International Journal of Research in Medical Sciences
Ebikienmo F et al. Int J Res Med Sci. 2020 Sep;8(9):3171-3176
www.msjonline.org
pISSN 2320-6071 | eISSN 2320-6012
DOI: http://dx.doi.org/10.18203/2320-6012.ijrms20203662

Original Research Article

Nurse led educational intervention on the knowledge of management of selected childhood conditions among mothers of under five in tertiary hospitals in Bayelsa state

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Received: 15 July 2020
Revised: 14 August 2020
Accepted: 18 August 2020

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ABSTRACT

Background: Infant and child mortality remains a daunting challenge in Nigeria as findings showed inadequacy in knowledge and skills regarding management of selected childhood conditions among mothers. This study assessed a nurse-led educational intervention on management of selected childhood conditions among mothers of under-five in tertiary hospitals in Bayelsa State.
Method: Two group pre-test, post-test quasi-experimental design was used for the study. Total enumeration was adopted to include 150 mothers of under-five. Data were collected using a self-developed questionnaire and a checklist pre and post intervention. Two research questions were answered using descriptive statistics of while hypotheses were tested using inferential statistics of t-test at 0.05 level of significance.
Results: Findings showed that pre-intervention knowledge was below average in both control (23.19±6.66) and experimental (21.97±7.32) while an improvement was found with the participants' post-intervention knowledge on the management of selected childhood conditions in the experimental (49.99±5.86) group and not with the control (23.82±6.75) group. No significant difference was found in the pre intervention knowledge (Mean difference=1.22, $t_{(148)}$=1.01, p=0.103) in the control and experimental group, while a significant difference was reported in the post intervention mean score on knowledge (Mean diff. = 26.17, $t_{(148)}$=19.45, p=0.000) in the control and experimental group.
Conclusion: The nurse-led intervention programme improved knowledge and skills in the management of selected childhood conditions among mothers of under-five. It is recommended that more awareness should be created on the management of selected childhood conditions parameters.

Keywords: Childhood conditions, Management, Mothers, Tertiary hospitals, Under-five

INTRODUCTION

Management of childhood conditions by mothers has been an issue of concern because of its effect on the growth, development and survival of children. Childhood conditions are regularly occurring and would require adequate knowledge and skills about its management by mothers to achieve positive outcome of these conditions. United Nations Children's Fund stated that childhood conditions remain unacceptably high (60%) in the sub-Saharan African countries.[1] Furthermore, it has been estimated globally that 7 million children under the age of five died in 2015.[1] Although, the health outcomes of children improved dramatically worldwide during the 20th century, enormous disparities still exist between developed and developing countries. The variation in under-five mortality rates between the developing and developed nations is significantly high ranging from 180 per 1000 live births in Angola to 2.31 per 1000 live births in Singapore.[2] Furthermore, children have been at the

center of global efforts towards improving their health conditions, especially in developing countries because of the increasing morbidity and mortality rate among children which has been linked with inadequate knowledge and skills of management of childhood conditions.

United Nations has identified increasing morbidity and mortality rate among children due to childhood conditions which could have been managed by mothers of the children which include umbilical cord care, cough, oral thrush, eye infection and ear infection. In the year 2015, 2.7 million deaths occurred among neonates representing a significant reduction to 19 deaths per 1,000 live births from the previously 36 deaths per 1000 live births in 1990.[3,4] These may be attributed to inadequate knowledge and skills about management of childhood conditions among mothers. Neonatal mortality rate in Nigeria reduced by 20.4%, from 49 deaths per 1000 live births in 1990 to 39 deaths per 1000 live births in 2011,3 37 deaths per 1000 live births in 2013 and to 34 deaths per 1000 live births in 2015.[1]

Globally, Nigeria ranks second to India with the highest number of neonatal deaths.[3] These may be linked with inadequate knowledge and skills about management of childhood conditions among mothers. Although child survival programmes have helped reduce death rates among children under-five years over the past 25 years, the biggest impact has been on reducing mortality from diseases that affect infants and children over one month old. As a result, greater proportions of infant mortality occur during the first month of life, a period when a child's risk of death is nearly 15 times greater than at any other time before the first birthday.[5] These may be attributed to inadequate knowledge and skills about management of childhood conditions among mothers.

