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Impact of a Health Education Program on Improving Barakat Basic School Children's Knowledge about Malaria Prevention and Management , South Gezira

Locality, Gezira State, Sudan

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ABSTRACT

Background Malaria is an ancient scourge of humanity. Almost half the world's population lives in countries where the disease is endemic. Children are the worst affected by this disease. It may cause as many as 10% of all deaths in children.

Material and Methods The study goal was done to evaluate Impact of a Health Education Program on Improving Barakat Basic School Children's Knowledge about Malaria Prevention and Management , South GeziraLocality, Gezira State, Sudan during the period from January to February 2014. The samples consisted of the available 100 pupils (54 girls and 46boys). The data were collected by an interview questionnaire was designed for the purpose of the study. The data was analyzed using Statistical Package for Social Science (SPSS).

Results: The results obtained that of the children's knowledge were improved that about the main cause of malaria, mode of transmission, sign and symptoms, complications and prevention (64%, 62%, 86%, 53% and 87%) respectively before the program to be (84%, 92%, 97%, 93% and 94%)respectively after the program post program. Also the results showed that there was statistical significant difference regarding childrens' knowledge about factors that lead to spread of malaria in Sudan pre and post education program (P.V. 0.023).

Conclusion: The study concluded that the childrens' knowledge was improved about malaria prevention and managem post education program. The study recommended periodic health education program about malaria for children's at al age group and available booklets about malaria for each children.

Introduction

Background:

Malaria is an ancient scourge of humanity. Although almost eradicated from industrialized nations, malaria continues to extract a heavy toll of life and health in a substantial part of the world. Almost half the world's population lives in countries where the disease is endemic, and almost every country in the world encounters imported malaria. Children are the worst affected, especially children aged 6 months to 5 years. In parts of the world where malaria is endemic, it may cause as many as 10% of all deaths in children. In the 1950s, the World Health Organization launched an ambitious plan to control or eradicate malaria. After initial successes, the plan

foundered; malaria is now returning to areas where it was once controlled, and it is entering new areas. Because of plasmodial and mosquito resistance to drugs and insecticides, the danger of malaria has worsened, and the disease is now a major global problem. (Parang N, *et* al, 2012).

Problem statement:

In 2010, an estimated 655,000 people died of malaria –world wide most were young children in sub-Saharan Africa. Within the last decade, increasing numbers of partners and resources have rapidly increased malaria control efforts. This scale-up of interventions has led to decreased morbidity and mortality in a number of countries, and there are hopes that ultimately malaria can be eradicated. Center for Disease Control and Prevention (CDC) brings its technical expertise to support these efforts with its collaborative work in many malaria-endemic countries and regions. (United Nations Development Program UNDP, 2012).

Malaria occurs mostly in poor tropical and subtropical areas of the world. In many of the countries affected by malaria, it is a leading cause of illness and death. In areas with high transmission, the most vulnerable groups are young children, who have not developed immunity to malaria yet, and pregnant women, whose immunity has been decreased by pregnancy. The costs of malaria – to individuals, families, communities, nations – are enormous. (UNDP, 2012).

Justification and Rational

Assessment is needed to identify the problem and lack of knowledge especially in children. Educate children about malaria (causes and prevention) and therefore the study. There is no previous study in this area in nursing.

1 .4 Objectives:

1.4.1 General Objective:

- Study the impact of health education program on Improving school age children's knowledge about malaria prevention and management in Barakat primary school during the period of the study from January to February 2014**.**

1.4.2 Specific Objectives:

- To assess the school age children's knowledge regarding the malaria and prevention resources.
- To implement the health education program for the children on malaria to increase their wariness.
- To evaluate the effectiveness of impact health education program on improving the children knowledge about malaria.

3. Materials and Methods

3.1 Study design:

An interventional research study was conducted to evaluate the impact of health education program on improving school age children's' knowledge about malaria prevention and management in Barakat Alnamozagia Basic Schools at Gezira state – Sudan during the period of the study (January to February 2013).

3.2 Study area:

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The study was conducted in Barakat Alnamozagia Basic Schools Girls and Boys one for the others schools in Wad Madani at Gezira state, Sudan during the period of the study from January to February 2013. The school located in the south of the Gezira a way from Wad Madani 8 kilometers and the largest agricultural center in Sudan. The school was established in 1964, were each school contains eight class room and group of teachers.

Table (3.1): Number of teacher in Barakat School for girls and boys:

Staff	(No.) Girls School	(No.) Boys School
Headmaster	1	1
Teachers	33	29
Total	**34**	**30**

Source: Headmaster of Barakat School (Girls and Boys, 2013)

3 .3 Study populations:

The pupils in the level eight in both schools (Girls and Boys) during the period of study from January to February 2013.

