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Research Article

Breastfeeding Procedure and Lactation-Related Problems among Nursing Mothers in Selected Primary Health Care Centres in Kaduna South, Nigeria: An Intervention Study

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Abstract: Background: Breastfeeding is the act of milk transference from mother to baby that is needed for the survival and healthy growth of the baby into an adult. It was observed during the clinical posting that many breastfeeding mothers that attend this primary health care centres encounter a lot of challenges in the course of breastfeeding their babies hence many stopped breastfeeding at early stage. Consequently, this study aim to determine the effect of nursing intervention on lactation- related problems among nursing mothers. Materials and methods: A quasi-experimental design was conducted with multistage sampling to select sample size (n= 36). A self-constructed questionnaire was used to measure the effect of nursing intervention on lactation-related problems. Data were analysed using descriptive statistics, and t-test at 0.05 levels of significance, through statistical package for the social science software. Results: The result showed that the knowledge of mothers on breastfeeding procedure with means (6.888 ±1.808). It also shows that the t-test of the pre and post knowledge on the following areas; procedure for breastfeeding (t=2.11, p= 0.005), breastfeeding problems (t = 9.17, p=0.001). Conclusion: The training was effective in improving the level of knowledge of breastfeeding procedure and breastfeedingrelated problems. Based on the above findings, it is recommended that the government should help in minimizing these breastfeeding-related problems by organizing seminars, workshop and extension services to enlighten women on breastfeeding problems and early prevention.

Keywords: Education, nursing intervention, knowledge, lactation, Nigeria.

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Introduction

Breastfeeding is the act of milk transference from mother to baby that is needed for the survival and healthy growth of the baby into an adult [1]. Breastfeeding provide infant with essential calories and nutrients to nourish the baby by National Institute of Child Health & Human Development, in 2009 [2]. According to the American Academy of Paediatrics (AAP) policy Statement on Breastfeeding, women who do not have health problems should exclusively breastfeed their infants for at least the first six months of life [3, 4]. The importance of appropriate infant feeding and the vital role played by breastfeeding in child survival, growth and development cannot be overemphasized [5]. The World Health Organization (WHO) has recommended two years breastfeeding; first six of month's exclusive breastfeeding; more than eight times breastfeeding per day in the first three months of an

infant's life [6]. The AAP suggested that a woman should try to breastfeed her infant for the first twelve months of life [3, 4]. Despite the documented value of exclusive breastfeeding during the first months of a child's life and struggles for promoting this practice, rates for exclusive breastfeeding in Nigeria are below those recommended by the World Health Organization (WHO), which advocates exclusive breastfeeding during the first six months of baby's life [7]. Breastfeeding a baby exclusively for the first six months and then continued breastfeeding in addition to appropriate solid foods until twelve months and beyond has health benefits for both mother and the child and these include; reduction of the risk of mothers from developing gestational diabetes, osteoporosis, and breast cancer [8]. It can also assist the women to lose weight after delivery, and also help the uterus of the women to return fast to pre-pregnant state [9, 10]. Advantages to the babies may also include: reduced risk

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of development of gastro intestinal illness, allergies, asthma, diabetes, obesity, some childhood cancer, respiratory infections and diarrhoea [10, 11].

The technique used in breastfeeding, especially mother-infant positioning and attachment or suckling by the infant, has been shown to be important for the effective transfer of milk from the breast to the child as well as for preventing nipple damage [12, 13]. Infant's head and body aligned facing the mother and in close contact with the mother's body, infant's arm not between the mother and infant, infant's head and neck supported, infant's mouth facing the nipple, and infants nose free for breathing [12]. Breastfeeding is the natural way to feed a baby but that does not always mean it is easy [14, 15]. Many breastfeeding mothers encounter a few challenges in the course of using one breastfeeding technique or the other [15]. Studies show that most breastfeeding mothers have experienced variety of difficulties as a result of some of the techniques used both to the baby and themselves as mothers and therefore don't like to breastfeed their babies [16, 17]. Considering breastfeeding as a major ingredient for proper growth and development of babies and their mother recovering, it is therefore important to find out the effect of nursing intervention on lactation-related problems among nursing mothers in selected Primary Health Clinics in Kaduna State, Nigeria.