Richford and Adekanbi stated that mothers as primary caregivers possess low knowledge and skills about the management of childhood conditions which include umbilical cord care, cough, oral thrush, eye infection and ear infection as millions of children die yearly due to these childhood conditions.[6] Globally, morbidity and mortality among children has been on the increase and these has led to the introduction of the integrated management of childhood illness which is an approach to reducing morbidity and mortality rate due to childhood conditions as well as promote growth and development among the children.[7,8]

WHO has identified inadequate management of childhood conditions among mothers which has been attributed with increasing morbidity and mortality rate among children.[9] Furthermore, there has been a steady rise in the rate of hospitalization among children due to childhood conditions such as umbilical cord care, cough, oral thrush, eye infection and ear infection. This has been linked with inadequate knowledge and skills about management of childhood conditions among mothers. Oshikoya and Sebanjo opined that many children have been admitted and managed in the hospital for childhood conditions which should have been managed at home by mothers according to integrated management of childhood illness which include umbilical cord care, cough, oral thrush, eye infection and ear infection.[10] This has been linked with inadequate knowledge and skills about management of childhood conditions.

Adekanye and Odetola stated that there has been increasing cases of mismanagement of children with childhood conditions such as umbilical cord care, cough, oral thrush, eye infection and ear infection which should have been well managed by mothers of children according to integrated management of childhood illness guideline.[11] This mismanagement may be attributed to inadequate knowledge and skills about management of childhood conditions among mothers.

Jibo, Iliyasu, Abubakar, Umar and Hassan identified that mothers of children have not been adequately exposed to health education and training on management of childhood conditions which has negatively affected their knowledge and skills about management of childhood conditions as stated in the integrated management of childhood illness guideline.[12] In response to the lack of knowledge of mothers to effective care and avoid preventable diseases, the Nigerian government lunched programmes such as health education (or health-talk) that mostly focus in teaching mothers at every contact of their visit for ante and postnatal care service. Complimenting this government effort is, the non-governmental organizations, institutions and nurses who support in health-talks on radio and television; distribution of flyers and pamphlets; and demonstrations of skills by nurses on specific areas/topics. Despite these efforts, the level of illiteracy and ignorance among mothers as regards care for their children have seem not to have improved.

It is empirically evident that most mothers in Nigeria would prefer consult unskilled personnel or peer groups for advice on care for their children; a few would prefer to access alternative health care by using traditional medicine or remedies for massage or treatment.[13] These suggest a fundamental problem.

Hence, the study assessed nurse-led educational intervention on the knowledge of the management of selected childhood conditions among mothers of under-five in tertiary hospitals in Bayelsa State.

Research questions

The following research questions were answered:

1. What is the pre intervention knowledge mean score of participants on the management of selected childhood conditions in the control and experimental group?
2. What is the post intervention knowledge mean score of participants on the management of selected

childhood conditions in the control and experimental group?

Hypotheses

The following direct hypotheses were tested at 0.05 level of significance:

1. There is a significant difference in the pre intervention knowledge mean score of participants on the management of selected childhood conditions in the control and experimental group.
2. There is a significant difference in the post intervention mean score on knowledge of management of selected childhood conditions in the control and experimental group.

METHODS

Research design

This study utilized two groups pretest-posttest quasi-experimental design to assess the effect of training on mothers of under-five in tertiary hospitals in Bayelsa State on the management of selected childhood conditions (care for umbilical cord, cough, oral thrush, eye infection, and ear infection).

Study population

The study population consisted of 177 mothers of children 0 - 5years old attending the two tertiary institutions in Bayelsa State with 93 attending FMC, Yenagoa and 84 attending NDUTH, Okolobiri selected over a period of 3 months.

Sample size and sampling technique

A total of 177 mothers of under-five were sampled for this study, which included 93 mothers from Federal Medical Centre, Yenagoa and 84 mothers from Niger Delta University Teaching Hospital, Okolobiri both in Bayelsa State. The two hospitals were picked because they are both tertiary health facilities. Total enumeration method was utilized to include 93 mothers of under-five attending federal medical Centre, Yenagoa and 84 mothers of under-five attending Niger Delta University Teaching Hospital, Okolobiri both in Bayelsa State. Purposive sampling technique was utilized in selecting FMC, Yenagoa and NDUTH, Okolobiri because they have highest number of mothers with under-five attending the Infant Welfare Clinics. The two tertiary hospitals were assigned to the experimental and control groups through balloting. The experimental group was FMC, Yenagoa (93 mothers) while NDUTH, Okolobiri was the control group (84 mothers).