3.3.1 Inclusion criteria:

The pupils available in the level eight in both schools during the academic year 2012-2013.

3.3.2 Exclusion criteria:

Other pupils in the school from first to the seventh level from both schools during the academic year 2012-2013.

3.4 Sample size:

The samples consisted of 100 pupils {(54) girls and (46)boys} who represented pupils in the level in both schools during the period study (The academic year 2012-2013).

3. 5 sampling technique

3.5.1 Pre-interventional phase:

- Permission from headmaster of Barakat schools for girls and boys for data collection through official letters.
- A designed questionnaire was done to that the level of improving knowledge for the pupils before and post the education program (Appendix I).
- Pilot study on ten subjects from both sex to check the validity and reliability of the tool used and modification were done.
- Orientation to the selected pupils was done about the importance of the study. And how to complete the questionnaire pre and post test.

- The researcher distributed the program check it handout regarding to each pupils selected (Appendix II).

3.5.2 Interventional phase: (Implementation phase):

- The health education program was done for the available selected pupils by the researcher in 2 days; for 54 girls in the first day (group 1) and for 48 boys in the second day (group2) and the program was done through the school day (9Am – 11Am).
- The interview questionnaire distributed to each pupils to be completed by them, within 30 minutes under the guidance of the researcher (pre-test).
- The reasearcher used audiovisual material to conduct the selected program (mass media for presentation of the program). (Appendix III).

3.5.3 Post interventional phase:

The reasearcher destributed the questionnaire post educational program for the pupils to assess their accquasition knowledge and the pupils completed it within 30 minutes under guidence of the reasearcher.

3.6 Data collection tool:

An interview questionnaire was designed by the researcher, it contained data about socio-demographic characteristic of the students, and their knowledge about malaria prevention and management.

3.7 Data analysis:

For the purposes of this study the data were coded, processed and transferred to computer coding. The comparative analysis was adopted which included percentage, frequency distribution, Table and Figures software program: Statistical Package for Social Science (SPSS) was applied to determine the relationship between the independent variable and dependent variable.

4. Results and Discussion

4.1 Results:

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Table (4.1) Distribution of the study sample according to their age groups and gender:

No (100)

Age	No	%
Less than 14 years	42	42.0
14-16 years	48	48.0
More than 17	10	10.0
Total	**100**	**100.0**
Gender		
Male	46	46.0
Female	54	54.0
Total	**100**	**100.0**

The majority of pupils had aged ranging from 14 to 16 years with percentage (48%), regarding gender 46% were males and (54%) were females.

No(100)

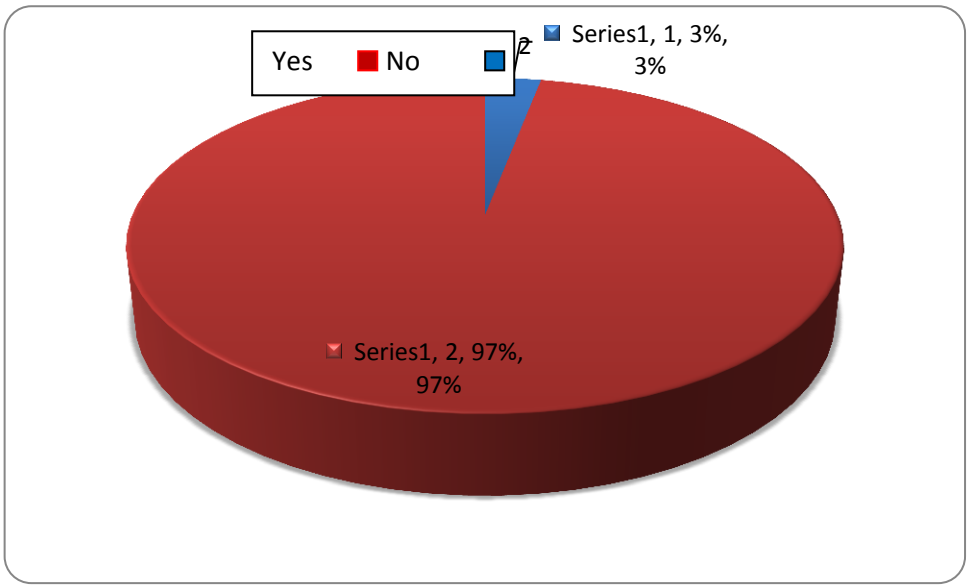

Figure (4.1) Previous malaria attack

This figure showed that almost (97%) of the study sample were complained of malaria.

