International Journal of Public Health, Pharmacy and Pharmacology, 8 (5), 1-9, 2023

Print ISSN: (Print) ISSN 2516-0400)

Online ISSN: (Online) ISSN 2516-0419)

Website: https://www.eajournals.org/

Publication of the European Centre for Research Training and Development -UK

Effect of Health Education Intervention Programme on Awareness of Danger Signs in Childhood Illnesses (Under-Five) Among Caregivers in Kaduna State, Nigeria

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doi: https://doi.org/10.37745/ijphpp.15/vol8n519 Published November 5, 2023

Citation: Bello Y., Musa U., Nurudeen A.S., Biu A.A. and Getso A.S. (2023) Effect of Health Education Intervention Programme on Awareness of Danger Signs in Childhood Illnesses (Under-Five) Among Caregivers in Kaduna State, Nigeria, *International Journal of Public Health, Pharmacy and Pharmacology*, 8 (5), 1-9

ABSTRACT*: The study assesses the effect of health education intervention programme on awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna State. Nigeria. To achieve the purpose of the study, five research questions were raised while five hypotheses were formulated and tested to guide the study. Quasi-experimental of pre-test and post-test experimental and control groups was adopted for this study. The population of the study consist of 19,684 of the entire caregivers in Kaduna State. The sample size of this study is two hundred (200) participants selected by using multi-stage sampling techniques. The instrument for data collection for the study is researcher's developed questionnaire. Inferential statistic of paired sample t-test was used to test the formulated hypotheses at 0.05 level of significance. The finding indicated that there is significance awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state, Nigeria after health education intervention programme (t-23.07, df: 99; P=.000); and there is significant difference between the experimental and control group after health education intervention programme based on their awareness of danger signs in childhood illnesses (t=-15.316, df: 198; (P=.000). Based on the findings of the study it was concluded that health education intervention programme improves awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state, Nigeria. This is because the effect of health education intervention programme was significant. It was therefore recommended among others that the Kaduna State Ministry of Health should work with all the healthcare facilities to promote that health education intervention programme on knowledge of danger signs in childhood illnesses and should be carried out during ANC visits*.

KEY WORDS: effect, health education intervention programme, awareness, danger signs, childhood illnesses, and under-five

INTRODUCTION

Large numbers of under-five deaths have occurred from preventable and treatable common childhood illnesses. Therefore, early identification of general danger signs of common childhood illnesses and adhering to appropriate treatment helps to reduce morbidity and mortality. World Health Organisation [WHO] (2021) identifies general danger signs that may call for hospitalization of the child and then bases its assessment on the presence of cough and difficulty breathing, diarrhea, fever, measles, ear infection, and malnutrition (Robinson, 2019). All sick children are screened for all of these conditions because IMCI capitalizes on the presence of the child in the clinic (vaccinations are also given if necessary). The Integrated Management of Newborn and Childhood Illness (IMNCI) to focus on the assessment of general danger signs in the examination of children presenting with illness at health facilities (WHO, 2017).The IMNCI guidelines, general danger signs of under-five childhood illnesses are categorized as: unable to breastfeed, unable to drink or eat, vomiting everything, convulsion and lethargic/unconscious. Sick children with these danger signs need rapid management and after pre-referral treatment urgent referral are mandatory and any delay in treatment exhibits child mortality (Duke, Ezenwa, Roberts & Ekanem, 2020).

Robinson (2019) reported that in health facilities where IMCI is being implemented it is also recommended that general danger signs are used as a way to monitor the condition of children waiting in the queue. This is called rapid appraisal of all waiting children. If there is a child in the queue who is seriously ill this child must be identified as soon as possible for immediate assessment and treatment. The child should then be referred. Any delay in treatment means the child is more likely to die from the illness (WHO, 2017). Caregivers may delay coming to the clinic because of expense or in order to seek care elsewhere, they may often have travelled far and children can become sick and die extremely quickly. In many clinics there are long delays in getting transport to the hospital adding to the time taken for the child to receive hospital care (IMCI, 2020). For all these reasons it is critical that children should not sit at the back of the queue where they may be wrapped in blankets and easily not noticed. This is particularly likely if the clinic is very crowded or if does not want to fuss or does not realize how ill her child might be because, a child that appears to be sleeping may actually be unconscious (Robinson, 2019).

