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A QUASI-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF EDUCATIONAL INTERVENTION ON KNOWLEDGE REGARDING MALARIA AMONG MOTHERS OF SELECTED COMMUNITY AREA, BAREILLY, U.P

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Abstract

“A quasi- experimental study to assess the effectiveness of educational intervention on knowledge regarding malaria among mothers of selected community area, Bareilly, U.P.” The main objective of the study was to assess the effectiveness of educational intervention on knowledge regarding malaria among mothers. A Quantitative research approach with quasi-experimental one group pretest posttest design was used as research design for the study. This study was conducted at Village Chaneti Chenata Kyara block, Lalphtak, Bareilly U.P. 60 mothers were selected through non-probability convenient sampling techniques. The data was collected by structured knowledge questionnaire. The findings of the study revealed that in pretest score 60% of mothers had average knowledge, 31.7% had poor level of knowledge and only 8.3% had good level of knowledge regarding malaria. In posttest score, majority of the mothers 45(75%) had good knowledge and 15(25%) had average level of knowledge regarding malaria. The mean knowledge score and SD was 13.25 ± 4.225 in pretest whereas 23.05 ± 2.777 in posttest. The obtained value was $t = 23.932$, $p = 0.0001$. There was significant association between age, educational qualification, occupational status, family income, types of family, number of children in the family, use of mosquito net, do you have any information regarding malaria and sources of information regarding malaria. The study concluded that after the administration of educational intervention; majority of mothers had good knowledge whereas a smaller number of mothers had average level of knowledge regarding malaria. The ‘t’ test which was computed between pre-test and post-test knowledge score indicate a true gain knowledge.

Key Words: Effectiveness, Educational intervention, Knowledge, Malaria, Mothers.

INTRODUCTION

Malaria is one of the oldest recorded diseases in the world. In the 18th century Italian people associated it with “bad-air” “malaria” from which the name is derive.¹ Malaria is a life -threatening disease caused by plasmodium (parasite) that are transmitted to people through the bites of infected female *Anopheles* mosquitoes. There are 5 Plasmodium parasite species that cause malaria in humans and 2 of these species – *P. falciparum* and *P. vivax* – pose the greatest threat and other malaria are *P. malariae*, *P. ovale* and *P. knowlesi*.³ For the *Anopheles* mosquito to become infective, they must bite from a person already infected with the malaria parasites .⁵The common signs and symptoms of malaria are shaking chills & cold, high fever, sweating, headache, joints pain etc. When the parasite develops in the erythrocyte, hemozoin pigment and other toxic factors accumulate. These are dumped into the bloodstream. The hemozoin and other toxic factors such as GPI stimulate macrophages to produce fever and rigors and influence pathophysiology.⁶*Anopheles* mosquitos bite all through the night with peak dawn and dusk in the morning. As the infected mosquito bites healthy person, the malaria parasites enter the blood stream and travel to the liver where it multiplies for 10-14 days Malaria parasite can pass from a pregnant mother to the foetus.⁷As soon malaria infection is confirmed, doctors will prescribe antimalarial drug, while preventing malaria complications.



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NEED OF THE STUDY

Malaria is a life-threatening disease primarily found in tropical countries.¹¹ Most malaria cases diagnosed in the United States of America are imported from endemic countries. The risk of infection depends on the length of exposure and the intensity of malaria transmission. Based on present predictions for climate change, researchers predict an increase in the geographical distribution and an increasingly suitable climate for transmission in tropical regions.¹² Despite significant efforts to eradicate malaria, it continues to be a serious public health problem, affecting more pregnant women and children. According to imported from endemic countries. The risk of infection depends on the length of exposure and the intensity of malaria transmission. Based on present predictions for climate change, researchers predict an increase in the geographical distribution and an increasingly suitable climate for transmission in tropical regions.¹² Despite significant efforts to eradicate malaria, it continues to be a serious public health problem, affecting more pregnant women and children. According to the health department data, 46717 malaria cases were reported in Bareilly district in 2019, of which 25.99% were Plasmodium vivax cases and P. falciparum cases.¹⁶ The government was launched National Malaria Control Programme in 1953, after that the incidence of Malaria cases came down from 75 million to 2 million cases.¹⁷

The failure to consider community's KAP about malaria has contributed to the inability of programs to achieve control. Malaria is a serious health issue that needs urgent attention especially in children less than 5 years. Hence the study aims to assess the effectiveness of educational intervention on knowledge regarding malaria among mothers of selected community area, Bareilly, U.P.”

STATEMENT OF PROBLEMS

“A quasi-experimental study to assess the effectiveness of educational intervention on knowledge regarding malaria among mothers of selected community area, Bareilly, U.P.”

OBJECTIVES

1. To assess the level of knowledge regarding malaria among mothers.
2. To assess the effectiveness of educational intervention on knowledge regarding malaria among mothers
3. To find the association between pretest level of knowledge score of mothers regarding malaria with their selected demographic variables.