MATERIALS AND METHODS

This is quasi-experimental design, which was conducted from December 2018 to July 2019 and adopted non-equivalent pre-test-post- test design, multistage sampling was used to select sample size of 36. There are three senatorial districts in Kaduna state. The first stage involved selection of the southern senatorial district which was randomly selected out of the three. Stage two involves selection of two primary health facilities within the Kaduna south senatorial districts by convenience sampling. Stage three involves selection of the sample from the two primary health centres through probability sampling technique. The sample size was calculated determined using the formula: n = Z2pq/d2. n = Sample size z = Standarddeviation set at 1.96 corresponding to 95% confidence level, p = Prevalence of lactation-related problems in Nigeria from previous studies equal to 40.83% = 0.4083Okoli, 2012, d = Degree of freedom at 5% = 0.05, q = 1- p. the setting was three selected primary health centres from Kaduna south among all the primary health centres available and all the nursing mothers who met the inclusion criteria will be selected.

The inclusion criteria were as follows: All Nursing mothers who attended any of the two selected primary health care centres in Kaduna south, whose babies are less than six months old and who were currently breastfeeding their babies. The exclusion criterion was any mothers with babies having congenital malformation or abnormalities like cleft lip

and palate and as such mothers find it difficult to breastfeed, that could limit her in participating in the training program and other activities of the study were excluded.

A well-structured questionnaire was used to collect data. The questionnaire is made up of the sociodemographic data and questions to assess the knowledge of lactation-related problems among nursing mothers. The knowledge level of nursing mothers was categorized as high (11-13), moderate/average (6-10) and poor (1-5).

An introductory letter was obtained from the Dean School of Post Graduate studies, Babcock University and the letter will be presented to the heads of the Primary Health Clinics where the research was conducted. The researcher made arrangement with the head of the PHC Units to select and brief the research assistants on what to do during the training. The date and the time for the training were given to them. The intervention group was briefed on the program. The venue for the program was at the children welfare clinic at the primary health care centre. Pre-test was administered with the help of the research assistants and this was served as baseline data. This was followed by modules of training for four consecutive weeks and the post test was administered at the end. Each training session lasted for one hour. The research assistants also help in collecting the data using the structured questionnaire. The completed questionnaires was collected, coded and analysed. Information obtained at the end of this study was processed using the computer software package for social sciences (SPSS), version 21 statistical software version 21.00 (IBM corp released 2012 Armonk, NY: IBM Corp). Variables and research questions were analysed using descriptive and t-test statistics.

Ethical Considerations

Ethical clearance was obtained from Babcock University Health Research and Ethical committee with approval reference BUHREC592/16 on 30th November 2016, and Permission was also sought from the ethical committee of the heads of the primary health care centres to be used for the research work. Participation was based on acceptance to participate and the subjects were informed that they can decline at any point during data collection. The subjects were informed about the anonymity of the information that will be collected from them. Informed consent was obtained by each participant signing the information sheet.

RESULTS

Demographic characteristic of the respondents were presented in Table-1 the respondents with 1- 2 numbers of children were 28 (77.78%) while those with children number 3 to 4 were 8 (22.22%). The number of times got pregnant differs, 8 (22.22%) were pregnant

once; 16 (44.44%) twice; 8 (22.22%) thrice and 4 (11.11%). The age of the respondents ranges from 13 to 36 years, with a mean age of 23.91. Majority (55.56%) of the respondents were between the ages of 21 and 28 while the lowest number of 4 (11.11%) was recorded between age 13-20. The highest education attained by all the respondents was secondary education. However, the occupation of the respondents varied, full time housewife and traders were 11 (30.56%) respectively while 14 (38.88%) were students. All the 36 (100%) maternal respondents are Christians. On the other hand, the respondents were of different tribes, Hausas were 8 (22.22%); Igbos' were 16 (44.44%) and others were 12 (33.34%).

The knowledge level of nursing mothers on the procedure for breastfeeding is shown in Table-2. It shows that majority 14 (38.8%) of the participants had moderate knowledge level of procedure for breastfeeding, 12 (33.4%) had low knowledge level of procedure for breastfeeding, and the remaining 10 (27.8%) had high level of procedure for breastfeeding. It also shows an overall low knowledge level for breastfeeding techniques and associated problems with mean of 6.88± 1.808.

The difference between the knowledge level of pre and post -Intervention on the procedure for breastfeeding after four weeks of training programme is shown in Table-3 It shows a significance different between pre and post intervention on knowledge of breastfeeding procedure $t=2.11,\,P=0.005$ as shown in Table-3.

