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Research Article

Knowledge Regarding Preventive Measures of Malaria among Parents of Selected Rural Area of Mangalore with a View to Distribute a Health Education Pamphlet

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Abstract

Aim: A descriptive study was conducted to assess the knowledge of parents regarding preventive measures of malaria, in Mangalore. The parents need to be aware of the preventive measures to be protected themselves from the consequences of malaria.

Research Methodology: The population of the present study was selected by simple random sampling method. Non-experimental descriptive research design was used to accomplish the study objectives and to describe the knowledge of parents regarding prevention of malaria. Structured knowledge questionnaire was used to assess the knowledge of parents regarding preventive measures of malaria.

Results: The results showed that 46.67% had average knowledge, 53.33% had good knowledge, and none had poor knowledge. The overall findings of the present study revealed that the mean knowledge score was 18.96 ± 4.532. Chi-square test was used to analyze the association of knowledge of the prevention of malaria with demographic variables shows that there was no significant association between knowledge of parents and the demographic characteristics.

Conclusion: There is a need to intensify efforts to provide health education on malaria and preventive measures as well as to encourage preventive practices among parents. The finding of the present study reveals that there is no significant association between the level of knowledge and demographic variables. Malaria is a very severe disease which is a great public health concern. Parents need to be aware of the various preventive aspects to prevent themselves and the community from malaria.

Keywords: Knowledge, malaria, preventive measures, vaccination

Introduction

Malaria continues to be a serious public health problem in Sub-Saharan Africa and affects the health and wealth of nations and individuals alike. Children aged <5 years and pregnant women are the people most vulnerable to dying of malaria or suffering serious consequences of the disease, especially in regions where transmission is intense. Children are most vulnerable because they have not yet acquired immunity to the disease, while maternal susceptibility to malaria infection during pregnancy may be related to the physiological immunosuppressant that occurs during gestation. In children under five, the adverse effects include convulsions, anemia, coma, and death. In Ghana, preventing malaria is of prime importance in reducing the rates of morbidity and mortality. Malaria is actually responsible for about 31% of consultations, 44% of hospitalizations, and 18% of deaths occurring in health facilities in the country. In children <5 years, 41% of deaths are due to malaria. If malaria is appropriately prevented, the individual, family, and the state will save lots of resources that will improve the standards of living of the general population.[1]

Vaccination against malaria is the burning issue today. A number of vaccines of potential value in controlling malaria

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are currently underdevelopment. Asexual blood stage vaccines are based on the antigens derived from the blood stages of *Plasmodium falciparum* present in man. These vaccines are designed to reduce or eliminate transmission of the disease. Malaria affects an estimated 300 million people in the world annually. It is claimed that in Africa, one-fourth of all the adults suffer from malarial fever at 1 time or other. Malaria has been a problem in India from centuries. Details of this disease can be even found in the ancient Indian medical literature like Charka Samhita. The estimated economic loss due to malaria in India from 2000 to 2003 is 606.82 million to 750.82 million. India has spent up to 25% of its health budget on malaria control from 2001 to 2010.[2]

Malaria is a protozoal disease caused by infection with parasites of the genus plasmodium and transmitted to man by certain species of infected female anopheles mosquito. A typical attack comprises three distinct stages: Cold stage, hot stage, and sweating stage. The clinical features of malaria vary from mild to severe and complicated, according to the species of parasite present, the patient's state of immunity, the intensity of the infection, and also the presence of contaminant conditions such as malnutrition and other diseases. The febrile paroxysms occur with the definite intermittent periodicity repeating every 3rd or 4th days depending on the species of the parasite involved.[3]

Malaria is a widespread disease in the tropical and subtropical regions including parts of America, Asia, and Africa. Each year, there are approximately 350–500 million cases of malaria, killing between 1 and 3 million people, and majority of who are young children in the Sub-Saharan Africa. The long life span and the strong human biting habit of the African vector species is the main reason for 90% of malaria related deaths in African countries. During 2005, about 1.81 million cases were reported with 963 deaths. The latest study in 2011 shows dramatic decline in the malaria incidence at about 0.27 million cases were reported with 130 deaths. The major endemic areas in India are in the Northern states, Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Rajasthan, and Orissa.[4]

Malaria is a mosquito-borne disease of public health importance which is very complex and their occurrence depends on the interaction of various factors such as biological, ecological, social, and economic factors, though we take several measures for their prevention and control is followed, yet the problem density is very high. There are over 300–500 million cases and 1.1–2.7 million deaths due to malaria alone globally per year. There are various methods of mosquito control, but the various experts nowadays recommend an "integrated approach" that is to avoid the excessive use of any one method, but try to combine one or more methods, with a view to obtain the maximum results, and also to prevent the environmental pollution. India is one of the main affected countries with malaria and millions of people die every year.[5]

Objectives

The objectives of the study were as follows:

- To assess the knowledge of parents of selected rural areas regarding preventive measures of malaria
- To find the association between knowledge and selected demographic variables such as age, gender, education, occupation, type of family, and history of malaria within the family.

Research Methodology

Research approach

A descriptive survey approach was used in the present study to describe the knowledge of the parents on prevention of malaria.

