS AND DISCUSSION

3.1 Socio-demographic Information of Respondents

Results in Table 2 show that the respondents generally were young (below 35 years old) and mostly married which implies that they were still in active reproductive age. Further results showed that the respondents had relatively good level of education with majority having above secondary education. Previous studies show that literacy level impacts behavioral change [22,23,24]. Thus the intervention is expected to have a significant impact on respondents' utilization of the PHC facility for delivery. Most of the respondents were artisans and their monthly income was below ₦16,000 (<$81) which is clearly below the national minimum wage per month of ₦18,000. This may pose a challenge to the women's capacity to afford certain financial requirements for necessary healthcare and serve as de-motivation for utilization of skilled medical

professional to attend to them during delivery especially at private level.

However, since the result shows that majority of the women have up to 2 children, it is expected that they had previous knowledge about pregnancy management since they have had children before. Results of antenatal care (ANC) showed that most of the women had their first visit to the healthcare center between 20th and 24th weeks of pregnancy and visited the healthcare facility up to 4 times during ANC.

3.2 Result of the Influence of Intervention Effort

The women in the experiment group were exposed to 5weeks of intervention education as earlier stated. The attitudes and desires for utilization of PHC facility for delivery were assessed for both the control and experimental groups both at the beginning (baseline) and at the end of the intervention exercise (endline). Results are presented in above Table 3.

Table 2. Demographic information of respondents

Variables	Groups			
	Control (n= 48)		Experimental (n= 48)	
	Freq	%	Freq	%
Age				
19-24yrs	16	33.3	15	31.0
25-29yrs	10	20.8	11	23.8
30-34yrs	12	25.0	18	38.1
35-39yrs	4	8.3	4	7.1
≥40	6	12.5	0	0
Marital status				
Married	46	95.8	48	100.0
Religion				
Christianity	24	50	27	57.1
Islam	22	45.8	18	38.1
Traditional	2	4.2	3	4.8
Education				
Below Secondary	4	8.3	14	28.6
Secondary and above	44	91.8	34	71.5
Husbands' education				
Below Secondary	6	12.5	10	21.4
Secondary and above	44	87.5	38	78.6
Income level (₦)				
≤15,000	20	41.6	32	66.6
16,000-30,000	10	20.8	9	19.0
31,000-45,000	6	12.5	3	7.1
>45,000	12	25.1	4	7.3
Parity				
None	2	4.2	7	14.3
1-2	32	66.7	22	45.2
3 and above	14	29.1	19	40.5
Timing of ANC first visit				
8-16 weeks	6	13	6	12.0
20-24 weeks	32	66.7	35	74.0
28 weeks +	10	20.8	7	14.0
No. of ANC visits				
1 ANC visit	4	8.3	5	9.5
2 ANC visit	12	25.0	10	21.4
3ANC visit	2	4.2	3	7.1
4 and above	30	62.5	30	61.9

Source: Computed from field Survey (2013)

Table 3. Result of intervention for control and experimental group

Variables	Groups	Max points on scale of measure	Mean	±SD	Std. error mean	Level of sig
Baseline/pre-intervention						
Attitudes towards birth preparedness	control	52	24.8333	4.411	0.63674	0.324
	experiment		22.7381	4.854	0.52970	
Utilization of healthcare facility	control	26	20.7132	2.110	0.26296	0.310
	experiment		22.0201	1.960	0.24414	
Endline/post-intervention						
Attitudes towards birth preparedness	control	52	24.3750	4.123	0.59521	0.001
	experiment		41.3690	4.250	0.46377	
Utilization of healthcare facility	control	26	20.5833	2.314	0.33400	0.009
	experiment		24.2262	1.710	0.18658	

Source: Computed from field survey (2013)

The attitude variable towards BP/CR for the experimental group measured at baseline (MPS = 52) had a mean score of 22.73±4.85 while the control group had a mean of 24.83±4.41. There was no significant difference between these mean scores (P=0.324). At immediate post-intervention, the mean score for the experimental group (41.37±4.85) was significantly higher than that for the control group (24.83±4.12) (P=0.001). This result showed that the intervention influenced the participants attitudes towards BP/CR and likely to encourage utilization of PHC facility for delivery.

The variable relating to the respondents' proposed utilization of healthcare facility for delivery measured at baseline for the experimental group had a mean score of 22.02±1.96 while the control group had a mean of 20.71±2.11. Comparing the two mean scores the experimental and control group for utilization of healthcare facility, there was no significant difference between these mean scores (P= 0.310). However, at immediate post-intervention the experimental group had a mean score of 24.22±1.71 while the control group had a mean of 20.58±2.31. Comparing the two mean scores, the experimental had significantly higher probability for utilization of healthcare facility for delivery. The implication of this is that the motivational health education made an impact on the respondents' utilization of the PHC facilities for delivery of their babies.

Follow-up verification was conducted to confirm the actual place of delivery for the respondents. Results on Table 4 show that 75% of the respondents in the experimental group eventually used the PHC for delivery while only 42% of respondents in the control group used the PHC for actual delivery of their babies. Also, 13% of the respondents in the experimental group used the private hospital for delivery and 13% of respondents in the control group used the private hospital for actual delivery of their babies. When data for PHC and private hospital deliveries were aggregated for utilization of healthcare facility and being delivered by skilled health attendants, 88% of the respondents in the experimental group were confirmed to use the healthcare facility for delivery as compared with 55% of respondents in the control group.

Furthermore, the results showed that 12% and 46% of the respondents in the experimental and control groups respectively used either church, TBA or delivered their babies at home.

Table 4. Distribution of respondents by actual place of delivery

Place of delivery	Control group	Experimental group
PHC	20 (42%)	36 (75%)
Private Hosp	6 (13%)	6 (13%)
Church	16 (33%)	2 (4%)
TBA	6 (13%)	1 (2%)
Home	-	3 (6%)

Source: Computed from field survey (2013)

4. CONCLUSION AND RECOMMENDA-TION

This study assessed the influence of clinic based education on pregnant women's attitudes towards BPCR and utilization of Primary Health Care (PHC) centre for delivery. The participants were selected from among pregnant women attending ante-natal care in the PHC centres in Ikenne LGA of Ogun state Nigeria. The investigation concluded by affirming significant

impact of the motivational education on the attitudes of the respondents on BPCR and their utilization of the PHC facility for delivery. Based on the findings of the study, it was recommended that corroborative intervention programme initiatives, directed at creating more awareness about benefits of professional attendants during delivery, stimulating attitudinal change towards BPCR and fostering necessary confidence in the PHC services for pregnant women should be encouraged. Furthermore, pregnant women should be encouraged to start ANC appointments earlier and any cost implication should be subsidized to motivate use of healthcare facilities through pregnancy and delivery.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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