According to United State Agency and International Development (2018), practitioners of IMCI use general risk indications to identify children who require an immediate hospital referral. Whenever a child is assessed at IMCI, we initially inquire about any general risk signals. When a child is unable to drink or nurse, throws up everything they can, has convulsions while sick, or appears lethargic or unconscious, there is a general risk indication present. A child who is unable to drink or is throwing up everything will not be able to take any medications or stay hydrated cannot be treated at home, regardless of the underlying issue, and he probably won't last long. A sick child who is convulsing and is lethargic or unresponsive is likely suffering from meningitis. These overarching warning flags may go unnoticed if you don't specifically inquire about them.

Mothers may neglect to note that their child has experienced convulsions, for example, and a health professional may believe that a youngster who is lethargic or unconscious is simply napping (WHO, 2020).

United Nations Children's Fund [UNICEF] (2016); World Health Organization, [WHO] (2017), World Bank and United Nations [UN] (2018) reported that globally, a large number of under-five deaths occurred from preventable and treatable diseases, such as: acute respiratory infections (ARI, 7%),diarrheal diseases (12%) and febrile illnesses(14%). Prompt diagnosis and appropriate management of the general danger signs of common childhood illnesses is mandatory for reducing morbidity and mortality. Reduction in the mortality rate of under-five children is improved from 1.8% by the year of1990-2000 to 3.9% from 2000-2015 worldwide (Awasthi, Verma & Agarwal, 2018). Global community permitted Sustainable Development Goal (SDG) at the termination of Millenium Development Goal to reduce avoidable deaths of under-five children (Anwar-ul-Haq, Kumar & Durrani, 2019).

In regards to the awareness of danger signs in childhood illnesses, Ukwaja, Talabi and Olufemi (2020) who conducted a study on health education intervention on pre-hospital care seeking behaviour for childhood acute respiratory infections in south-western Nigeria and reported that a total of 226 mothers were interviewed after hospital care seeking. 55% of the mothers were aware of the two pneumonia symptoms: difficult breathing and fast breathing. Another study was conducted by Shally, Tuhina, and Agarwal (2018) on health education intervention programme on dangersigns of neonatal illnesses: perceptions of caregivers and health workers in northern India and reported that maternal awareness has positive impact on their health seeking behaviour and also for their child health in the many countries. However, health education for mothers has played a pivotal role in prevention of illnesses among the children.

Idris, Yusuf and Aminu (2021) carried out a study on effect of health education on caregivers' awareness, attitude and practice of home management of danger signs in under-fives in Toro LGA, Bauchi State and reported that majority of the respondents (94.2%) in both intervention and control groups respectively had poor level of practice of appropriate home management of danger signs in under-fives at baseline. There was also a statistically significant increase in the proportion of respondents with a better level of practice in the intervention group by 30.9% from baseline. Similar study was carried out by Audu, Salama and Sadiq (2020) on effectiveness of health education programme on the level of awareness, attitude and practice of caregivers regarding danger signs in under-five children in Upper Egypt. The study revealed that the implementation of an education programme had a positive effect on increasing Caregiver's awareness and practice about management of danger signs in under-five in the intervention group.

The researcher observed that be course of the lack of awareness and management of childhood illness such fever, pneumonia, meningitis, neonatal tetanus and diarrhoea many of under-five children's deaths in kaduna State occur at home. It was further observed that majority of the

children's deaths in kaduna State are related to late recognition of the signs of a serious illness by parents and a delay in the decision to seek medical care. The primary causes of under-five children death are sepsis (which includes pneumonia, meningitis, neonatal tetanus and diarrhoea), birth asphyxia and prematurity due lack of specificity of the clinical manifestations of various under-five child's morbidities has been noted, resulting in difficulty in making a definitive diagnosis, delay in seeking care and resultant high mortality. Since the health-seeking behavior of mothers for under-five children care depends on the mothers' awareness about WHO recognized danger signs (Kaduna State primary health care agency, 2022).

