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RESEARCH ARTICLE

KNOWLEDGE OF MOTHERS TOWARD BREASTFEEDING: EFFECT OF COMMUNITY-BASED HEALTH EDUCATION PROGRAM, KOSTI LOCALITY, SUDAN2020

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Abstract

Breast feeding is considered as the basic nutrition of the newborn and infant with much benefits for both infant and mother, so it has to be started early and exclusively for 6months then continued with complementary feeding. In the current study, most of the participants found to be in the age group of 20-30years and they are illiterate or with primary level of education. Knowledge of the participants in the interventional group revealed noticeable change in the post interventional phase particularly Knowledge about benefits of breast feeding for children which revealed significant difference between pre interventional phase (44.4%) and post interventional phase (91.9%) in the intervention group. Based on this study findings it is concluded that health education programs are needed in the study area to promote under-five children's health.

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Introduction:-

All over the world, about 5.6million children deaths occur before the fifth day of birth, 46% of them died in the first month of life. Approximately 7000neonatal deaths happen every day, 39% and 38% of them found to be in Southern Asia and sub-Saharan Africa respectively. Numerous factors can be concerned to reduce this mortality include early initiating breastfeeding, the World Health Organization WHO recommends starting breastfeeding with the first hour after birth for all newborns and continued exclusively for the first 6months of life, this can reduce 20% of neonatal mortality and 13% of under f-five mortality.(Phukan, D.etal2018)

Newborn infections and related mortality can be reduced by maternal tetanus toxoid vaccination, clean delivery, cord hygiene, exclusive and early breastfeeding, prompt diagnosis, and therapy. Diarrhea deaths can be prevented by adequate attention to breastfeeding, hand washing, and sanitation strategies (Stenberg K .etal 2007). Exclusive breastfeeding and early initiation of breastfeeding are a part of the vital interventions that were implemented -55.4% and 55.4% respectively - by Sudan Government to reduce infant and under-five children mortality rate in Sudan, as reported by (Abdeldafie SY2018). Early initiation of breastfeeding is recommended by (Hamilton WN & Tarasenko Y N 2020) Africa has one of the highest prevalence of low birth weight ranging from 7-42%. The exclusive breastfeeding rate is low and complementary foods are inadequate and inappropriate in the region according to (WHO, USAID, UNICEF, and Partnership for Maternal, Newborn, and Child Health 2007).

Breastfeeding is defined as the gold standard for infant feeding practice (Al-Qahtani AM, etal 2020) .The benefits of exclusive breastfeeding for 6 months cover both infant and mother. For infants, it includes protection against

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gastroenteritis that is observed even in industrialized countries and also increases the survival rates by reducing neonatal mortality. It is considered as a vital source of energy and nutrients for children aged 6months-2years, decreasing the risk of obesity and underweight, and is linked to better intelligence level and high-performance rates. For mothers, breastfeeding decreases the risk of reproductive cancers eg: ovary and breast, facilitates child spacing by natural methods (WHO: Infant and young child feeding 2020).The first half-hour after delivery, the newborn's sucking reflex is strongest and the newborn is more alert, so it is the suitable time to start breastfeeding. It also releases a hormone that stimulates the uterus to reduce post-partum bleeding. Early breastfeeding is linked to fewer problems with nighttime feeding (Fairbank L 2000) .On-demand, feeding means feeding the newborn as often and long as the newborn desires. The total intake of milk per day varies between infants from 440-1220ml with an average of 800mlper day during the first 6months of life. Positioning and good attachment stimulate milk flow and facilitate effective sucking (WHO: Infant and young child feeding Model Chapter2009).

The American Academy of Pediatrics recommends exclusive breastfeeding throughout the first 6months of life then must be continued with the additional food known as a complementary food. (Breastfeeding CDC 2020).