OPERATIONAL DEFINITION

1. **Assess** – In this study, it refers to process use to identify the level of knowledge among mothers regarding malaria.
2. **Effectiveness**-In this study, it refers to a result produced by the educational intervention about malaria.
3. **Educational intervention** - In this study, it refers to systematically developed teaching material on malaria to enhance the knowledge of mothers with the help of appropriate A V aids.
4. **Knowledge**- In this study, it refers to facts and information acquired through education regarding malaria as measured by structured knowledge questionnaire.
5. **Malaria**- It is a communicable disease caused by protozoan infection and transmitted through female anopheles' mosquitoes.
6. **Mothers**- It refers to the mothers (21-45 years) who are residing in selected community area.



HYPOTHESES

All the hypotheses were tested at the level of $p < 0.05$.

1. **H₁:** There would be significant difference between mean pretest and posttest knowledge score of mothers regarding malaria after educational intervention.
2. **H₂:** There would be significant association between selected demographic variables and pretest knowledge level of mothers regarding malaria.

RESEARCH METHODOLOGY

1. **Research approach:** Quantitative research approach.
2. **Research design:** Quasi experimental (one group pretest posttest) design.
3. **Variables of the study**
 - **Independent variable:** Educational intervention on malaria.
 - **Dependent variable:** knowledge regarding malaria.
 - **Demographic variables:** Age, educational qualification, occupation, family income, type of family, type of house, number of children in the family, use of mosquito net and source of information about malaria.

4. **Setting of the study:** Village of Chaneti Chaneta Kyara Block, Lalphtak, Bareilly, U.P.

5. Population

- **Target population-** Mothers of selected community area, Bareilly, U.P.
- **Accessible Population-** Mothers of selected community area, Bareilly, U.P.

6. **Sample size:** 60 mothers

7. **Sampling technique:** Non- Probability convenient sampling technique.

8. Sampling criteria

- **Inclusion criteria:**
 - 1) Mothers age group 21-45 years.
 - 2) Mothers residing in community area.
 - 3) Mothers available at the time of data collection.
- **Exclusion Criteria:**
 - Mothers not interested.

ANALYSIS & INTERPRETATION

These results were computed using descriptive and inferential statistics.

Table no. 1: Frequency and percentage distribution of demographic variables of study participants.

N= 60

S. No.	Demographic variables	Frequency	Percentage (%)
1.	Age		
	a) 21-28 years	34	56.7%
	b) 29-36 years	21	35%
	c) 37-45 years	05	8.3%



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2.	Educational qualification a) No formal education b) Primary education c) Secondary education d) Graduation & above	08 21 20 11	13.3% 35% 33.4% 18.3%
3.	Occupational status a) Farmer b) Business c) Employed (Private/government) d) Housewife	01 04 12 43	1.7% 6.7% 20% 71.6%
4.	Family income a) Below Rs. 5000/- month b) Rs. 5001/- to 10000/-month c) Rs. 10001/- to 15001/- month d) Above 15001/- month	09 16 11 24	15% 26.7% 18.3% 40%
5.	Types of family a) Nuclear family b) Joint family c) Extended family	24 32 04	40% 53.3% 6.7%
6.	Type of house a) Pucka house b) Kutcha house	38 22	63.3% 36.7%
7.	Number of children in the family a) One b) Two c) Three & above	19 31 10	31.7% 51.6% 16.7%
8.	Use of mosquito net a) Yes b) No	33 27	55% 45%
9.	Do you have any information regarding malaria a) Yes b) No	48 12	80% 20%
10.	Sources of information regarding malaria a)Friend & family members b)Mass media & printed media c)Personal experience d)Educational programme e)No information	21 11 11 05 12	35% 18.3% 18.4% 8.3% 20%



Table No. 1 It depicts that 56.7% of mothers were 21-28 years of age. 35% had primary education whereas 71.6% were housewife. 40% have family income of above 15001/- month whereas 53.3% were from joint family. 63.3% had pukka type of house whereas 51.6% had two children. 55% were using mosquito net whereas 80% had no information of malaria. 35% had friend & family members as a source of information.

Table no. 2: Frequency & percentage distribution of pre-test & posttest level of knowledge regarding malaria among mothers.

N=60

Level of Knowledge	Scores	Pretest		Posttest	
		Frequency	%	Frequency	%
Poor	0 - 10	19	31.7%	00	00
Average	11 -20	36	60%	15	25%
Good	21 - 30	05	8.3%	45	75%

Maximum score=30

Table no. 2 It depicts that in pretest score 60% of mothers had average knowledge, 31.7% had poor level of knowledge and only 8.3% had good level of knowledge regarding malaria. In posttest score, 75% had good knowledge and 25% had average level of knowledge.

Table no. 3: Comparison of mean and SD of pre and post-test knowledge score of mothers regarding malaria.

N=60

Level of Knowledge	Mean	SD	df	Paired value	t	p-value
Pretest	13.25	4.225	59	23.932		0.0001
Posttest	23.05	2.777				

Dependent t- test $t_{59} = 1.671$ at $p < 0.05$ level of significance, *significant

Table no. 3 it depicts that the mean knowledge score and SD was 13.25 ± 4.225 in pretest whereas 23.05 ± 2.777 in posttest. The obtained value was $t = 23.932$, $p = 0.0001$. The t-test revealed that there was significant difference within pretest and posttest scores. Hence the null hypothesis was rejected and research hypothesis was accepted. Thus, it interprets that administration of educational intervention was found to be effective in improving the level of knowledge at posttest among mothers.



