

Original Research Article

Outcome of nurses' training on treatment of selected diseases, utilising integrated management of childhood illness module in agege local government, Lagos State

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ABSTRACT

Background: In developing countries, parents seek health care for their sick children daily at available health centers, pharmacies, hospitals and traditional healing centers, but the care received are not always adequate, this invariably result in use of obsolete ideas and regimens in the care of sick children. However, it was observed that some nurses do not treat sick children according to IMCI module hence the objective of the study is to explore the outcome of nurses training in the treatment of selected childhood diseases utilizing IMCI.

Methods: The study utilized one group pre-posttest quasi experimental research design. Total enumeration was used to enroll 150 participants. Two research instruments were used to collect data with reliability index of 0.803 and 0.617. Inferential statistics was used to test the hypotheses at 0.05 level of significance. Data were collected over six weeks in three phases.

Results: Results revealed significant differences between pre and post intervention mean scores of nurses knowledge in the treatment of malaria ($t=22.626$, $p=0.00$); pneumonia ($t=19.760$, $p=0.00$); and diarrhoea ($t=19.608$, $p=0.00$).

Conclusions: The training package used in this study enhanced the knowledge in the treatment of selected childhood illness. It is therefore recommended that there is need to train all nurses working at the primary health centers on the use of integrated management of childhood illness module which will contribute to the reduction of infant morbidity and mortality rate in Agege local government area of Lagos State.

Keywords: Childhood illnesses, IMCI, Intervention, Nurses

INTRODUCTION

In developing countries, parents seek health care for their sick children daily. They seek prompt and adequate care at available health centers, pharmacies, hospitals and traditional healing centers, but the cares received are not always adequate which invariably leads to high mortality of children under age of five. Some decades ago, it was recorded that many countries still record children death rate of 1:10 living children. In total, about 9 million and above children die yearly in underdeveloped nations before celebrating their fifth birthday. Children mortality

was roughly calculated as 7 million yearly, most times due to curable and treatable diseases such as pneumonia, diarrhoea, malaria, measles, malnutrition and HIV. These six diseases account for over 70% of the 11.5 million deaths annually.¹ Also in Nigeria, one of every 5 children die before their fifth year and 70% of such deaths are also due to these six major diseases and other neonatal conditions that are addressed by the IMCI modules.²

With this problem, about 15 years ago, World Health Organization (WHO) and United Nation International Children's Emergency Fund (UNICEF) came up with the

idea of Integrated Management of Childhood Illness (IMCI).³ The strategy was designed to reduce child morbidity and mortality in developing countries, while the module focuses on the causes of death in children through improving case management skills of health workers, especially in primary health centers. These diseases listed above can be prevented from leading to death if early, timely, appropriate, low cost treatment is given to the children by nurses in the community or primary health centers. The organization has made a significant progress in saving children's life's with the use of appropriate antibiotics, anti-malaria or oral rehydration therapy. The rate of child mortality therefore fell to 62 % from 1990-2016, with under five deaths dropping from 12.7 million to 5.6 million.⁴

It was also recorded by Nisar that the estimated annual death rate has decreased by almost a third among children under the age of five years.⁵ This reduction, however, has been as a result of the introduction of the Integrated Management of Childhood Illness (IMCI). These curable and treatable diseases cause most of the deaths and most often these diseases condition may present with a combination of two or more of these conditions.⁶ The module was established to give comprehensive and timely management to the treatable diseases that affect the under-five children. Also, measures for the identification of childhood illnesses in the outpatient/rural setting, and appropriate treatment and referrals are provided. IMCI is a tool that is evidence-based, integrated to deliver high impact child survival intervention. In addition, training with IMCI modules enable health workers understand why sick children always appear with similar and coincidental manifestation. Therefore, IMCI module present symptoms-based modules for assessing, classifying and managing the illness before they get out of control.⁷ With the use of IMCI module in the management of childhood treatment, there is drastic reduction in the childhood morbidity and mortality rate.⁸