The difference between the knowledge level of pre and post -Intervention on knowledge of breastfeeding problems are shown in Table-3 it shows that there a significant difference between the pre and post intervention knowledge level of mothers on breastfeeding with $t=9.17,\,P=0.001.$

Table 1: Socio-demographic Data of Nursing Mothers in Selected Primary Health Care Centres in Kaduna South,

Nigeria								
Variable	Frequency (N = 36) (%)							
Number of children								
$\frac{1-2}{3-4}$	28(77.78)							
3 – 4	8(22.22)							
5 – 6	-							
Above 6	-							
Number of times pregnant								
Once	8(22.22)							
Twice	16(44.44)							
Thrice	8(22.22)							
Four and above	4(11.11)							
Age								
13 - 20	4(11.11)							
21 - 28	20(55.56)							
13 – 20 21 – 28 29 – 36	12(33.33)							
37 – 44	-							
≥ 45	-							
Educational level								
None	-							
Primary	-							
Secondary	36(100.00)							
Tertiary	-							
Others	-							
Occupation								
Full time housewife	11(30.56)							
Civil servant	-							
Trading	11(30.56)							
Daily labour	-							
Student	14(38.88)							
Religion								
Christianity	36(100.00)							
Islam	-							
Others	-							
Tribe								
Hausa	8(22.22)							
Yoruba	-							
Igbo	16(44.44)							
Others	12(33.34)							

Table-2: knowledge level of mothers on adequate breastfeeding procedure and associated problems among Nursing Mothers in Selected Primary Health Care Centres in Kaduna South, Nigeria

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Knowledge on Procedure	Category	Frequency	Percentage	Minimum	Max	Range	Mean	SD.
High knowledge	11-13	10	27.8	1.00	13.00	12	6.888	1.808
Moderate knowledge	6-10	14	38.8					
Low knowledge	1-5	12	33.4					

Table-3: Independent t-test to shows the difference between the knowledge level of pre and post Intervention on the procedure for breastfeeding after four weeks of training programme

Group	N	X	Std. Dev	Mean Diff.	Df	t	P
Pre-intervention	36	10.105	2.404	1.866	70	2.11	0.005
Post intervention	36	11.971	2.023				

Table-4: Independent t-test to shows the difference between the pre and post intervention Knowledge level of mothers on breastfeeding problems

Group	N	X	Std. Dev	Mean Diff.	Df	t	P
Pre-intervention	36	28.628	10.308	6.379	70	9.17	0.001
Post intervention	36	35.007	8.308				

DISCUSSION

The study shows that the respondents have a poor knowledge on the procedure of breastfeeding techniques and the associated problems. In 2018, Cascone et al., findings agreed with this present finding. They found out that there is a poor knowledge of women about breastfeeding and opined that there is a need to increase efforts to make mothers aware of health benefits of breastfeeding for themselves and their offspring during their hospital stay after delivery [18]. Moreover, in previous years, a study conducted in Northern Portugal by Cardoso et al., in 2017, corroborate with this present finding. They suggested that pregnant women were more knowledgeable in benefits of breastfeeding but lack the appropriate skills of breastfeeding and the study confirmed that mothers need to learn how to breastfeed their babies, and that the learning process should be initiated during pregnancy [19].

Studies have showed that majority of women had misconceptions about the benefits of colostrum but believed that the first thing given to an infant after birth should not be breast milk but goat's milk or honey from the hands of a religious person or an elder in the family and in most cases the hygienic nature of this practice cannot be assured, thereby, expose the new born into infection [20-22].

This present study also shows that nursing intervention is very important to enhance proper breastfeeding. In 2015, Amaral eta al found that the nursing mothers had little knowledge of the benefit of breastfeeding such as mother-child bond, reduced cost of feeding, and the risk of post-partum bleeding. They also found that most reasons why mother don't breast feed their babies were: insufficient milk production, rejection of the breast by babies, and other lactation related diseases, they thereby opined that nurses and other health practitioners need to expand the guidance and support of breastfeeding for nursing mothers in the postpartum period [23]. this is further corroborated by a study [24]. Nurses should incorporate breastfeeding self-efficacy interventions into their routine care to support new mothers and to increase their breastfeeding self-efficacy and the duration of their breastfeeding exclusivity. Nurses have a major role to play in educating and encouraging mothers to maintain quality breastfeeding of their babies through individual teaching, giving mothers a sense of security, providing understanding care and telling them what to do with regard to lactation-related problems [25]. Therefore nurses need to be better trained to work on promoting breastfeeding, whether by schools of nursing or by healthcare managers, in order to consolidate multi-professional teams committed to maternal-infant health [26].

