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Nursing-based intervention on exclusive breast feeding among pregnant mothers attending antenatal clinic in two primary healthcare Centres in Ikenne local government area, Ogun State, Nigeria

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Abstract

Objective: Exclusive breastfeeding is the practice where a child receives breast milk only from the mother, a wet nurse or expressed breast milk for the first six month of baby life. It is associated with reduction in risk of childhood urinary tract infections, bacterial meningitis, diarrheal diseases, respiratory tract infections and sudden infant death syndrome. Despite the nutritional, economic, immunological and psychological advantages of breast milk, knowledge and practice of exclusive breastfeeding has remained below recommended level. The study evaluated the effect of a nurse-based intervention on exclusive breastfeeding practice among pregnant mothers attending antenatal clinic in two primary health care centres in Ikenne Local Government Area of Ogun state, Nigeria.

Method: Two groups pre-test, post-test quasi-experimental study was adopted. Researchers included 30 pregnant mothers attending antenatal clinic using purposive sampling. Participants completed a developed questionnaire to test knowledge and practice regarding exclusive breastfeeding pre-intervention and six weeks post-intervention at postnatal clinic visit. Data were analysed using descriptive and inferential statistics at 0.05 level of significance.

Results: The mean difference in knowledge among participants in the control group was 0.065 while the experimental group was 0.116. The mean difference in practice among participants in the control group was 0.056 while the experimental group was 0.291. Results showed significant difference in effect of a nursing-based intervention on knowledge and practice concerning exclusive breastfeeding among pregnant mothers in the experimental and control group ($P = .000$).

Conclusion: Pregnant mothers' knowledge and practice regarding exclusive breastfeeding can be improved through a nursing based intervention. The study recommended that pregnant mothers should be regularly exposed to breastfeeding readiness education which is necessary for improving mothers' knowledge and practice regarding exclusive breastfeeding.

Keywords: Knowledge, practice, pre-intervention, post-intervention, quasi-experimental study

Introduction

The importance of the provision of a nurse-based intervention such as breastfeeding-readiness education for mothers during the antenatal visits is crucial to achieving exclusivity among them. All lactating mothers should exclusively breastfeed their children for the initial six months and go on with breastfeeding up to two years. Despite the nutritional, economic, immunological and psychological advantages of breastfeeding, its knowledge and practice appear to remain below recommended level^[1].

Refusing to breastfeed extensively increases the vulnerability of the child to illness from communicable diseases, however for every extra month of exclusive breastfeeding, 30.1% of hospitalizations resulting from infection may perhaps have been prevented^[2]. An estimate of 53% of diarrhea hospitalizations and 27% of lower respiratory tract infections may be prevented monthly by exclusive breastfeeding^[3]. Study have shown exclusive breastfeeding is practiced below WHO recommendation^[4]. A target of 90% universal coverage for exclusive breastfeeding is recommended by WHO to prevent 13-15% of 9 million deaths of children under-five in low and middle-income countries annually^[5].

The global exclusive breastfeeding rate for children aged less than six months between the years 2000 and 2007 was 38%, 23% of infants less than six months were breastfed

exclusively in West and Central Africa while Middle East and North Africa recorded a little higher rate of 26%. Eastern and Southern Africa, East Asia and the Pacific; and South Asia respectively had a prevalence of 39%, 43% and 44% [6]. A study in England showed that infants' exclusive breastfeeding rate was low, and only 25% of babies remain breastfed until 6 to 8 weeks after birth and 16% of mothers continued breastfeeding for three to five months after birth [7].

In Nigeria, exclusive breastfeeding is uncommon with only 13% of infants younger than six months being exclusively breastfed [8]. Between 2000 and 2012, 15.1% of babies less than six months of age in Nigeria were exclusively breastfed [9]. A study in Nigeria showed that only 19% of the breastfeeding mothers practiced exclusively [10]. These reveal a high incidence and prevalence of poor exclusive breastfeeding which may be due to low knowledge and practice concerning exclusive breastfeeding among pregnant mothers.