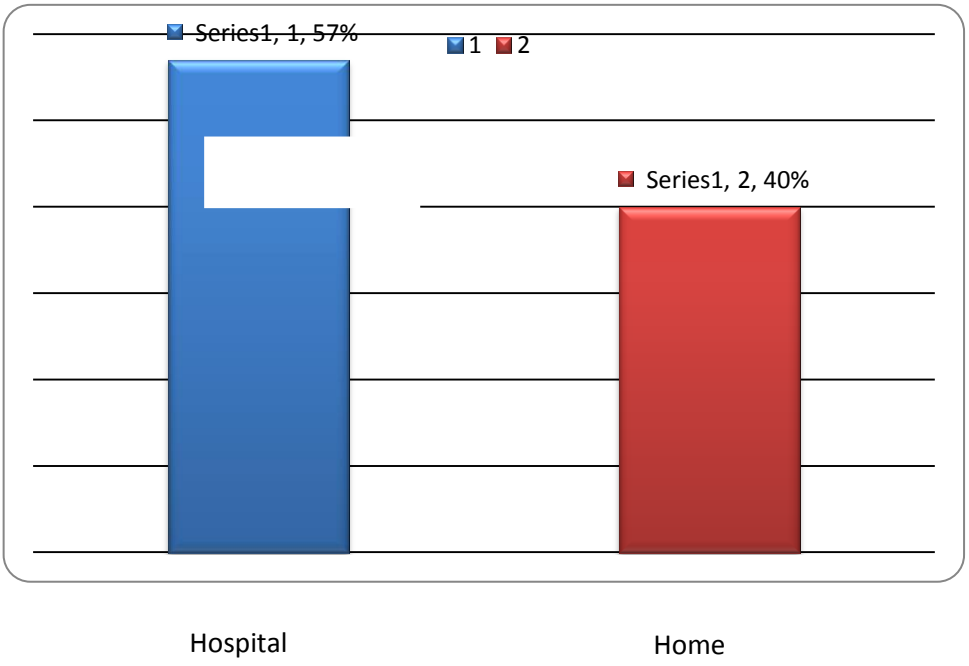

Figure (4.2) : Treated of malaria at home or hospital

The results showed that more than half (57%) of the study sample received treatment in the hospital, while (40%) in their home.

N0 (97)

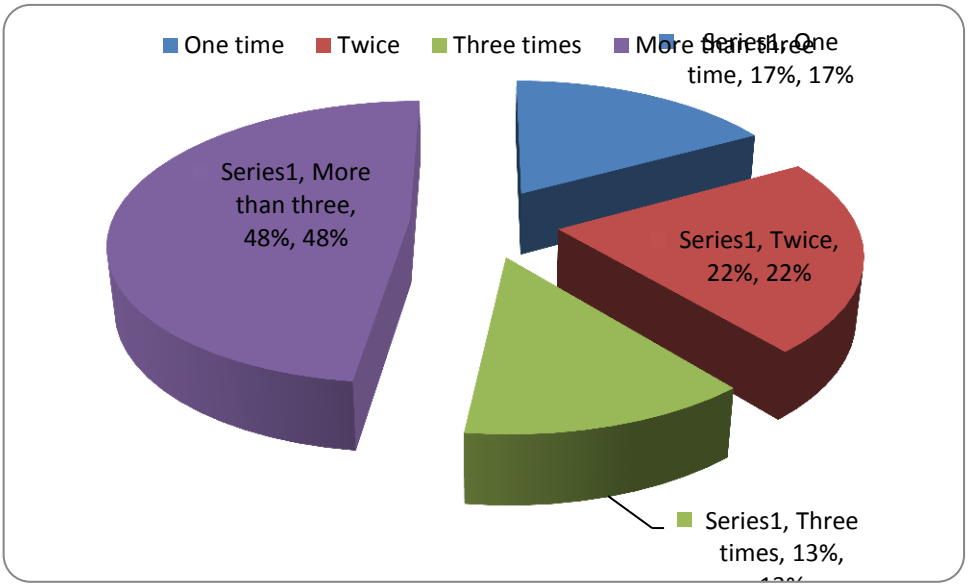

Figure (4.3) : Number of malaria attack for pupils in their life

This figure showed that (48%) of the study sample get sick with malaria more than three times in their life.