The IMCI module involves components that help to upgrade nurses' specialty by recognizing, administering and treating the conditions.⁷ With these, the health workers are able to assess and treat cases by providing guidelines for treating ill children, supportive care and advice to the career.⁹ The sick children are always examined for their immunization, nutritional level and health condition. Furthermore, IMCI management procedures have special medication, which nurses are allowed to prescribe. The use of the module has helped nurses at the primary health center in assessment, classifying and also treating sick children. Training of nurses on the use of IMCI module has helped improve access to the clinic and medical treatment, which has resulted in adequate care of children over the world. The use of integrated module (IMCI) by nurses is paramount and remarkable to reduce the under-five unhealthy state, loss of life rates especially in low economic country like Nigeria.

Maternal and child health survey by Armstrong state that Nigeria losses about 2,300 under five children, and at least 6.3million under five children across the world in the same year 2013.¹⁰ With the high rate of under five children death, the government is making desperate effort on cutting down the rate of under five children death from 90% to 46% death per 1,000 live births in 2013. Also, the millennium development goal (MDG) recommended that child death should be reduced by 30% by 2015, which may not be achieved even by 2020 due to death from preventable illnesses like pneumonia, malaria and diarrhoea.

Also, health records indicate that there is a decline in nurses using IMCI module in the treatment of sick children in the sub-Saharan Africa despite initial support from WHO and UNICEF.¹¹ Therefore, the development of nurses' competencies is important both for timely treatment and quality care given to children for their survival. Some of the poor management practices of childhood illnesses that are still affecting sick children today especially in the primary health centers, include improper management techniques used by nurses, such as poor or missed diagnosis, poor referral system and inappropriate prescription of drugs, inadequate provision of treatment for childhood disease, inadequate or absence of laboratory facilities, inadequate oral rehydration therapy solution, and inadequate counseling of mothers.¹²

Lack of training also leads to work over load on nurses and this limits the time that nurses spend in giving health talks to mothers concerning care of their children at home and prevention of risk factors that may aggravate disease. This may also result in missed opportunity of early detection and improper treatment of other co-existing ailments. Improper or no training on the use of IMCI module of a six-step management flow-chart, prevented nurses in the primary health center to classify the health problems and provide appropriate care and treatment. Therefore, training of nurses on the use of IMCI in the treatment of sick children is important.¹³

The effect of nurses' training in the use of the IMCI module is to strengthen the concept of integrated child health care in health service and total care of the child health by providing the chance for early detection and giving adequate treatment to the sick child.

However, resent evaluation suggests that nurses at the local government, nurses lack training in the use of IMCI module in the treatment of sick children as they still prescribe drugs that are not in the module. Murray therefore, the mortality rate in the local government areas is still high.¹⁴ This situation clearly calls for the training of Nurses on the use of IMCI module in the treatment of three prevalent childhood illnesses and in the present study, the focus will be on Agege local government area of Lagos State Nigeria.

Hypotheses

H01: There is a significant difference in the pre and post intervention means score on treatment of malaria according to IMCI among nurses working in Agege Primary Health Center.

H02: There is a significant difference in the pre and post intervention mean score on treatment of pneumonia according to IMCI among nurses working in Agege primary health Center.

H03: There is a significant difference in the pre and post intervention mean score on treatment of diarrhoea according to IMCI among nurses working in Agege primary health Center.

METHODS

One group pretest-posttest quasi-experimental design was used for this study. This design involves comparing participants before and after implementing an intervention. It also involves the collection of baseline data that allows researchers to be relatively confident inferring that posttest differences occur as a result of the intervention. All nurses working in the 10 primary health centers (PHC) constituted the sample of the study. There are 150 nurses at the Primary Health Centers (PHC) in Agege LGA.