Fresh expressed breast milk can be stored in the room temperature up to 4hours, for 4days in the refrigerator and best to be frozen with 6months and acceptable if it is frozen for one year.(CDC Breast milk, Guidelines, and recommendations for Proper Storage and Preparation of Breast Milk) 2020) While breastfeeding, about 0.25-0.5 grams every day of secretory IgA antibodies pass to the infant through breast milk with the target of intestinal microorganisms. This is the important property of colostrum.(Pediatric Health Hospital & research center Benefits of breastfeeding for an infant 2020)

Justification and rationale:

In Sudan, there were the highest rates of child mortality of 83 deaths per 1000 life birth (UNCEF, 2012). Many deaths can be prevented by changes in the lifestyle and basic health care at home to change health behavior, skills, and knowledge of the mother of under-five children about child health. Health Education has to do with those systematic, continuing or organized procedures, the primary purpose of which is to improve the health attitude-behavior or knowledge of individuals or groups. "It is generally agreed that everyone should possess certain fundamental disease prevention knowledge and attitude. The periodic health examination is the keystone of a health education program for an individual.

Objectives:-

1. To assess the current knowledge of mothers of under-five children towards breastfeeding.
2. To implement a health education program designed based on the mother's needs.
3. To study the effects of health education program on Knowledge towards breastfeeding among mothers of under-five children.

Methodology:-

Study design:

This is an interventional community-based study aiming to evaluate the effects of health education program among mothers of under-five children in an interventional group compared to a control group toward their knowledge regarding breastfeeding.

Study area:

White Nile State includes seven localities. The main one is the Kosti locality which includes (26) villages. Only four villages are selected for conducting the study and they are classified into two groups as follow:

The interventional group:

This was represented by Dera and Hilat el-Sheikh Adam villages, which were selected randomly and there is one primary school and no secondary school nor health center in these villages but there is in near villages.

The control group:

This was represented by Beer el-Kiter and Sharaga villages. The selected villages are inhabited by different tribes. There was also one primary school and no secondary school. The source of drinking water is wells, however, they suffer from a lack of electricity as well as health services.

Study population:

The study population comprises all mothers having under-five children in the selected village during the period of the study.

Inclusion criteria:

All mothers of under-five children in the selected villages and who agree to participate in the study were enrolled.

Sampling technique:

The procedure of random selection of the sample went as follows:

First: Selection of villages from Kosti locality which comprises 26 villages. Using tossing methods, 4 villages were selected; the 4 villages were further classified into two groups, again using the tossing method.

Second: a survey was carried to enumerate the households in the selected villages. Then a home-to-home survey was carried out to determine the number of households with mothers of under-five children. In the interventional villages, there was 160 household, while the control group villages contained 169 households. In the end, a total of 320 mothers of under-five children were included in the study.

Sample size:

The 320 mothers of under-five children in the selected villages were enrolled in the study.

Methods of data collection:

A questionnaire of close-ended questions was used for data collection. All questionnaires were filled using direct personal interviews which were carried out during home visits paid for all targeted mothers in the four villages.

Phases of the study:

The study consisted of the following three consecutive phases:

Pre-intervention phase:

The consent of the community leaders in the selected four villages was obtained to carry out the study. A model of the questionnaire was designed including all variables related to mothers' knowledge concerning breastfeeding. The research team consisted of four teaching assistants from the Nursing Department (University of AlimamElmahady) who were selected and trained for two weeks (9 sessions). The training sessions dealt with the methods of health education and health message including in the study. In this phase also, a health educational program containing health messages was prepared.

Interventional phase:

The interventional phase contains the following procedures:

In addition to the researcher, the four researcher assistants were assigned to train a group of mothers ranging from 15-17 mothers in the two villages.

Each researcher assistant instructed mothers and conveyed health education messages during home visiting and the visit took 1 hour and two messages in one month.

The researcher and the research assistants supervised 8 group discussion and the duration of discussion was less than two hours by using hand-outs and material depended to health education message, however, each group includes 10 or fewer mothers in order to make the discussion manageable, and the period of the intervention was 8 months. Before the final evaluation phase, there was a memory gap lasted for six months.