This present study also show that the breastfeeding of a baby more than three times in a day

help to prevent the risk of breast-related problems such as breast engorgement and sore nipples reduction of incidences and severity of infections; prevention of allergies; possible enhancement of cognitive development; and prevention of obesity, hypertension and insulin-dependent diabetes mellitus, which is in agreement with various studies [27-29].

The number of maternal respondents who did not know the duration to allow the baby to feed on the right breast and the left breast was higher before the intervention. This result might likely be responsible for sore nipples and breast engorgement in breastfeeding mothers of the participants, as they do not know the duration to allow their babies to feed on either the right or left breast. This is further explained by a study conducted in Saudi Arabia in 2016 which concluded that all babies should be breastfed for the first two years and water can be given after six months [30].

Furthermore, the post-test score for knowledge of breastfeeding procedure and lactation-related problems showed adequate improvement in knowledge among the participants. This is an indication that nursing intervention on lactation-related problems among nursing mothers in selected Primary Health Care Centres was very effective. This is in agreement with a study carried out in Lagos, Nigeria, and opined that immediate nursing intervention towards lactation related problems are very significant in maintaining exclusive breastfeeding, and recommended that all pregnant women should be educated on management of breastfeeding related problems prenatally establishment of breastfeeding support groups should be adopted.

Finally, some Limitations were encountered in the course of the Study despite the research objective being met. First, the researcher was unable to use a control group because of the crisis in Kaduna state and so one group quasi experimental design was used. Secondly, having all the women in one session for nursing intervention and post-test was difficult, hence the women were taking in different session, which could also affect the result.

CONCLUSION

Breastfeeding helps to protect the infant against some of the major causes of childhood morbidity and mortality and also benefit the mothers as well. However, breastfeeding mothers encountered some breastfeeding-related problems such as breast engorgement, sore nipples and so on. This finding revealed that nursing intervention on breastfeeding procedure and lactation-related problems among nursing mothers was very effective in improving the level of knowledge of breastfeeding mothers on breastfeeding related problems and its prevention. Based on this findings, it is recommended that the should help government in minimizing

breastfeeding related problems by organizing seminars, workshop and extension services to enlighten women on breastfeeding problems and early prevention.

APPENDIX

Training programme modules on Lactation-Related Problems among Nursing Mothers

Module one

The module consists of the following

- (a) The meaning of Breast feeding
- (b) The importance of Breast feeding to the Babies
- (c) The importance of Breast feeding to the Nursing mother.

General Objective: To teach Nursing Mother the Benefits of Breast feeding.

(a) Meaning of Breast feeding.

This is the method of feeding a baby with milk directly from the mother's breast. It is the most appropriate nourishment for most infants.

(b) The importance of Breast feeding to the Babies.

- (1) A healthier Baby
- (2) Long term protection from diseases
- (3) Stronger Bones
- (4) Lower the risk of sudden infant death syndrome to about half
- (5) Fewer problems with weight (obesity)
- (6) Reduced Risk of childhood cancer
- (7) Better antibody response to vaccines than formula-fed babies
- (8) Meet baby's changing needs

(c) Importance of Breast feeding to Nursing Mothers

- (1) Better healing post delivery
- (2) Less risk of cancer (premenopausal breast cancer).
- (3) A menstruation vacation (delays ovulation)
- (4) Less time off work (baby will be ill less)
- (5) It is cheap (cost less for mothers)
- (6) Provides a great way to learn about the baby
- (7) Provides post baby birth control option
- (8) It's very easy to feed the baby on breast than the stress of preparing artificial milk
- (9) Create better friendship or relationship with the baby

MODULE TWO

The Module consists of the following

- (a) Common Breastfeeding related problems
- (b) Signs and symptoms of breastfeeding related problems.
- (c) Causes of the Breastfeeding related problems and preventive measure.

General Objective: Nursing Mothers will be able to id entify the common breast feeding problems and prevent them

(a) Common Breast feeding related problems

- (1) Sore and damaged Nipples
- (2) Dermatitis
- (3) Breast Engorgement
- (4) Deep breast pain
- (5) Mastitis
- (6) Breast abscess
- (7) Bloc iced duets
- (8) White spots
- (9) Feeding difficulties from the baby (resulting from cleft lip and cleft palate).
- (b) Signs and Symptoms of breast feeding related problems.