Total enumeration was adopted for the study. All the nurses working in the 10 Primary Health centers constituted the sample of the study. So, the total number of nurses for this study was 150 nurses.

The study made use of two research instruments, namely, self-report questionnaire (SRQ) and Test Paper on treatment of Pneumonia, Malaria and Diarrhoea (TP-PMD). (i) Self-report questionnaire (SRQ) this section of the instrument elicit responses on demographic variables of participants like age, gender, marital status, cadre, years in service and professional qualification. (ii) Test paper on knowledge and treatment of sick children with IMCI booklet in the treatment of malaria, pneumonia and diarrhea, (TP-MPD) consists a total of 24 questions. The instrument has Cronbach’s Alpha coefficient of 0.803.

A letter of introduction was collected from the Dean, School of Nursing, Babcock University and presented to the Apex Nurse in the Health Center headquarter at Agege Local Government secretariat. The researcher had already made an arrangement with the Apex Nurse about the period for data collection, which was every Wednesday, the statutory meeting period for all the nurses in the Primary Health Centers. The training as well as the collection of the data was done on this day for 6 weeks. The consent of the participants was obtained and the structured test paper was used to collect data in person from the participants after 6 weeks of training. The intervention lasted 40 minutes each day.

Ethical approval for this study was obtained from Babcock University Health Research Ethics Committee (BUHREC). A Letter of introduction was presented to Agege local government secretariat, the participants were fully informed about the nature of the study and that their participation was voluntary. The ethical principle of respect for persons, beneficence, non-maleficence and justice was employed. Participants’ anonymity was also ensured. Participants were encouraged to ask questions all questions were answered. The outcome of the research will benefit the participants and primary health care clinics regarding how to adequately care for children thereby reducing children mortality to the barest minimum.

The completed test paper were coded and analyzed using the Statistical Package for Social Science (SPSS) version 25. T test was used to test the hypotheses at 0.05% level of significance.

RESULTS

Table 1: Participants’ demographic data (n=150).

		Frequency	%
Gender	Male	18	11.9
	Female	132	88.1
Age (years)	21-30	22	14.6
	31-40	59	39.1
	41-50	61	40.4
	51-60	8	6.0
Cadre	CNO	17	11.3
	PNO	21	14.0
	SNO	31	20.7
	NOI	26	17.3
	NOII	55	36.7
Professional qualification	RN	11	7.3
	RN/RM	63	42.0
	RN/RM/PH	9	6.0
	RN/PH	9	6.0
	RN/RM/BSC	58	38.7
Years in Service	0-5	13	8.6
	6-10	66	43.7
	16-20	59	39.1
	21-25	8	5.3
	26-30	5	3.3
Uses IMCI Module	No	93	62.0
	Yes	57	38.0

The demographic data of the 150 respondents are presented in Table 1. The respondents' gender revealed that females were 133 (88.1%) while males were 18 (11.9%). The age of the respondents ranged between 21 and 60, with a mean age of 33.9. Majority (36.7%) of the respondents were between the ages of 41 and 50 while the lowest number (3.3%) was recorded between ages 51-60. The study revealed further that 36.7% of the participants were nursing officers II while the least group

were chief nursing officer (11.3%). The professional qualification attained by the majority (42%) was RN/RM while the majority (43.7%) had 6-10 years working experience. 62% of the nurses do not use IMCI while only 38% does. Results in Table 2 indicate a significant difference in the pre and post intervention mean score on treatment of malaria according to IMCI among nurses working in Agege Primary Health Center (mean difference=2.848; t=22.626; p=0.000). Hence, the alternate hypotheses, which stated that there is a significant differences pre and post intervention mean

scores of nurses in the treatment of malaria among nurses was accepted.

Results in Table 3 indicate a significant difference in the pre and post intervention mean score on treatment of pneumonia according to IMCI among nurses working in Agege Primary Health Center (mean difference=2.289; t=19.960; p=0.000).Hence, the alternate hypotheses which stated that there is a significant differences pre and post intervention mean scores of nurses in the treatment of pneumonia among nurses was accepted.