This in line with the report of Robinson (2019) that each year, at least 4 million African children die before they reach their fifth birthday and 70% of the deaths are caused by pneumonia, diarrhea, malaria, measles, malnutrition or more commonly, a combination of these. Despite the fact that sick children often have more than one condition, busy clinics tend to treat only the one that is most obvious. Pneumonia is the single largest infectious cause of death in children worldwide. Major causes of death among children vary by age. Children under 5 are especially vulnerable to infectious diseases like malaria, pneumonia, diarrhoria, HIV and tuberculosis. For older children, non-communicable diseases, injuries and conflict pose significant threats. Despite being entirely preventable and treatable, common infectious diseases are still killing young children in large numbers. Pneumonia, diarrhoea and malaria were responsible for approximately 29 per cent of global deaths among children under the age of 5 in 2018. Children in the world's poorest regions are disproportionately affected, with infectious diseases particularly prevalent in sub-Saharan Africa (WHO, 2020). It is against this problems that the researcher investigates the effect of health education intervention programme on awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state, Nigeria. This study is expected to answer the following questions by testing the formulated null-hypothesis; What is the awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state, Nigeria before and after health education intervention programme?; and what is the different between experimental and control groups on awareness danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state after exposure to health education intervention programme?

Hypotheses

H_{O1} There is no significance awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state, Nigeria before and after health education intervention programme

H_{O2} There is no significance between experimental and control groups on awareness and management of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state after exposure to health education intervention programme

METHODOLOGY

The research design for this study is quasi-experimental of pre and post-test experimental and control groups design. Therefore, quasi-experimental design aims to establish a cause-and-effect relationship between an independent and dependent variable and useful tool in situations where true experiments cannot be used for ethical or practical reasons. The treatment groups was exposed to health education intervention programme while the control group was not exposed to any treatment but was given placebo on family planning to engage them.

The population for this study consist of nineteen thousand, six hundred, and eighty-four (19,684) of the entire caregivers in Kaduna State (WHO, 2020). Moreover, WHO (2020) estimates that the population of under-five makes up 4% of the overall population, hence this should be utilized as there are no particular data for caregivers. Hence, 19,684 people, or 4% of the entire population of 492,100, make up that percentage.

The sample size of this study is two hundred (200) selected by multi-stage sampling techniques consisted of clustered to select 23 LGAs; purposive sampling technique was used to select Igabi which is the largest LGA in the study area for the purpose of experimental study; and The convenience sampling technique was used to select two (200) respondents as sample respondents who were conveniently participating in the study from two selected wards in igabi LGA, Kaduna state.
The instrument for data collection in this study is researcher's developed questionnaire named Awareness of Danger Signs in Childhood Illnesses Questionnaire (ADSCIQ). The questionnaire was made up of three sections (A-B); section "A" is on demographic characteristics of the respondents which consist of three (3) items: there are eight (8) Items in section "B" which seek information on awareness of danger signs in childhood illnesses. A modified Likert scale response mode will be used to collect the data for the study, the scores are as follows: Strongly Agree=4 points; Agree=3 points; Disagree=2 points; Strongly Disagree 1 point.

An introductory letter was submitted to the Ward head of Igabi LGA to seek for their permission to conduct the study. Two hundred (200) copies of the questionnaire were administered to both experimental and control group. That is 100 copies for the experiment group and 100 copies for the control group with the help of four (4) research assistants which were fully briefed on how to administer and collect the questionnaire from the respondents.

The administration of the research instrument was done in three phases to the participants by the help of four (4) researcher assistants. The phases were as follows:

Phase 1: Pre-intervention: The researcher with the help of four (4) research assistants administered 100 copies of the research instruments for both the experimental and control group that is 50 copies

for the experiment group and 50 copies for control group as pre-test a week before the treatment session; Phase 2: Intervention: This phase was an implementation of the intervention and delivery of the treatment package to participants. The treatment will last for six weeks. Health education sessions were carried out every Tuesday between the hours of 2pm-3:20pm in the ward health facility. Control Group: The participants in this group were not exposed to any intervention but were given placebo on Nutrition. The control group was engaged every Thursdays between the hours of 2-3:20pm within the ward health facility.

Phase 3: Post-Test: The health education progrmme is to educate the caregivers to be aware of the dander sign in childhood illnesses and management control of danger sign in childhood illnesses (Under-Five Children); and Post-Test Intervention Procedure: This is the post administered of the instrument and termination of the six weeks intervention. Therefore, the intervention which lasted for six weeks ware terminated and re-administered of research instrument on Awareness of Management of Danger Sign Questionnaire (AMDSQ) was done to the same experiment and control group as post-test.