Nursing-based intervention is very important in establishing successful breastfeeding practice. Nursing intervention consisting of breastfeeding education is helpful at improving early initiation and continuation of breastfeeding for the first two months. One of the mainly helpful strategy intended for reducing infant morbidity and mortality in a resource insufficient settings is the exclusive breastfeeding promotion intended for the initial six months of the infant's life [11]. Breast milk is the standard, healthiest, simplest and cheapest way of meeting children's feeding needs. Knowledge, expertise and advice of nurses are very vital in creating awareness, education and support for mothers and their babies to achieve exclusivity. Nursing intervention strategies is a significant approach to some of the challenges of breastfeeding practice, making mothers informed of the cost effective benefit of exclusive breastfeeding. Despite trainings and health education on exclusive breastfeeding, its knowledge and practice among pregnant mothers has been low [12]. These suggest a fundamental problem. Likewise, the researcher through clinical experience has observed high incidence and prevalence of low exclusive breastfeeding among pregnant mothers attending antenatal clinic. These may be attributed to low knowledge and practice concerning exclusive breastfeeding among pregnant mothers. These may also be attributed to a gap in the type of training or education offered to pregnant mothers on exclusive breastfeeding as no previous quasi-experimental study combined lecture and demonstration method. Hence, the need to evaluate the effect of a nursing based intervention on exclusive breastfeeding among pregnant mothers attending antenatal clinic in Ikenne Local Government area, Ogun State, Nigeria.

Methods

Study design

The study adopted two groups pre-test, post-test quasi-experimental study to evaluate the effect a nursing based intervention on exclusive breastfeeding among pregnant mothers attending antenatal clinic in Ikenne Local Government Area in Ogun State between January and March 2017.

Ethical consideration

Ethical clearance was obtained from the Babcock University Health Research Ethics Committee (BUHREC) and

permission was obtained from the management of Ikenne Local Government. Participants were adequately informed about the study and consent was obtained before data was collected. Information obtained from the participants was kept confidential and the right to withdraw from the study at any point by participants was respected.

Population

The study population was 40 pregnant mothers attending Iperu primary health centre which formed the experimental group and 30 pregnant women attending Ilisan primary health center which formed the control group.

Inclusion criteria: pregnant women who have had one or more previous babies, 36- 42 weeks gestational age.

Exclusion criteria: primigravidae, multiple pregnancies, premature infant and children with abnormalities that affects breastfeeding.

Sample size and sampling Technique

Sample size was determined using Leslie Kish formula. Purposive sampling technique was adopted to select 30 participants (15 participants from Iperu primary health centre which formed the experimental group and 15 participants from Ilishan primary health centre which formed the control group) for the study.

Instrument and procedure

A developed questionnaire consisting of four subscales and 30 items. The subscales included socio-demographic data, obstetric data, exclusive breastfeeding knowledge and practice of exclusive breastfeeding. There were 3 questions on demographic data, 2 questions on obstetric data, 17 questions on exclusive breastfeeding knowledge and 8 questions on exclusive breastfeeding practice. Knowledge score of participants below 50% was categorized as low knowledge level, knowledge score of participants between 50% to 70% was categorized as moderate knowledge level and knowledge score of participants above 70% was categorized as high knowledge level. Practice score of participants below 50% was categorized as low practice level, practice score of participants between 50% to 70% was categorized as moderate practice level and practice score of participants above 70% was categorized as high practice level. Reliability of the questionnaire was determined using split-half method and Cronbach's alpha reliability coefficient was 0.85. The training modules was also pre-tested and found suitable for the study.