No(100)

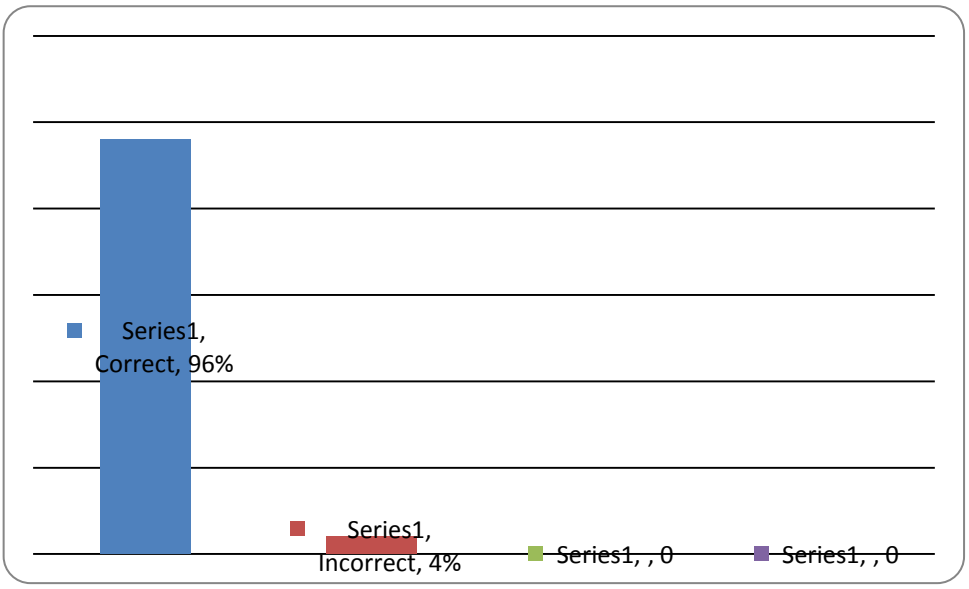

Figure (4.5) : Methods of Investigations of malaria

The figure showed that (96%) of study sample knowledge about diagnosis malaria.

4.2 Discussion:

Malaria is an ancient scourge of humanity. Although almost eradicated from industrialized nations, malaria continues to extract a heavy toll of life and health in a substantial part of the world. Almost half the world's population lives in countries where the disease is endemic, and almost every country in the world encounters imported malaria. Children are the worst affected, especially children aged 6 months to 5 years. In parts of the world where malaria is endemic, it may cause as many as 10% of all deaths in children. In the 1950s, the World Health Organization launched an ambitious plan to control or eradicate malaria. After initial successes, the plan foundered; malaria is now returning to areas where it was once controlled, and it is entering new areas. Because of plasmodium and mosquito resistance to drugs and insecticides, the danger of malaria has worsened, and the disease is now a major global problem. (Parang N, *et* al, 2012).

An interventional research study was conducted to evaluate the impact of health education program on improving school age children's knowledge about malaria prevention and in Barakat Alnamozagia Basic Schools at Gezira state – Sudan during the period of the study (January to February 2013).

The samples consisted of 100 pupils {(54) girls and (46)boys} who represented pupils in the level in both schools during the period study.

The results reveled that the majority of pupils had their age ranging from 14 to 16 years with percentage (48%), regarding to gender (46%) males and (54%) females. Also revealed that (81%) of the study samples had received an information about malaria pre and (100%) post program. This study revealed that (30%) of the study samples their resource of knowledge is health education per. And (49%) health education post.

The results showed that (97%) of the study samples were sick with malaria while just (3%) do not attack malaria before this results similar to study done by (Abdullah Al-Taiar *et al*, 2006) who stated that of 12301 padiatric admissions, (17%) were for suspected severe malaria. The proportion of such admissions varied according to the season (from 1% to 40%). Falciparum malaria was conformed in 1332 children; 808 had severe disease as defined by the World Health Organization. Main presentation were respiratory distress (40%), severe anemia (37%), and cerebral malaria (8%). Twenty two of 26 children who died had a neurological presentation. No deaths occurred in children with sever anemia but, no other signs of severity. In multivariate analysis, a Blantyre coma score ≤ 2, history of fits, female sex, and hyperlactataemia predicted mortality; sever anemia, respiratory stress, and hyperparasitanemia were not significant predictors of mortality.

Also The results showed that more than half (75%) of the study sample received treatment in Barakat Health Center while (40%) in their home.