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Table 4: Association between pre-test level of knowledge and demographic variables among mothers regarding malaria

N= 60

S. No	Demographic variables	Level of knowledge			Chi-square	df	p-value
		Good	Average	Poor			
1.	Age a) 21-28 years b) 29-36 years c) 37-45 years	03 02 00	24 12 00	07 07 05	12.835	4	0.010
2.	Educational qualification a) No formal education b) Primary education c) Secondary education d) Graduation & above	00 00 00 05	01 14 15 06	07 07 05 00	37.899	6	0.0001
3.	Occupational status a) Farmer b) Business c) Employed (Private/government) d) Housewife	01 00 02 02	00 04 10 22	00 00 00 19	22.943	6	0.003
4.	Family income a) Below Rs. 5000/- month b) Rs. 5001/- to 10000/- month c) Rs. 10001/- to 15001/- month d) Above 15001/- month	00 00 01 04	02 10 05 19	07 06 05 01	20.712	6	0.002
5.	Types of family a) Nuclear family b) Joint family c) Extended family	04 01 00	18 17 01	02 14 03	13.317	4	0.010
6.	Type of house a) Pucka house b) Kutcha house	05 00	24 12	09 10	5.152	2	0.086
7.	Number of children in the family a) One b) Two c) Three & above	04 01 00	11 23 02	04 07 08	18.075	4	0.001



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8.	Use of mosquito net a) Yes b) No	05 00	22 14	06 13	8.845	2	0.010
9.	Do you have any information regarding malaria a) Yes b) No	05 00	32 04	11 08	8.830	2	0.014
10.	Sources of information regarding malaria a) Friend & family members b) Mass media & printed media c) Personal experience d) Educational programme e) No information	00 03 00 02 00	14 07 08 03 04	07 01 03 00 08	24.399	8	0.002

df₂=5.99, df₄=9.48, df₆=12.59, df₈=15.50 at p<0.05 level of significance

Table no. 4 depicts the description about association between pre-test level of knowledge and demographic variable. Chi square test was performed. And it shows that there was significant association between age ($\chi^2=12.835$; p=0.010), educational qualification ($\chi^2=37.899$; p=0.0001), occupational status ($\chi^2=22.943$; p=0.003), family income ($\chi^2=20.712$; p=0.002), types of family ($\chi^2=13.317$; p=0.010), number of children in the family ($\chi^2=18.075$; p=0.001), use of mosquito net ($\chi^2=8.845$; p=0.010), do you have any information regarding malaria ($\chi^2=8.830$; p=0.014) and sources of information regarding malaria ($\chi^2=24.399$; p=0.002). Whereas there was significant association between type of house ($\chi^2=5.152$; p=0.086). Hence the null hypothesis was rejected and research hypothesis was accepted. Thus, it interprets that demographic variables have any influence on knowledge of mothers regarding malaria.

DISCUSSION

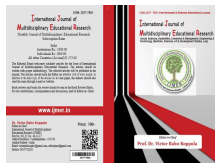
The study findings show that in pretest score ,60% had average knowledge, 31.7% had poor level of knowledge and only 8.3% had good level of knowledge regarding malaria. In posttest score, 75% of mothers had good knowledge and 25% had average level of knowledge regarding malaria. In the present study obtained mean knowledge score and SD was 13.25 ± 4.225 in pretest whereas 23.05 ± 2.777 in posttest. The obtained value was $t = 23.932$, $p = 0.0001$. The t-test revealed that there was significant difference. The study findings shows that there was significant association between demographic variable.

IMPLICATION

Based on the findings the research recommended the implications on nursing practices, nursing education, nursing administration and nursing research.

• NURSING PRACTICE:

Mothers are the key person for protecting the family members from any disease. The planned teaching Programme / training Programme by the health care personnel on prevention and control of malaria to the mothers will improve their knowledge regarding the Transmission, prevention and treatment that helps to achieve the prevention of malaria.



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• NURSING EDUCATION:

In service education regarding prevention and control of malaria may be planned to the nursing personnel especially at community health centres. Conferences, workshops, seminars and symposium can be held for all health professionals and basic workers at village level in identifying the factors to assessment, diagnosis, treatment and prevention of malaria.

• NURSING ADMINISTRATION

The administrator should initiate health education Programme in the community by utilizing the trained staff and encouraging them to involve in such activities. Extend the role in strengthening and designing the primary health care services as per the felt needs of the community to bring health of future citizen.

• NURSING RESEARCH:

Nurse researcher should be motivated to conduct more studies on malaria. Nurse researcher should develop concepts to tackle the problems that causing malaria.

CONCLUSION

The present study assessed the effectiveness of educational intervention on knowledge regarding malaria among mothers. The study concluded that after the administration of educational intervention; majority of mothers had good knowledge whereas a smaller number of mothers had average level of knowledge regarding malaria. The 't' test which was computed between pre-test and post-test knowledge score indicate a true gain knowledge.

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