Recruited participants were asked to complete the developed and structured questionnaire after they have been well informed about the study and consent has been obtained to collect data on knowledge and practice regarding exclusive breastfeeding pre-intervention and six weeks post-intervention at the postnatal clinic visit. Home visit was done to also obtain data regarding practice, frequency of breastfeeding and to confirm that no other food or drink was introduced to the babies. Participants in the experimental group were exposed to two days training programme consisting of two modules on exclusive breastfeeding with each module completed one day during the clinic days of each week within one hour while participants in the control group were exposed to a training programme on immunization during the same period. Data were processed

using statistical package for social science (SPSS), version 21. Two research questions were answered using descriptive statistics of percentage, mean and standard deviation and two hypotheses were tested using inferential statistics of student t- test at 0.05 level of significance.

Results

Table 1: Frequency and percentage showing demographic data of participants

Variables	Pregnant mothers n =30	Frequency (%)
Age		
	Below 20 years	6(20)
	20-29 years	(15)50
	30-39 years	(7)23
	40-49 years	(2)6
Educational level		
	No formal education	5(17)
	Primary school certificate	7(23)
	Secondary school certificate	11(37)
	OND/HND or BSc	7(23)
Occupation		
	Self-employed	5(17)
	Civil servant	10(33)
	Trader	7(23)
	House wife	8(27)

Table 1 reveals that 6 participants (20%) were below 20years, 15 participants (50%) were between 20-29 years, 7 participants (23%) were between 30-39 years and 2 participants (6%) were between 40-49 years. Table 1 shows that 5 participants (17%) had no formal education, 7 participants (23%) had primary school certificate, 11 participants (37%) had secondary school certificate and 7 participants (23%) had OND, HND or BSc certificate. Table 1 reveals that 5 participants (17%) were self-employed, 10 participants (33%) were civil servants, 7 participants (23%) were traders, 8 participants (27%) were house wife.

Obstetric data of participants

Table 2: Frequency and percentage showing Obstetric data of participants

Variable	Pregnant mothers n =30	Frequency (%)
Parity		
	1-2 previous babies	22(73)
	3-4 previous babies	8(27)
Gestational age		
	Less than 36 weeks	8(27)
	36-42 weeks	22(73)

Table 2 shows that 22 participants (73%) had between 1-2 previous babies and 8 participants (27%) had between 3-4 previous babies. Table 2 reveals that 8 participants (27%) were less than 36 weeks and 22 participants (73%) were between 36-42 weeks.

Table 3: Descriptive statistics of participants’ pre and post-intervention knowledge regarding exclusive breastfeeding

	Max point on scale	Pre-intervention mean	Pre intervention standard deviation	Post intervention mean	Post intervention standard deviation	Mean difference
Control group	17	0.518	0.134	0.583	0.167	0.065
Experimental group	17	0.612	0.267	0.728	0.107	0.116

Table 3 shows that in the control group, the pre-intervention knowledge mean was 0.518 and the standard deviation was 0.134 while the post-intervention knowledge mean was 0.583 and the standard deviation was 0.167. In the experimental group, the pre-intervention knowledge mean was 0.612 and the standard deviation was 0.267 while the

post-intervention knowledge mean was 0.728 and the standard deviation was 0.107. Table 3 reveals that mean difference in knowledge among participants in the control group was 0.065 while the mean difference in knowledge among participants in the experimental group was 0.116.

Table 4: Descriptive statistics of participants’ pre and post-intervention practice regarding exclusive breastfeeding

	Max point on scale	Pre-intervention mean	Pre-intervention standard deviation	Post-intervention mean	Post intervention standard deviation	Mean difference
Control group	8	0.511	0.121	0.567	0.252	0.056
Eexperimental group	8	0.501	0.110	0.792	0.119	0.291

Table 4 shows that in the control group, the pre-intervention practice mean was 0.511 and the standard deviation was 0.121 while the post-intervention mean practice was 0.567 and the standard deviation was 0.252. In the experimental group, the pre-intervention practice mean was 0.501 and the standard deviation was 0.110 while the post-intervention

mean practice was 0.792 and the standard deviation was 0.119. Table 4 reveals that mean difference in practice among participants in the control group was 0.056 while the mean difference in practice among participants in the experimental group was 0.291.