This results reviled that (48%) of the study sample get sick with malaria three time and also showed that (87%) of the study sample their answer yes while (10%) this result showed that of study sample their knowledge about the main cause of malaria were (64%) pre and improved to (84%) post. Table (4.8) reviled that the study samples knowledge about malaria is infectious disease and chronic

disease after health education program were (56%) and (36%) pre and improved to (95%) and (96%) respectively. This result similar to study done by (Nayyar GML, *el al* 2012) who stated that malaria is a mosquito-borne infectious disease of human and other animals causes by protists (a type of microorganism of the genus plasmodium. It begins with a bite from an infected female anopheles mosquito, which introduce the protists through saliva into the circulatory system. In the blood, protists travel to the liver to mature and produce (Nayyar GML, *el al* 2012).

Table (4.7) revealed that most of children acquired knowledge about the type causative plasmodium of malaria and contagious phase of malaria before and after heath education program were (41%) and (1%) respectively pre and improved to be (94%) and (71%) respectively pre and improved to (97%), (93%) and (94%) respectively. This was similar to study done by (WHO and UNICEF, 2000). Wide spread drugs resistance against commonly used anti malaria drugs such as chloroquine and pyrimethamine/ sulfadoxine (Fansidar) has been reported all over the world. Epidemics are increasing in high land areas were malaria was uncommon, partly due to climatic changes including high rainfall patterns. New development projects such as dams and cultural irrigation work and creating environmental changes more conducive to mosquito breeding and malaria transmission. Economic activities in frontier areas have partially contributed to increase malaria risk in South East Asia, the area of the world with the most sever resistance to malaria drugs. Refugees and people who are internationally displaced as a result of civil work and natural disasters are particularly vulnerable to epidemic of malaria. Afghanistan recorded over 300.000 cases in year as a result of interruption of malaria control activities and the displacement of population due to or. In Sierraleone, were heath facilities had been destroyed and health staff displaced because of the war .almost half the patients seen at referral hospitals are suffering from malaria. (Nayyar GML, *el al* 2012).

The figure showed that (96%) of study sample knowledge about diagnosis malaria. This result similar to study done by (Ofentse Jacob Pooe,2011). Stated that malaria still persists as a major public health scourge, claiming a global tool of up to 500 million clinical cases mostly on Africa children. Current effective malaria diagnostic methods necessitate blood with drawal from patients accurate p. falciparum identification. Risks introduced by blood with drawal can causes communities to be less cooperative to donate blood during malaria surveillance studies. Previous studies that saliva could be used to detect malaria by molecular techniques. This study, therefore sought to establish the constituent of human saliva that harbours parasite DNA in malaria infected subject. Furthermore the study optimized the use of Saliva as an alternative malaria DNA source in malaria infected patients. A total of 88 subjects were enrolled in the study, 35 (40.7%) were males and 51 (59.3%) were females. The age range was from 3 months to 99 years old (mean = 29.6 years; median 18 years). Blood was drawn from each subject for subsequent use in microscopic examination and PCR tests. Saliva samples were also collected PCR on Saliva derived parasite DNA. DNA was extracted using commercial kit on different saliva fraction from 46 malaria positive (thick film positive &

blood PCR positive) individuals and 45 malaria negative individuals. Nested PCR was used to amplify malaria the Plasmodium falciparum dihydrofolate reductase (pfdhfr) gene. Generally PCR conducted on DNA purified from both blood and saliva was more sensitivity than conventional microscopy, as a previously reported. The pellet fraction of saliva was a more reliable and sensitive source of amplifiable parasite DNA compared to the soluble saliva fraction. After PCR optimization amplification was enhanced 94.1% (sensitivity) (Ofentse Jacob Pooe,2011).

The results showed that 90% of the study samples go to scam malaria when are feel symptoms pre and 98% post. Table (4.9) showed that the study sample knowledge about causes lead to the spread of malaria before and after heath education program were (70%) pre and improved to (93%). This result was differ to study done be (Niringiye A. and Douglason. O.G. 2010). Stated that an understanding of the factors that are associate with malaria prevalence. Regression results using OLS indicate no relationship between malaria prevalence and environmental and socio-economic variables. There is need further study using disaggregated data, panel data and adding more control variables to the production model to identify factors that are associated with malaria prevalence in Uganda (Niringiye A. and Douglason. O.G. 2010).

5. Conclusion and recommendations

5.1 Conclusion:

Based on the results of this study: The researcher concluded that most of pupils were become more knowledgeable about malaria prevention and management after the health education program.

5.2 Recommendation

The researcher recommended the following:

- Routine and periodic health education program must be done to all schools to improve the pupils knowledge about malaria prevention and management organized by M. of H and schools.
- Raise families awareness about how to fight endemic disease through various media. (T.V, radio, ….etc).
- A designed booklets about malaria prevention and management to be evaluate to each child in the school to increase their awareness.

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