Evaluation phase:

A post-assessment questionnaire was done for both interventional and control groups to evaluate the impact of the health education program on the knowledge of mothers of under-five children concerning breastfeeding.

Data analysis:

Data were analyzed using the Statistical Packages for Social Sciences (SPSS version 20.0). Results were presented in the form of tables and graphs, in addition to the calculation with P-value by using Chi-square and performing

statistical significance analysis to test the impact of the intervention on the knowledge of mothers the P.value was accepted when it is less than 0.05.

Ethical considerations:

An official letter was sent to the White Nile State Ministry of Health for having permission to conduct the study. In each selected village, the verbal consent of both the community leaders and mothers was obtained before launching the study.

Results:-

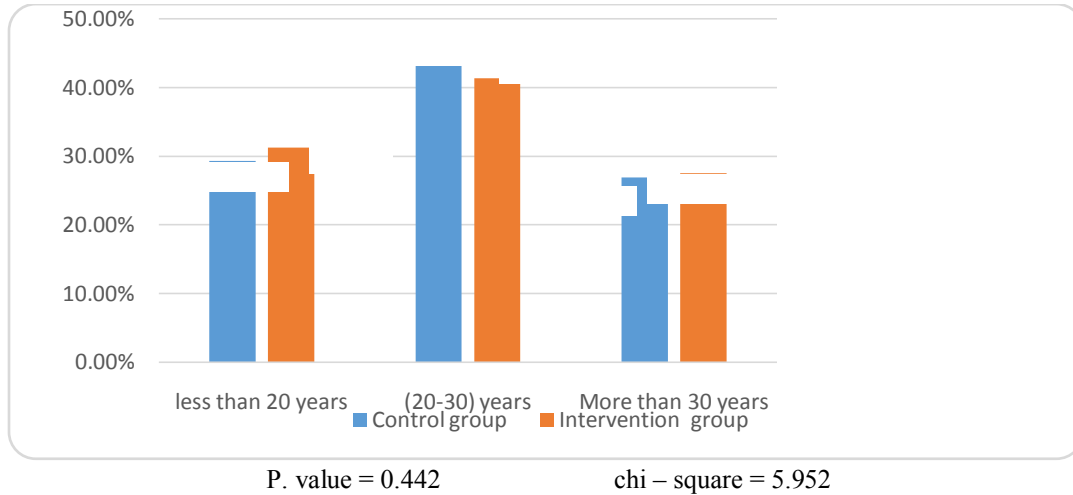


Figure 1:- Distribution of mothers of under five children by age (intervention & control) (n=320):

There is no significance differences between control& interventional group in age factor.

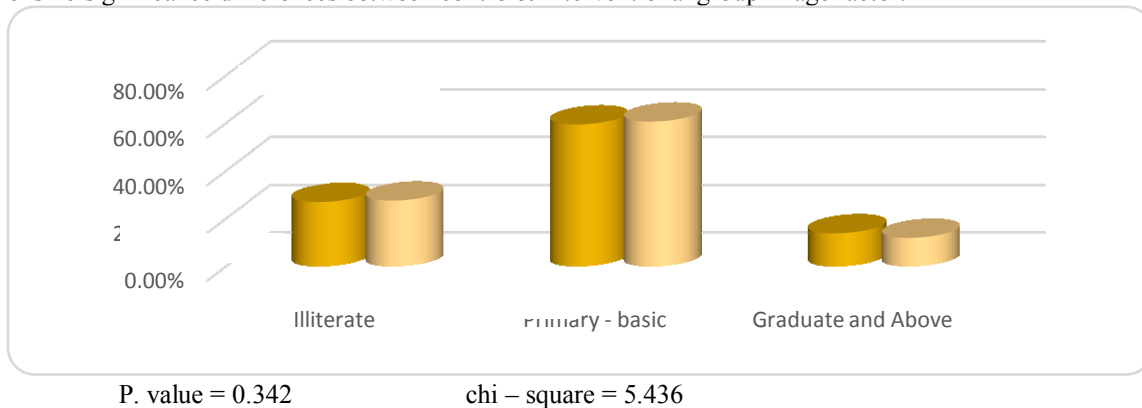


Figure 2:- Distribution of mothers of under-five children by level of education (intervention& control) (n=320):

There are no statistical differences between the intervention group and the control group regarding the level of education.

