OUTCOME OF A NURSE-LED EDUCATIONAL PROGRAMME ON KNOWLEDGE OF SELF-CARE STRATEGIES AMONG PREGNANT WOMEN IN SELECTED LOCAL GOVERNMENT AREAS IN IBADAN, NIGERIA

Aluko, Joel O.; Ajani, Olanrewaju; Sowunmi, Christiana O.; Marie Modeste, Regis R.; Ani Odinaka B.; Onasoga Olayinka A.

ABSTRACT

Maternal mortality remains a public health concern in most developing countries, as 99% of all reported maternal deaths stem from such developing countries. Even with this growing concern, research has shown that women's knowledge about pregnancy related self-care is insufficient. This study therefore assessed the outcome of a nurse-led educational programme on knowledge of self-care strategies during pregnancy. A non-equivalent control group quasi-experimental design was used, while a multistage sampling technique was employed to recruit 209 pregnant women. A validated structured questionnaire with 0.9 reliability coefficient was used to collect data from 119 pregnant women in the experimental group and 90 in the control group. Data were collected in three phases. Data collected was analysed using SPSS version 22. Descriptive statistics were used for data analysis. Relevant ethical issues were strictly considered. A very low level of knowledge was reported in both the experimental and control group prior to intervention. A geometric rise in the level of knowledge was however noticed in the experimental group post intervention, as most of them were able to demonstrate adequate knowledge of the different domains. Therefore, it is recommended that nurses at all levels must be equipped with this promising intervention to effectively to educate pregnant women on self-care strategies, as these would enhance efforts towards safer pregnancy and safer childbirth. The intervention should be administered to larger population to further establish its efficacy.

Keywords: Outcome, Nurse, educational programme, Knowledge, pregnancy

Introduction

Maternal mortality is a public health concern in most developing countries, as 99% of all reported maternal deaths stem from such countries. The risk of maternal death in developing countries is estimated to be 1 in 61 in developing countries and 1 in 2800 in developed countries (WHO, UNICEF, UNFPA, 2004). Complications in childbirth are the leading cause of death and disability among women of reproductive age in developing countries (WHO, 2005). The situation in Nigeria is as dire, and Nigeria remains one of the ten most dangerous countries in the world for a woman to give birth. According to the report of the Centre for International and Strategic Studies (CSIS) global health policy centre (2013), in 2010, an estimated 40,000 Nigerian women died during child birth. The country accounted for an estimated 14% of maternal deaths worldwide. It is estimated that 630 of every 100,000 live births result in maternal death (CSIS 2013). The inequalities in the health and wellbeing of women and the high figures of maternal and child mortality in Nigeria is a source of serious concern to health care professionals (WHO, 2010).

Even with this growing concern about maternal mortality, research has shown that women's knowledge about pregnancy and everything it entails to manage one is lacking. A study by Oni et al, 2016, revealed poor knowledge of pregnant women regarding danger signs in pregnancy. Another common cause of maternal mortality in developing countries apart from poor knowledge is inadequate self-care practice among the pregnant mothers (Zhianian et al, 2015). Pregnant women are faced with the responsibility of maintaining their health and that of the foetus and the major role of nurses in promoting foetal and maternal well-being is to provide important and accurate information on activities that will produce positive outcome of pregnancy (Olds et al, 2004). In a country like Nigeria where maternal morbidity and mortality is high, antenatal education is very important in order to achieve safe motherhood. A woman's knowledge about antenatal care is a major determinant of the outcome of pregnancy (Zuzulya, 2014). Health education is described as a process of making right information available for people which will result in positive health practices and promote their health (Ezeruigbo et al, 2015). The aim of the antenatal education is to ensure maternal and foetal safety. With the various health concerns related to pregnancy, women need to

know the self-care strategies to be applied during pregnancy.

Self-care is the process through which people take care of their own health (Denyes et al, 2001). Previous research studies have shown positive correlation between self-care practices and maternal health outcomes (Dodzo et al, 2017). Self-care is based on the following principles: individual's ability to make an informed choice to manage self, allowing individuals to assess need, plan and gain confidence to care for self, assisting and supporting an individual to assess information needed to manage self, helping individuals to develop skills in self-care, helping individuals to use necessary technology to support self-care, advise on how to access network, participate in the planning, intervention and evaluation of care (Olds, et al, 2004). The importance of active participation of patients in their own care is stressed, and this is very applicable to pregnant women. Pregnant women are expected to be engaged in the following self-care during pregnancy: breast care, healthy nutrition, dental care, sexual activities, exercise, foetal monitoring, drugs and avoidance of teratogenic substances (Olds, et al, 2004).