Table 5: Descriptive and inferential statistics of participants’ knowledge regarding exclusive breastfeeding

	Max point on scale	Pre intervention mean	Pre intervention standard deviation	Post intervention mean	Post intervention standard deviation	Mean difference	t-value	p-value
Control group	17	0.518	0.134	0.583	0.167	0.065	14.541	0.000*
Experimental group	17	0.612	0.267	0.728	0.107	0.116		

Table 5 shows that in the control group, the post-intervention knowledge mean was 0.583 and the standard deviation was 0.167 while in the experimental group, the post-intervention knowledge mean was 0.728 and the standard deviation was 0.107. The mean knowledge difference for the control group was 0.065 while the experimental group was 0.116. Result reveals that there is a

significant difference in post-intervention knowledge score among participants in the experimental and control group. There is a significant difference in effect of a nursing-based intervention on knowledge concerning exclusive breastfeeding among participants in the experimental and control group ($P = .000$).

Table 6: Descriptive and inferential statistics of participants practice regarding exclusive breastfeeding.

	Max point on scale	Pre intervention mean	Pre intervention standard deviation	Post intervention mean	Post intervention standard deviation	Mean difference	t-value	p-value
Control group	8	0.511	0.121	0.567	0.252	0.056	14.541	0.000*
Experimental group	8	0.501	0.110	0.792	0.119	0.291		

Table 6 shows that in the control group, the post-intervention practice mean was 0.467 and the standard deviation was 0.252 while in the experimental group, the post-intervention practice mean was 0.792 and the standard deviation was 0.119. The mean knowledge difference for the control group was 0.056 while the experimental group was 0.291. Table 6 reveals that there is significant difference in post-intervention practice score between pregnant women in the experimental and control group. There is a significant difference in effect of a nursing-based intervention on practice concerning exclusive breastfeeding among participants in the experimental and control group ($P = .000$).

Discussion of findings

There were more participants between 20-29 years during data collection. This finding agrees with a previous quasi experimental study in which there were more participants between 20-29 years during data collection^[13]. There were more secondary school certificate holders during data collection. This finding supports a previous quasi experimental study in which there were more secondary school certificate holders during data collection^[13]. There were more civil servants during data collection. This finding disagrees with previous quasi experimental study in which result showed more self employed participants during data collection^[13]. There were more participants with 1-2 previous babies during data collection. This finding disagrees with a previous quasi experimental study in which there were more participants with 2-3 previous babies during data collection^[13]. There were more participants with gestational age between 36-42weeks during data collection. This finding agrees with a previous quasi experimental study in which there were more participants with gestational age between 36-42weeks during data collection^[13].

Result reveals that pre-intervention, there was no difference in pre-intervention mean knowledge regarding exclusive breastfeeding among participants in the experimental and control group as judged from pre-intervention mean knowledge scores of the experimental and control group. Post-intervention, there was a difference in mean knowledge regarding exclusive breastfeeding in the experimental group when compared with control group. This is due to the level of exposure to exclusive breastfeeding education among participants in the experimental and control group. This finding supports a previous quasi-experimental study in which result also showed difference in experimental group post-intervention mean knowledge score when compared with control group^[13].

Result reveals that pre-intervention, there was no difference in practice concerning exclusive breastfeeding among participants in the experimental and control group as judged from pre-intervention mean practice scores of the experimental and control group. Post-intervention, there was a difference in mean practice regarding exclusive breastfeeding among participants in the experimental group when compared with control group. This is due to the level of exposure to nursing-based interventions on exclusive breastfeeding among participants in the experimental and control group. This finding supports a previous quasi experimental study in which result also showed difference in experimental group post-intervention mean practice score when compared with control group^[13].