RESULTS

An inferential statistics of a paired sample t-test was used to test the hypotheses at a 0.05 alpha level of significant. Two hundred (200) copies of questionnaire distributed before and after nutrition education intervention programme were filled accordingly and returned for data analysis

Hypotheses 1: There is no significance awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state, Nigeria before and after health education intervention programme.

Table 1: Summary of paired sample t-test on awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state, Nigeria before and after health education intervention programme

Variable	Test	Mean	N	SD	t	df	P
Health Education Programme	Before	16.94	100	2.526	-23.07	99	.000
on nutritional awareness	After	27.58	100	4.766			

t_{ab}=1.99, df: 49; P<0.05

The result on table 1 indicated that the mean scores (27.58) of the respondents on awareness of danger signs in childhood illnesses (Under-Five Children) after exposure to health education intervention programme is greater than the mean scores (16.94) of respondents before exposure to health education intervention programme, This showed that there is significance awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state, Nigeria before and after health education intervention programme (t-23.07, df: 99; P=.000).Therefore, the hypothesis tested is rejected.

Hypotheses 2: There is no significance between experimental and control groups on awareness and management of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state after exposure to health education intervention programme.

Table 2: Summary of independent t-test difference between experimental and control groups after exposure to health education intervention programme

Groups	N	Mean	SD	SE	df	T	P
Control	100	17.31	3.253	0.325	198	-15.316	.000
Experimental	100	26.22	23.09	0.482			
Total	**200**						

t_{tab}=1.97, df: 98; P<0.05

The table 2 shown that the mean scores (17.31) of the control group is less than the mean scores (26.22) of experimental group. This means that control group has relatively lower awareness of danger signs in childhood illnesses (Under-Five Children) than experimental group. The independent t-test indicated that there is significant difference between the experimental and control group (t=-15.316, df: 198; P=.000). Therefore, the hypothesis tested is rejected. This means that the control group is significantly differ from experimental group after exposure to nutrition education programme.

DISCUSSIONS

The purpose of this study was to assess the effect of health education intervention programme on awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna State. Nigeria. The outcome of this study revealed that there was significance awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state, Nigeria after health education intervention programme (t-23.07, df: 99; P=.000). This is in line with the Ukwaja, Talabi and Olufemi (2020) who conducted a study on health education intervention on pre-hospital care seeking behaviour for childhood acute respiratory infections in south-western Nigeria and reported that a total of 226 mothers were interviewed after hospital care seeking. 55% of the mothers were aware of the two pneumonia symptoms: difficult breathing and fast breathing. Another study conducted by Shally, Tuhina, and Agarwal (2018) on health education intervention programme on dangersigns of neonatal illnesses: perceptions of caregivers and health workers in northern India and reported that maternal awareness has positive impact on their health seeking behaviour and also for their child health in the many countries. However, health education for mothers has played a pivotal role in prevention of illnesses among the children.

The finding of the study further indicated that there was significant difference between experimental and control groups on awareness and management of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state after exposure to health

education intervention programme (t=-15.316, df: 198; P=.000). This is consistence with the study conducted by Idris, Yusuf and Aminu (2021) on effect of health education on caregivers' awareness, attitude and practice of home management of danger signs in under-fives in Toro LGA, Bauchi State and reported that majority of the respondents (94.2%) in both intervention and control groups respectively had poor level of practice of appropriate home management of danger signs in under-fives at baseline. There was also a statistically significant increase in the proportion of respondents with a better level of practice in the intervention group by 30.9% from baseline. Similar study was carried out by Audu, Salama and Sadiq (2020) on effectiveness of health education programme on the level of awareness, attitude and practice of caregivers regarding danger signs in under-five children in Upper Egypt. The study revealed that the implementation of an education programme had a positive effect on increasing Caregiver's awareness and practice about management of danger signs in under-five in the intervention group.

CONCLUSION

Based on the findings of this study, it was concluded that Health education intervention programme improves awareness of danger signs in childhood illnesses (Under-Five Children) among caregivers in Kaduna state, Nigeria, because the effect of health education intervention programme was significant.

Recommendation

Based on the conclusions of this study, it was recommended that Kaduna State Ministry of Health should work with all the healthcare facilities to promote that health education intervention programme on knowledge of danger signs in childhood illnesses and should be carried out during ANC visits.

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