Materials and Method

The study employed the non-equivalent control group quasi-experimental research design to determine the outcome of a nurse- led educational intervention on knowledge of self-care strategies among pregnant women in selected Local Government Areas in Ibadan, Nigeria. The study population comprised women attending antenatal clinics in primary health centres in selected antenatal clinics in Ibadan. The total number of pregnant women was 330.

Selection of study participants was carried out using multi-stage sampling technique. In the first stage a list of Local Government Areas in Ibadan was used as a sampling frame from which Ibadan South-East and Lagelu Local Government areas were selected. During the second stage the two Primary Health Centres were selected purposively. The researchers used balloting method to assign the intervention and control group and finally a convenience sampling was used to select study participants.

A self-structured questionnaire was used to collect data. Section A collected information about pregnant women's demographic data, while section B collected information on pregnant women's knowledge of self-care strategies. Five trained nurse-research assistants assisted in data collection at three phases: (i.) Pre intervention visit phase, (ii.) Intervention visit phase, and (iii.) Evaluation visit phase.

Pregnant women were met on one-on-one basis during their respective antenatal visits at the PHC centre. The research team familiarized with the women and created a good rapport. Participants were informed about what the study entailed and were assured of the confidentiality of all information provided. They were also informed they could exit from the study at any point, without any negative effects on them.

Snacks and a bottle of water were given to each participant at the end of the session. This session was divided into three and the content of each session is outlined thus:

Session one: This took place during the first week. During this session participant were well informed of what the study was all about, informed and written consent were gained, and pre-test instrument were administered.

Session two: The researchers exposed the participants in the experimental group to the teaching module on knowledge of pregnancy and self-care strategies, using discussion instructional method. The session was held for an hour and thirty minutes, participants asked questions and appropriate answers were provided.

Session three: This came up during the third week, and the session was held for one hour thirty minutes. Participants asked questions and appropriate answers were provided. Reviews of the two health education sessions were done, there was time for questions and the right answers were given.

Evaluation visit session: This session was implemented two weeks after the last intervention; during this session post intervention instrument was administered to both control and experimental groups. Their knowledge of pregnancy and self-care strategies were assessed using the same questionnaire used for the pre-intervention assessment.

Statistical Analysis: Data collected were entered into SPSS database version 22.0, which was used to analyse the result. Score was allocated for each question and the overall score was computed for each participant in the control and experimental groups. The socio-demographic characteristics of the participants in both groups were analysed descriptively and the findings were presented using frequency tables. Tests of knowledge of pregnancy and self-care strategies were analysed thus: responses to knowledge questions were scored – 0 point for wrong answer and 1 point for correct answer. The set hypotheses were tested using t-test statistics. Thus, the baseline mean knowledge scores of both control and experimental groups were compared for existence of statistical differences prior to intervention exposure. Similarly, the post intervention mean knowledge scores for both CG and EG was compared for existence of statistical differences. The results of the tested hypotheses were presented in t-test table.

Ethical Consideration: Ethical clearance for the study was obtained from the Department of Planning, Research and Statistics Division, Ministry of Health, Oyo State and Babcock University Health Ethical Research Committee, Ilishan Remo, Ogun state. A letter of introduction was collected from the School of Nursing Science, Babcock University, Ilishan Remo, Ogun State. Heads of the two primary health centres were visited; purpose and objective of the study was explained to them. Permissions to carry out the research were obtained from the two heads. Informed consent was taken from each participant, questions were entertained, and correct answers were provided. Confidentiality was maintained, and no names were divulged. Privacy was maintained throughout the study, and respondents were informed of their right to withdraw from the study without any prejudice, and nine women did so. The principles of beneficence and non-maleficence were adhered to. The women were given refreshments during the data collection sessions.