Research design

Non-experimental descriptive research design was used to accomplish the study objectives and to describe the knowledge of parents regarding prevention of malaria.

Setting

The study was conducted in the rural areas at Mangalore under Bondel PHC.

Population

In the present study, the population consists of all the parents in the selected rural areas Mangalore. Thirty parents were selected in the present study.

Sampling technique

Non-probability sampling technique was used.

Description of the tool

The structured questionnaire was prepared and it consists of three parts with a total of 28 items.

Part 1: This included demographic characteristics such as age, gender, educational status, occupation, source of information, and type of family.

Part 2: It consists of 28 questions divided into three sections.

Section 1: This section included eight questions related to knowledge of the concept of malaria, incidence, and etiology.

Section 2: This section included eight questions related to knowledge of clinical features, diagnosis, complications, and treatment of malaria.

Section 3: It consisted of 12 questions related to knowledge of prevention and control of malaria.

Results

Description of demographic characteristics of the parents

Table 1 reveals that the majority (53.33) of the parents were female. Most (40%) of the participants were in the age group of 31–40 years. Most 46.67% had completed high school. About 53.33% belonged to the nuclear family. About 63.33% had no history of malaria in the family. Most 46.67% got information regarding malaria through mass media.

Table 1: Description of demographic characteristics of the parents

Demographic variables	Frequency	Percentage
Gender		
Male	14	46.67
Female	16	53.33
Age (years)		
21–30	9	30
31–40	12	40
41–50	6	20
Above 50	3	10
Education		
High school	14	46.67
PUC	4	13.33
Degree	5	16.67
Postgraduation	7	23.33
Occupation		
Coolie worker	5	16.67
Agriculture	3	10
Beedi roller	6	20
Any other	16	53.33
Type of family		
Nuclear	10	33.33
Joint	9	30
Extended	11	36.67
History of malaria in the family		
Yes	11	36.67
No	19	63.33
Source of information		
Mass media	14	46.67
Health personnel	11	36.67
Friends and relatives	2	6.67
Any other	3	10

Table 2: Level of knowledge of parents regarding prevention of malaria

Level of knowledge	Score	Frequency	Percentage
Poor	0–8	0	0
Average	9–18	14	46.67
Good	19–28	16	53.33

Analysis of existing knowledge of parents regarding prevention of malaria

The knowledge of parents reveals that 46.67% had average knowledge and 53.33% had good knowledge regarding prevention of malaria Table 2.

Area-wise analysis of the knowledge score

The parents had 67.07% knowledge regarding the concept, incidence, and etiology of malaria, while they had 74.57% knowledge regarding clinical features, diagnosis, complications, and treatment of malaria. Least knowledge. 63.60% was found in prevention and control of malaria Table 3.

Association of knowledge with demographic variables

The overall findings of the present study revealed that the mean knowledge score was 18.96 ± 4.532. Chi-square test was used to analyze the association of knowledge of the prevention of malaria with demographic variables shows that there was no significant association between knowledge of parents and the demographic characteristics Table 4.

Table 3: Area-wise mean, SD, and mean percentage of knowledge score of parents regarding prevention of malaria

Knowledge area	Maximum score	Mean score	SD	Mean percentage
Concept, incidence, and etiology of malaria	8	5.37	1.47	67.07
Clinical features, diagnosis, complications, and treatment of malaria	8	5.97	1.35	74.57
Prevention and control of malaria	12	7.63	1.81	63.60
Total	28	18.97	4.53	68.41

Table 4: Association of knowledge with demographic variables

Demographic variables	Calculated Chi-square value	Df	Inference
Gender	3.45	1	NS
Age	6.53	3	NS
Education	1.34	3	NS
Occupation	5.70	3	NS
Type of family	1.98	2	NS
History of malaria in the family	0.41	1	NS
Source of information	6.57	3	NS

Discussion

Majority of the participants were female 53.33% and males 46.67%. About 40% of the parents were in the age group of 31–40 years. Most of the parents 46.67% had high school education. About 63.33% of the family had no history of malaria in their family. About 46.67% had average knowledge regarding malaria.

The study conducted by Boratne *et al.* to identify the existing knowledge of the study population regarding mosquito-borne disease. The result showed that 384 (79.17%) males and 887 (74.60%) females were aware of these mosquito-borne diseases through television followed by health-care providers (16.43%) and through newspaper (12.84%). The highest number of adults 79 (79%) were not exposed to any of the mosquito-borne diseases given, 10 (10%) were exposed to chikungunya, 7 (7%) were exposed to malaria, 3 (3%) were exposed to filarial, and remaining 1 (1%) was exposed to dengue.[6]

The present study reveals that 46.67% had average knowledge, 53.33% had good knowledge, and none of them had poor knowledge. Ghosh *et al.* conducted a study was to understand the level of knowledge and perceived risk regarding mosquito-borne infectious disease. The open-ended questionnaire was used to collect the data. The result showed that in the study population about 41.17% knows about various types of mosquitoes and the scientific names, whereas 58.82% have information about mosquitoes and associated diseases but have no knowledge of various kinds of mosquitoes and their scientific names.[7]

Interpretation and Conclusion

The findings of the present study reveal that there is no significant association between the level of knowledge and demographic variables.

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