Table 1:- Knowledge of mothers of under-five children regarding the definition of exclusive breastfeeding (intervention & control) (n=320).

Participants' response	Intervention group				Control group			
	Pre		Post		Pre		Post	
	N	%	N	%	N	%	N	%
Known	40	25.0%	146	91%	62	38.8%	51	31.9%
Unknown	120	75.0%	14	8.7%	98	61.3%	109	68.1%
Total	160	100%	160	100%	160	100%	160	100%

Chi- square = 6.731 P. value = 0.059 Chi- square = 29.325 P. value = 0.001

Their knowledge was significantly improved in the intervention group.

Table 2:- The Knowledge of mothers of under-five children regarding the benefit of Breastfeeding for their children (interventional& control) (n=320):

Participants' response	Intervention group				Control group			
	Pre		Post		Pre		Post	
	N	%	N	%	N	%	N	%
Know	71	44.4%	147	91.9%	57	35.6%	66	41.3%
Not Know	89	55.6%	13	8.1%	103	64.4%	94	58.8%
Total	160	100%	160	100%	160	100%	160	100%

Chi- square = 8.231 P.value = 0.066 Chi- square = 22.345 P.value = 0.002

The knowledge of mothers regarding the benefits of breastfeeding for their children was significantly improved in the interventional group

Table 3:- knowledge of mothers of under-five children regarding the benefit of breastfeeding for mother (intervention and control group) n = 230.

Participants' response	Intervention group				Control group			
	Pre		Post		Pre		Post	
	N	%	N	%	N	%	N	%
Know	16	10.0%	123	76.9%	26	16.3%	36	23.1%
Not Know	144	90.0%	37	23.1%	134	76.9%	123	76.9%
Total	160	100%	160	100%	160	100%	160	100%

Chi- square = 7.231 P. value = 0.056 Chi- square = 36.345 P. value = 0.000

The knowledge of mothers regarding the benefits of breastfeeding for mother was significantly improved in the intervention group.

Table 4:- Knowledge of exclusive breastfeeding among mothers of under-five children (intervention & control) (n=320).

Participants' response	Intervention group				Control group			
	Pre		Post		Pre		Post	
	N	%	N	%	N	%	N	%
Correct answers	47	29.4%	125	78.1%	50	31.2%	54	33.7%
In correct answers	113	70.6%	35	21.9%	110	68.8%	106	66.3%
Total	160	100%	160	100%	160	100%	160	100%

Chi- square = 6.470 P. value = 0.085 Chi- square = 22.231 P. value = 0.001

The knowledge of mothers regarding exclusive breastfeeding was significantly improved in the intervention group.

Table 5:- Reason behind not using exclusive breastfeeding among mothers of under-five children.

Participants' response	Interventional group		Control group	
	N	%	N	%
Not enough	44	38.9%	44	38.9%
Breast milk is water-free	46	40.7%	46	40.7%
Other	23	20.4%	23	20.4%
Total	113	100%	113	100%

More than 40% of mothers of under-five children in the two groups did not practice exclusive breastfeeding because they think that breast milk is water-free.