Results

The response rate was 95.9%, as 209 out of 218 women participated. A total of 119 and 90 pregnant mothers were recruited into the experimental group (EG) and control group (CG), respectively. Table 1 shows the socio-demographic data of the participants. Ages of the mothers in the EG ranged from 15 to 42 years; their mean age being 27 years, while the ages of the mothers in the CG ranged from 18 to 39 years; mean age being 27 years. Also, the greatest proportion of the participants in the experimental group 91.6% were Yoruba, 92.4% were married and 75.6% were Muslims. A significant number of the participants had their educational level at secondary, 59.7%. In the control group, majority of the participants, 87.8% were Yoruba, 90% were married and 51.1% were Muslims; 52.2% of the participants had secondary education as their highest level of education

Table 1: Socio-Demographic Characteristics of Participants

Socio-demographic variables		Experimental group (N=119)		Control group (N=90)	
		N	%	N	%
Age group:	Teenage mothers (15-19 years)	4	3.4	2	2.2
	Young Mothers (20-34 years)	101	84.9	79	87.8
	Older Mothers (35-42 years)	14	11.8	9	10
Religion	Christianity	28	23.5	36	40
	Islam	90	75.6	46	51.1
	Traditional	1	0.8	8	8.9
Marital status	Married	110	92.4	81	90
	Single	7	5.9	7	7.8
	Divorced	2	1.7	2	2.2
Ethnicity	Yoruba	109	91.6	79	87.8
	Igbo	7	5.9	9	10
	Others	3	2.5	2	2.2
Educational status	No formal education	9	7.6	6	6.7
	Primary	28	23.5	18	20
	Secondary	71	59.7	47	52.2
	Tertiary	11	9.2	19	21.1
Occupation	Full house wife	25	21	6	6.7
	Trading	71	59.7	41	45.6
	Artisans	20	16.8	37	41.1
	Civil service	3	2.5	6.7	6.7

Obstetric Reports of The Participants

Table 2 depicts the obstetric data of Women in the experimental and control groups respectively. Results from the study indicate that the greatest proportion of women in the experimental group, 58.8% are multigravida mothers, while the greatest proportion in the control group, 85.6% were primigravid mothers. Also, in the experimental group, 7.6% of the women have had one miscarriage, while 11.1% in the control group have also had one miscarriage. Mores so, the highest numbers of the women in both the experimental and control groups do not have any living children, as evidenced by a percentage of 31.9 and 25.6 respectively.

Table 2: Obstetric Data of The Participants

Obstetric data of mothers	Experimental group (N = 119)		Control group (N = 90)	
	N	%	N	%
No of pregnancies achieved				
Primigravid mothers	45	37.8	77	85.6
Multigravida mothers	70	58.8	9	10
Grand multigravida mothers	4	3.4	4	4.4
No of Miscarriages				
None	107	89.9	67	74.4
One	9	7.6	10	11.1
Two	2	1.7	5	5.6
Three	1	0.8	2	2.2
Four and more	Nil	Nil	6	6.7
No of living children				
None	38	31.9	23	25.6
One	20	16.8	22	24.4
Two	36	30.3	16	17.8
Three	21	17.6	14	15.6
Four and more	4	3.4	15	16.6

Results of Test of Knowledge of Pregnancy and Related Issues Among Participants

Table 3 shows that the baseline score performances of the pregnant women in both experimental and control groups were very low; Women in the experimental group (EG) performed lower than the women in the control group (CG) pre-intervention. However, the performances of the women in the EG overtook that of the women in the CG at a geometric rate, post intervention, as a very good number of the women demonstrated adequate knowledge of pregnancy, physical self-care strategies, physiological self-care strategies as well as foetal care strategies, as opposed to the continued lack of knowledge of mothers in the control group. There was significant mean difference across the four aspects of knowledge tested among the women in both EG and CG. Thus, the scores of knowledge across the four aspects were significantly higher in the EG than the CG.

Table 3: knowledge scores on pregnancy and self-care

Aspects of knowledge tested	Pre intervention		Post intervention	
	Ctrl (%)	Exp. (%)	Ctrl (%)	Exp. (%)
Knowledge of pregnancy	55	32	51	89
Knowledge of physical self-care strategies	50	31	52	76
Knowledge of physiological self-care strategies	43	25	40	56
Knowledge of foetal care strategies	18	29	20	68

Discussion

Results from the study indicate that women in the study were mostly classified as young mothers and had secondary education as their highest level of education. A study by Izugbara et al, 2016 revealed that two-third of maternal mortality occur among women aged 15-19 who are unable to read, hence a great need to promote girl-child education in the region as they make up the highest population of pregnant women. This further implies that with adequate and effective education, there may be a reduction in maternal mortality among the population under study. Also, the level of education may be a reason for a near average pre-test score in knowledge of pregnancy and

other self-care practices. Also, a study by Xiong et al, 2006, found that better knowledge of dental hygiene and practices were found in women who had some form of tertiary education and from a higher socio-economic status. These highlights important gaps in knowledge and practices in women, particularly those with lower educational levels and lower socio-economic status and shows that improving education needs to become a priority in antenatal care to educate women at risk of the importance of maintaining good health.