(1) Sore and Damaged Nipples

Pep perish sensation on the nipple Pain on the nipple while breast feeding Bleeding at the region of the Nipple

Dermatitis

This is the inflammation of the slain around the Breast Sensitivity in the area when touched Inflammatory process will o cent there

(2) **Breast Engorgement**

Hardness of the Breast

Painful breast

Causes pyrexia (fetter)

Swollen Breast

(3) **Deep Breast Pain**

Pain at the Chest

Pain at the Breast

(4) Mastitis

There is breast inflammation (swelling) There will be redness of the area

It appears as a wedge-shaped area

There may be fever (high body temperature

(5) **Brest Abscess**

A fluctuant swelling develops in a previously

Inflamed area

Pus discharges from nipple

Pain at the affected side

(6) **Blocked Ducts**

Lump areas in the breast becomes firm and tender. Feeling of distention of glandular tissue

(7) White Spots

Blockage of the ductal opening to the tip of the nipple

(8) Feeding difficulties experienced by babies

Cleft lip and cleft palate

Tongue tie

Blocked nose

Down syndrome

Pre-maturity

(c) Causes of Breast feeding related problems and the preventive measures

Causes

- 1) Trauma from baby's mouth and tongue
- Topical applications such as cream or sprays on the breast
- 3) Failure to feed the baby consistently
- 4) Poor feeding techniques
- 5) Congenital (in cases of cleft lip and palate)

PREVENTIVE MEASURES

- 1) Nursing mothers should adequately feed their babies
- 2) Proper positioning is vital for effective breast feeding.
- 3) Use of cream and sprays on the breast should be discouraged.
- 4) Some of the congenital abnormalities can be corrected e.g cleft lip and palate
- 5) Breastfeeding should be timed for every baby not when they start to cry for food.

MODULE THREE

The module consist of the following

- a) Meaning of Breastfeeding positioning
- b) Different Breastfeeding positioning
- c) Effect of poor Breastfeeding positioning

General Objective: The Nursing Mother will be able to identify the different breast feeding positions.

a) Meaning of Breast feeding position.

Breast feeding position (s) has to do with the different techniques or patterns adopted while feeding the baby. Breast feeding latch can also be referred to as the proper positioning in breast feeding.

b) **Different Breastfeeding Positions.**

There are many different positions that can work while breastfeeding as explained by LaLeche League. It is important to find one that is comfortable for both the mother and the baby while utilizing the tips in the above list to help ensure that the position of the baby is correct.

Cross-Cradle Hold

This position is often the most helpful for mother's right after birth and until they get more confident in getting their baby latched on correctly. It feels awkward for many mothers at first but once they see how it allows them to use both their hands more effectively, mothers get more comfortable with it. The mother uses the arm on the opposite side she will be feeding from to hold and support the baby, while she uses the hand on the side the baby is feeding from to support the breast. The baby is laid next to the mother tummy-to-tummy, with her opposite hand supporting the back of his head. The mother uses the other hand (on the same side the baby is feeding from) to hold and navigate her breast and nipple. Once the baby is

securely latched on, she can move her arms to the cradle hold.

Cradle Holds

This position is often used after the baby is a few weeks old and the mother is more confident in her breastfeeding hold. The baby lays across the mother's front at breast level with his/her tummy toward her chest. The baby's head will be resting in the crook of her elbow on the same side she will be nursing from and then use the opposite hand to help hold her breast if she needs to help get the baby latched on properly.

Football Hold

The baby will lay along her side under her arm with her hand supporting the back of the baby's neck. The baby's bottom should bump up against whatever the mother is sitting in (back of the chair, couch). The mother should endeavour to bend the baby's legs at the hip so that he does not push his feet against whatever she is leaning against as this will affect how he will be able to latch. This hold is really great for a mother who had a cesarean birth and for women with large breasts.

Side-lying

Lay the baby on his/her side with a pillow behind his back for support. The mother should also lie on her side facing the baby. The mother might use a pillow behind her back or between her knees for support. The baby's nose should be in line with her nipple.

There are other positions that can work for both the mother and the baby once the mother and the baby are comfortable.

Module Four

The module consist of the following

(a) Signs of a good latch

Tongue is seen when the bottom lip is pulled down Ears wiggle

There is circular movement of the jaw rather than rapid chin movement

Cheeks are rounded

The mother does not hear clicking or smacking noises The mother can hear swallowing

Chin is touching the breast

When the baby comes off the breast, the nipple is not flattened or misshaped

Any discomfort ends quickly after getting the baby latched on

The baby ends the feeding with signs of satiety/satisfaction. These signs include: the baby looks relaxed, "falls" off the breast, has open hands, and/or falls asleep.

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