Table 2: Independent t-test to show the difference in the pre and post intervention score on treatment of malaria according to IMCI among nurse.

Group	N	Mean	Std. deviation	Std. error mean	df	t	Mean diff	Sig
PRE	150	3.926	1.433	0.11705	148	22.626	2.848	0.000
POST	150	6.774	0.579	0.04715				

Table 3: Independent t-test to show the difference in the pre and post intervention score on treatment of pneumonia according to IMCI among nurses.

Group	N	Mean	Std. deviation	Std. error mean	df	t	Mean diff	Sig
PRE	150	3.1332	1.31303	1.10495	148	19.760	2.289	0.000
POST	150	5.4225	0.95585	0.07768				

Table 4: Independent t-test to shows the difference in the pre and post intervention score on treatment of diarrhoea according to IMCI among nurses.

Group	N	Mean	Std. deviation	Std. error mean	df	t	Mean diff	Sig
PRE	150	3.0333	1.31290	0.10720	148	19.608	2.589	0.000
POST	150	5.6225	0.95038	0.07734				

Results in Table 4 indicate a significant difference in the pre and post intervention mean score on treatment of diarrhoea according to IMCI among nurses working in Agege Primary Health Center (mean difference=2.589; t=19.608; p=0.000). Hence, the alternate hypotheses, which stated that there is a significant differences pre and post intervention mean scores of nurses in the treatment of diarrhoea among nurses was accepted.

of Ebuehi and Gove that reported an improved outcome of after training, as nurses were able to treat sick child with recommended anti-malaria according to IMCI module.^{8,12}

The outcome of the second hypothesis indicated a significant difference in the pre and post intervention score on treatment of pneumonia according to IMCI among nurses working in Agege Primary Health Center. It could be deduced from this finding that differences observed in the pre and post intervention score on treatment of pneumonia according IMCI among the nurses recorded a significant change, as the mean difference is 2.289, which is as a result of training in this study. Confirmed the findings corroborated with the findings of Chopra.¹⁶ That reports an improved outcome of after training, as nurses were able to treat sick child with recommended antibiotics for pneumonia according to IMCI module. The outcome of the third hypothesis indicated a significant difference in the pre and post

DISCUSSION

Results of the first hypothesis indicated a significant difference in the pre and post intervention score on treatment of malaria utilizing IMCI among nurses. It could be deduced from this finding that the difference in the pre and post intervention score on treatment of malaria according to IMCI among the nurses shows a great change in their score in the pre intervention and post intervention, which is as a result of the educational training intervention. This further confirms the findings

intervention score on treatment of diarrhoea utilizing IMCI among nurses working in Agege Primary Health Center. From the study there is a significant difference between pre and post score. The mean score or pre intervention is 3.033 while post intervention is 5.6225 and the mean gain is 2,589. It could be deduced from these findings that the difference in the pre and post intervention score on treatment of diarrhoea utilizing IMCI among the nurses may be as a result of the educational intervention training. This further confirm with the finding of Armstrong et al.¹⁰ That reports an improved outcome of after training, as nurses were able to treat sick child with recommended treatment for diarrhoea according to the types as recommended by MCI module.

CONCLUSION

This study has shown clearly that a significant difference was observed in the pre and post use of IMCI in the treatment of illness among the nurses. Thus, this study demonstrates that there was an improvement in the knowledge of IMCI module in the management of sick children among nurses after the educational intervention, therefore one can safely conclude that the intervention had improved nurses' knowledge of IMCI and treatment given to sick children.

Recommendations

Regular training with prompt and regular supervision should be done. There should be regular training and retraining of nurses on IMCI module. IMCI chart and booklet should be made available and accessible for the nurses to use. NGOs such as save the children and other concerned bodies should be involved in making these drugs available at affordable price.

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