A small proportion of the women, 21.0% and 6.7% in the EG and CG respectively were full time housewives, which could affect utilization of knowledge of adequate self-care practices. A survey by Nigerian Demographic and Health Survey 2013, found that other causes of maternal mortality in Nigeria are: low literacy levels, inadequate antenatal care, poor health care system and socio-economic status of women. This finding is in tandem with findings from this study, implicating being full time housewives, and subsequently translating to poor socio-economic status as part of the reasons that can increase maternal mortality. The implications of being full time housewives could also impede the women's interaction with other pregnant women where ideas may be shared to promote knowledge of pregnancy and self-care strategies.

Descriptive analyses of knowledge score among participants show that the baseline means score performances of the participants in both experimental and control groups were low. This may be associated with the content of the previous health education sessions given to them during their antenatal visit. The low level of knowledge of pregnant women about pregnancy and self-care strategies has also been noted by Oni, et al, 2016 and El-Nagar et al, 2017. Cometto et al, 2013, further carried out a survey, among pregnant women in three northern states in Nigeria in which only 25% attended antenatal care and not up to one-third of them knew three or more signs of danger in pregnancy. Those with higher socio-economic status had knowledge of minor danger signs in pregnancy without the understanding of the life-threatening situations. Attendance of antenatal clinic did not increase their knowledge of serious dangers in pregnancy. This finding is also in tandem with findings from this study indicating a very low knowledge of danger signs in pregnancy and self-care strategies. According to Hetherington as reported by Stoll et al, 2012, high number of pregnant women had spontaneous vaginal delivery following the attendant of childbirth education classes. This finding also corroborates findings from this study, which indicated that the performances of the women in the EG overtook that of the pregnant mothers in the CG at a geometric rate, post intervention, as a very good number of the mothers demonstrated adequate knowledge of pregnancy, physical self-care strategies, physiological self-care strategies as well as foetal care strategies, as opposed to the continued lack of knowledge of women in the control group. This stresses the continued need to intensify health education programmes for women, as supported by Thomas and Karlovsky (cited in (Riedmann, 2008), revealing that the health education given to women during clinic led to better outcomes such as shorter duration of labour, few surgical deliveries, quick and easy recovery of women from the effect of labour experience, less number of babies with birth complications, less blood loss, high breast feeding rate and reduced anxiety. Similarly, Zhiania et al, 2015, also indicated that intervention on self-care is beneficial for pregnant women, as an increase in the mean score of attitudes, behaviour and the self-efficacy were greatly improved. This further supports findings from this study. Also, another study carried out by Haapio et al, (2017), on the effect of extended childbirth education by Midwives on the childbirth fear of first-time mothers and fear related to other issues of life, revealed less childbirth related fear among women in the intervention group, against more in the control group. A study carried out in Malawi to assess the effectiveness of childbirth education program among pregnant mothers, further strengthened results from this study, by indicating that there was almost 100% increase in the knowledge of participants' post-intervention (Riedmann, 2008). In another study, by Malata et al, 2011, where the effectiveness of childbirth education program was assessed among 104 and 105 pregnant women in Malawi; results found that knowledge base of women in the experimental group was 22.11, as against 10.7 in the control group, indicating the effectiveness of such child birth education programmes. All these findings indicate that health education programme, especially ones led by qualified nurses, is therefore a key component in antenatal care, especially in developing countries such as Nigeria, if the issue of maternal mortality is to

be tackled effectively. It is important to note the significant increase of knowledge in the experimental group, and that highlights the positive outcome of the intervention in this study, which is an encouraging aspect for further implementation for all pregnant women in Nigeria. This has potential to positively contribute to the fight against the high maternal and neonatal mortality in the country.

Conclusion

This study was able to identify pregnant women's pre intervention knowledge of pregnancy physical self-care strategies, physiological self-care strategies as well as foetal care strategies in an experimental and control group. A low knowledge level in both groups prior to the intervention was established. It was also able to identify a post interventional knowledge mean score for women in both the experimental and control groups, indicating a significant increase in knowledge of danger signs of pregnancy, self-care strategies as well as foetal care strategies among pregnant women. It is therefore certain that adequate health education will empower pregnant women to understand their health needs and increase their knowledge in the aspects covered in the intervention. It is therefore recommended that midwives and nurses give formal, structured and planned education to pregnant women during the antenatal visit to equip them with what to expect as the pregnancy progresses. This will serve as a panacea to the burdens of neonatal and maternal mortality in our society.

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