Table 6: Knowledge of mothers of under-five children regarding the meaning of weaning (interventional & control)(n=320)

	Intervention group				Control group			
	Pre		Post		Pre		Post	
	N	%	N	%	N	%	N	%
Correct answer	88	55.0%	133	83.1%	97	60.6%	103	64.4%
In correct answer	72	45.0%	27	16.9%	63	39.4%	57	35.6%
Total	160	100%	160	100%	160	100%	160	100%

Chi- square = 6.831 P. value = 0.069 Chi- square = 28.425 P. value = 0.00

The knowledge of mothers regarding the meaning of weaning was significantly improved in the intervention group.

Discussion:-

This is an interventional community-based design that aims to study the effects of a health education program on knowledge of mothers of under-five children regarding breastfeeding. Based on this study results there were no statistical differences between the control group and the interventional group regarding age and educational level, the P. value was found equal to 0.442 and 0.342 respectively. Most of the participants age between 20-30years and they are illiterate or having a primary level of education. This was considered during the educational program in which simple language and good clarification were used. Regarding the knowledge of mothers about breastfeeding, there was a statistically significant difference between the pre-interventional and post-interventional phases. The study also showed that before the educational program only 50% of mothers in the interventional group knew the benefits of breastfeeding for their children but after the educational program this percentage raised to 91.9%. So there was a significant change in the level of knowledge, the P-value equal to 0.066 which indicates a good effect of the educational program. Compared with the control group, no remarkable change was noticed in the post-interventional phase this agreed with the findings of (Al-HiallyYA 2010).

Regarding the benefits of breastfeeding for mothers in the interventional group, there was a small percentage of mothers (10%) knew it, but after the educational program it was noticed that an improvement has occurred (the percentage increased to 76.9%) and the P-value found to be 0.056 that means the participants need only simple education message to facilitate their knowledge, this advantages highlighted by (Holbrook, JH 2013). Dissimilar to our results, a study done in Italy revealed that Italian women are knowledgeable about exclusive breastfeeding and its relative benefits for mothers and their children. (Cascone D 2019). Before the educational program, about three-quarters of mothers did not know the correct meaning of exclusive breastfeeding which constitutes the main cause prevent them from practicing exclusive breastfeeding. More than 40% of the study participants of the two groups mentioned that breast milk is water-free, but after the educational program a noticeable improvement has occurred, before the educational program about 29.4% but after the intervention, the majority of the participants (78.1%) in the interventional group practiced exclusive breastfeeding which has a positive impact on child health with minimum change in knowledge in the control group. This result is similar to that of a study carried out by Mooche and Ahmed, in Nigeria in 2002 which revealed that 60% of mothers practice exclusive breastfeeding after education (Oche, M. O 2011). (AbeerOrabi 2017) found the barriers of breastfeeding are lack of knowledge, returning to work or school, using contraception, and insufficient milk supply were the most commonly identified among Saudi women while our study found that breast milk is not enough or it doesn't contain water are the most barriers among Sudanese women in Kosti locality. In both groups, the interventional and the control group, 40-45% of the participants did not know the correct meaning of weaning and complementary feeding before the study. But after implementing the program, the majority of the participants in the interventional group understood the correct meaning of weaning and complementary feeding. On the other hand, in the control group, no significant change was observed, this confirms the effect of the health education program on the interventional group. The World Health Organization (WHO) reports that poor nutrition status among infants is due to low adherence to exclusively breastfeeding (WHO: Infant and young child feeding 2020). The result of this study agrees with a study conducted in Ghana which reported that the mothers' knowledge improved to become 82% about initiating weaning after four months despite being 45.1% before receiving the intervention (Manyeh, A.K2020).

Conclusion:-

This study concluded that the knowledge of mothers of under-five children about breastfeeding, its benefits on the child and mother health, initiation of it, and weaning found to be dramatically increased in the post-interventional

phase as a result of using simple massage with simple language. Knowledge of mothers of under-five children about constraints and barriers of breastfeeding need to be covered by more researches. Educational programs about children's health promotion need to be conducted so that better health and improved survival rates will be gained.

Conflict of Interests:

The authors declare that they have no conflict of interests.

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