Instrumentation

Three research instruments were used namely:

Self-report questionnaire (SRQ). This section consists of six questions, which elicit responses on demographic variables of participants like age, marital status, educational status, ethnicity, Religion, and parity.

Test paper on mothers' knowledge on the management of selected childhood conditions (KMCC). The instrument was used to measure cognitive domain in order to determine mothers' knowledge on the management of selected childhood conditions. It consists of a total number of 60 questions. Twelve items each were raised for care for umbilical cord, cough, oral thrush, eye infection, and ear infection, making a total of 60 items in all. The overall correct score for the mothers' knowledge on the management of selected childhood conditions is 60. The scores were categorized into three: Scores between 1 and 29 is considered as below average, scores between 30 and 40 is considered as average knowledge while scores between 41 and 60 was considered as above average knowledge. Self-developed rating scale (SRS) on selected childhood conditions which was used to measure psychomotor domain of the participants. The rating scale is an observational instrument used to measure the skills of mothers on the management of selected childhood conditions and it consists of 20 responses. These are skills that are expected of the mothers to do and such was put under procedures and the score was rated between 0 and 1. Anyone that does not demonstrate the procedure correctly were score 0 and anyone that does it fairly well was scores ½ while those who did it correctly scores were 1. Maximum obtainable scores is 20. Scores between 1 and 7 was considered as below average skill knowledge, scores between 8 and 14 was regarded as average skill knowledge, while scores between 15 and 20 was regarded as above average skill knowledge.

Method of Data collection

Data collection was in three major phases which include:

1. A pre intervention visit session.
2. Intervention Session.
3. Post intervention session

Method of data analysis

The completed test paper was coded and analyzed using the statistical package for social science (SPSS) version 21. The two research questions of the study were answered using descriptive statistics of mean, standard deviation and percentages. Inferential statistics of independent t-test was utilized to test the hypotheses. All the hypotheses were tested at 5% level of significance.

Ethical consideration

Ethical approval for this study was obtained from Babcock University Health Research Ethics Committee (BUHREC).

RESULTS

Table 1 shows the pre-intervention knowledge mean score of participants on the knowledge management of selected childhood conditions in the control and experimental group. About fifty-one percent participants in the control group had below average score. In the experimental group, about fifty-four percent had below average score on knowledge management of selected childhood conditions. The pre-intervention knowledge mean score of participants on the management of selected childhood conditions in the control and experimental groups were below average and relatively poor.

Table 1: Pre-intervention knowledge mean score of participants on the management of selected childhood conditions in the control and experimental group.

Knowledge of management of selected childhood conditions	Category of scores	Control		Experimental	
		F	%	F	%
Below average	1-20	36	50.7	43	54.4
Average	21-40	24	33.8	29	36.7
Above average	41-60	11	15.5	7	8.9
Total		71	100.0	79	100.0
Mean±SD (%)		23.19±6.66 (38.7)		21.97±7.32 (36.6)	
Mean difference		1.22			
Maximum score		44.0		41.0	
Minimum score		15.0		13.0	

Table 2: post-intervention knowledge mean score of participants on knowledge of management of selected childhood conditions in the control and experimental group.

Knowledge of management of selected childhood conditions	Category of scores	Control		Experimental	
		F	%	F	%
Below average	1-20	35	49.3	02	2.5
Average	21-40	25	35.2	24	30.4
Above average	41-60	11	15.5	53	67.1
Total		71	100.0	79	100.0
Mean±SD (%)		23.82±6.75 (39.7)		49.99 ±5.86 (83.3)	
Mean difference		26.17			
Maximum score		42		60	
Minimum score		13		18	

Table 3: Independent t-test showing the difference in the pre intervention knowledge mean scores of participants on the management of selected childhood conditions in the control and experimental group.

	N	Mean	SD	Std. error mean	df	t	Mean difference	P value
Control	71	23.19	6.66	0.50				
Experimental	79	21.97	7.32	0.39	148	1.01	1.22	0.10

Table 2 shows the post-intervention knowledge mean score of participants on the management of selected childhood conditions in the control and experimental group. Less than fifty percent of the participants in the control group had below average score while about three percent in the experimental group had below average score on knowledge of the management of selected childhood conditions. Therefore, the post-intervention knowledge of participants on knowledge of the management of selected childhood conditions in the control group was poor but was high in the experimental group.

Table 3 indicated that there is no significant difference in the pre intervention knowledge mean score of participants on the management of selected childhood conditions in the control and experimental group (mean difference=1.22, $t_{(148)}$ =1.01, p=0.103). Based on this, the earlier set hypothesis cannot be accepted.