Result shows that in the experimental group, knowledge concerning exclusive breastfeeding was improved by the nursing-based intervention judging from the increase in post intervention mean knowledge score when compared with the pre-intervention mean knowledge score. Student t-test was further used to show that there is a significant difference in effect of a nursing-based intervention on knowledge concerning exclusive breastfeeding among participants in the experimental and control group ($P = 0.000$). The finding reveals that prior to the training; there was no difference in knowledge concerning exclusive breastfeeding among nurses in the two groups as judged from pre-intervention mean knowledge scores. Six weeks post-intervention, the training programme was found to be effective in allowing participants in the experimental group have higher mean knowledge score post-intervention compared with pre-intervention. The finding supports previous quasi-experimental study in which interactive lecture was used to increase mean knowledge score concerning exclusive breastfeeding among pregnant mothers which also supported the use of a nursing-based intervention to improve knowledge concerning exclusive breastfeeding among pregnant mothers^[13].

Result shows that in the experimental group, practice concerning exclusive breastfeeding among participants was improved by the training programme judging from the increase in post-intervention mean practice score when compared with the pre-intervention mean practice score. Result showed that there is significant difference in effect of a nurse-led training programme on practice concerning exclusive breastfeeding among participants in the experimental and control group ($P = 0.000$). The finding of this investigation revealed that prior to the training; there was no difference in practice concerning exclusive

breastfeeding among participants in the two groups as judged from pre-intervention mean practice scores. Two weeks post-intervention, the training programme was found to be effective in allowing participants in the experimental group have higher mean practice score post-intervention when compared with pre-intervention. The finding supports previous quasi-experimental study in which lecture and demonstration method was used to increase mean practice score concerning exclusive breastfeeding among participants which also supported the use of nursing-based intervention to improve practice concerning exclusive breastfeeding among pregnant mothers ^[13].

Summary

The effect of a nursing-based intervention on exclusive breastfeeding among pregnant mothers attending antenatal clinic in two primary healthcare centres in Ikenne Local Government area, Ogun State was the focus of this study. Post-intervention, there was a difference in mean knowledge and practice regarding exclusive breastfeeding among participants in the experimental group when compared with control group. The nurse-led training programme was effective in improving knowledge and practice concerning exclusive breastfeeding among pregnant mothers as participants in the experimental group showed significant improvement in knowledge and practice when compared with the control group.

Conclusion

Based on findings of this study, there was a difference in post-intervention mean knowledge and practice regarding exclusive breastfeeding among participants in the experimental group when compared with control group. Nursing-based interventions on exclusive breastfeeding enhances knowledge and practice concerning exclusive breastfeeding among pregnant mothers as this study achieved a difference in post-intervention mean knowledge and practice concerning exclusive breastfeeding between the control and experimental group. The study also achieved a significant difference in the effect of nursing-based intervention on knowledge and practice regarding exclusive breastfeeding among pregnant mothers in the control and experimental group. Hence, the nurse-led training programme has significantly improved knowledge and practice concerning exclusive breastfeeding among pregnant mothers.

Recommendations

Based on findings of the study, the following recommendations are made:

- Pregnant mothers should be regularly exposed to trainings on exclusive breastfeeding by nurses to improve their knowledge and practice regarding exclusive breastfeeding which is necessary to improve mothers knowledge and practice regarding exclusive breastfeeding.
- Hospitals should regularly review their protocols and policies on breastfeeding to ensure latest approaches is being implemented by nurses and made available to mothers.
- Private and government owned hospitals should create more awareness on exclusive breastfeeding by organizing education and training programmes for

mothers which is necessary to improve their knowledge and practice regarding exclusive breastfeeding.

Limitation of the Study

The study was limited by closeness in the distance between the experimental and control group settings. The study was also limited by lack of evaluation of the experimental group four months after the training programme has been implemented.

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Competing Interests

No competing interest existed throughout the study.

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