Table 4: Independent t-test to show the difference in the post intervention mean score on knowledge of management of selected childhood conditions in the experimental group.

	N	Mean	SD	Std. error mean	df	t	Mean difference	t-value
Control	71	23.82	6.75	0.58				
Experimental	79	49.99	5.86	1.07	148	19.45	26.17	0.000

Table 4 indicated that there is a difference in the post intervention mean score on knowledge of management of selected childhood conditions in the control and experimental group (Mean difference=26.17, $t_{(148)}$=19.451, p=0.000). Based on this, the earlier set hypothesis is retained.

DISCUSSION

The result revealed that mothers in both control and experimental groups lack adequate knowledge on the management of selected childhood conditions (umbilical cord care, cough, oral thrush, eye infection and ear infection). This result corroborate the findings of Richford and Adekanbi that mothers as primary caregivers possess low knowledge and skills about the management of childhood conditions as millions of children die yearly.[6] Globally, morbidity and mortality among children has been on the increase and these has led to the introduction of the integrated management of childhood illness which is an approach to reducing morbidity and mortality rate due to childhood conditions as well as promote growth and development among the children.[7,8]

The result on the improvement in the knowledge mean score of participants on the management of selected childhood conditions in the experimental group (from below average to above average) did not occur by chance but due to educational intervention being exposed to. This finding established the report of Adesanya and Chiao, Akinyemi and Morakinyo and Parvez in their various studies by establishing the fact that an appropriate educational intervention programmes manage by experts like nurses, doctors, psychologists will always bring about a positive change in behaviour.[14,15,16] The positive change in behaviour is often reflect in improved knowledge, practice, and skills of beneficiary. Also, this study lends credence to the findings of Israt who reported that those mothers exposed to educational information had an increase in knowledge of about 44%, which helped the parents or caregivers seek healthcare services and manage children's health.[17]

It was further revealed in this study that there was no significant difference in the knowledge mean scores of participants on the knowledge of the management of selected childhood conditions between the control and experimental group. This is supported by Jibo, Iliyasu, Abubakar, Umar and Hassan who reported that most mothers lack adequate skills and knowledge on the management of childhood conditions.[12] The lack of knowledge on the management of selected childhood conditions between the control and experimental group was as a result of the fact that mothers in the selected areas have not been adequately exposed to health education and training on management of childhood conditions which has negatively affected their knowledge and skills about management of childhood conditions as stated in the integrated management of childhood illness guideline

The result showed that the difference observed in the post intervention mean score on knowledge of management of selected childhood conditions in the control and experimental groups could not have happened by chance but due to the educational intervention the participants in experimental group were exposed to. This result is consistent with the findings of Israt showed that mothers exposed to educational information for about six months had an increase in knowledge.[17]

CONCLUSION

This study achieved its initial objectives of assessing the nurse-led educational intervention on management of selected childhood conditions among mothers of under-five in two tertiary hospitals in Bayelsa State, Nigeria. It is therefore concluded that the nurse-led intervention programme improved knowledge and skills in the management of selected childhood conditions among mothers of under-five. Also, that educational interventions to improve management of selected childhood conditions among mothers of under-five is needed at least in the short term. Effects of this intervention on mothers' knowledge, confidence, attitude and skills will be ensured. Therefore, improvements in study quality, consistency of outcome measures and measures of longer-term effects are needed to improve confidence in estimates of the effects of educational interventions to improve mother's understanding and skills.

Recommendations

In view of the findings stated earlier, it has been proven that mothers can gain skills related to the management of selected childhood conditions through simple education associated with practical training. There is an urgent need to pay more attention to creating more awareness in the management of selected childhood conditions in Nigeria. Nurses have lots of work to do as client's advocates.

The following are hereby recommended:

1. Educational intervention regarding management of selected childhood conditions is required during the period of antenatal and postnatal visit.
2. Training of nurses in IMCI strategy to boost their confidence in supervising IMCI protocol implementers or trainer is recommended. This will also make the nurses to be more informed and be able to help mothers of under-five to manage selected childhood conditions well.
3. Motivational counseling for mothers of under-five on self-management selected childhood conditions must be emphasized.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Ebikienmo F, O SC. Nurse led educational intervention on the knowledge of management of selected childhood conditions among mothers of under five in tertiary hospitals in Bayelsa state Int J Res Med Sci 2020;8:3171-6.