

**A Study among Adults to Evaluate the Effectiveness of Structured Teaching Programme on Malaria Prevention at Selected Urban Slum Area of Gwalior City India****Mr. Virendra Singh<sup>1</sup>, Dr. Madhusoodan<sup>2</sup>, Dr. Mahipal Singh<sup>3</sup>**<sup>2</sup>Principal, Shivnath Singh College of Nursing, Gwalior MP, India<sup>3</sup>Prof. cum Principal, Akhil Bharti vidhyapeeth College of Nursing Sikar Rajasthan, India<sup>1</sup>Assistant Professor, Laxmi College Of Nursing, Gwalior, MP India**\*Corresponding author***Dr. Mahipal Singh***Article History***Received: 15.09.2017**Accepted: 20.09.2017**Published: 30.09.2017***DOI:**

10.21276/sb.2017.3.9.7



**Abstract:** Malaria is a major public health problem. In India, Malaria is the disease is responsible for very high morbidity and mortality. The Government has got the larger responsibility in controlling the Malaria; with the community involvement is necessary, so that the urban slum adults need Health education programme to reduce the incidence of Malaria and for the prevention of Malaria. This study was conducted to evaluate the effectiveness of STP on prevention of Malaria. A quasi experimental single group pretest posttest research design was used to evaluate the effectiveness of structured teaching programme on Malaria prevention at selected urban slum area of Gwalior city. The study was conducted on 50 adults selected by purposive sampling techniques. Tool was developed validity and reliability was calculated, after conducting pretest PTP was introduced and then posttest was done. The findings of the study shows that mean posttest knowledge score (19.54) of the subjects was higher than the mean pretest knowledge score (11.72), hence PTP on malaria prevention for adult was effective. After the detailed analysis of this study shows that PTP for Malaria prevention was very effective and could also be used for other setting and for other community setting.

**Keywords:** Malaria, Prevention, Adults, Plan Teaching Program (PTP)

**INTRODUCTION**

The objective of Malaria prevention is to help people and community at large is to alleviate, minimize, or prevent actual or potential health problems related to Malaria.

Through effective communication between nurse and people and community at large in any variety of settings this process is being carried out continually. Communicable diseases are the deadly diseases, which affect the common population today. Among the many communicable diseases, Malaria is a protozoan disease, which has demonstrated devastating impact in almost whole of India.

Among many health problems, Malaria is one of the common diseases in community. Malaria is the disease responsible for very high mortality and morbidity. Malaria is related to breeding of mosquitoes, caused by sporozoan of the genus plasmodium and transmitted to man by species of infective female anopheles mosquitoes called vectors or carriers [1].

At present, about 100 countries in the world are considered Malicious, almost half of which are in Sub-Saharan Africa, The Incidence of Malaria was in the mid-1950s more than 2.4 billion of the world's population are still at risk. The Incidence of Malaria worldwide is estimated to be 300-500 million clinical cases in every year; Malaria is thought to kill between 1.1 and 2.7 million people worldwide in each year. Malaria also contributes indirectly to illness and death from respiratory infections, diarrheal diseases and malnutrition [2].

The government has launched National Malaria Control programme in 1953, after that the incidence of Malaria cases came down from 75 million to 2 million cases. In 1958 National Malaria Control programme converted into National Malaria Eradication programme because the incidence of Malaria cases rose due to some reasons and after that National Malaria Eradication programme became Modified plan of operation was commenced in 1977. Hence research shown that the urban and rural community population needs awareness about the Malaria disease and its prevention. Objectives of study: 1) Assess the knowledge and practices of adults regarding prevention of Malaria. 2) To develop structured teaching programme on prevention of Malaria. 3) To administer structured teaching programme on prevention

of Malaria. 4) Evaluate the effectiveness of structured teaching programme. 5) To find association of pretest knowledge of malaria prevention with selected variables.

## MATERIAL & METHODS

A quasi-experimental study was carried out on 50 PTP on Malaria prevention among adults of selected area at Sanyasihuts and Dhobighatt, Nadipar Tal, Morar, Urban Gwalior. The sample for the study comprised of 50 adults. The sample who met sampling criteria and available during the month of Oct. 2015 to Dec. 2015 were selected as the subject for the study. They were selected by non-probability convenient sampling technique.

In Phase I of the study, a descriptive survey approach was adopted to assess the background characteristics of the subjects. In Phase II of the study an evaluative approach was used to measure the effectiveness of STP on Malaria for adults. The research design used was Quasi-experimental, one group pre-test, post-test design to measure the effectiveness of STP in providing information about knowledge and practice of malaria.

A self-structured interview questionnaire on knowledge and practice of Malaria was developed. And an (STP) Structured Teaching Program was prepared to provide pertinent information about the same. **Section I:** This section contained (10) questions about the demographic profile of sample such as age, gender, qualification, occupation, type of house, type of family. **Section II:** This section contained (22) questions about knowledge about malaria. **Section III:** This section contained (10) questions about practice related to malaria. **Section IV:** This section contained STP on Malaria.

The content validity of questionnaire was established by experts. The experts were selected on the basis of their expertise, experience and interest in the problem being studied. They were from different specialties i.e. Medical surgical nursing, Community health nursing, Education, Research, Statistics. They were requested to give their opinions on the appropriateness and relevance of the items in the tool. Necessary modifications were made as per the expert's advice. The reliability of the questionnaire was established by Split Half method and was found to be r-0.84.

A final study was carried out on 50 adults. Data was collected from Oct 2015 to Dec 2015. The sample for the study comprised of the adults, who met the designated criteria were selected through purposive sampling technique. Objectives of study was discussed and obtained consent for participation in study. Existing use of nursing process was assessed by administering a structured assessment questionnaire, followed by administration of Structured Teaching Program (STP) on Malaria. Posttest was taken after 7 days. Based on the objective and the hypothesis the data was analyzed by using various statistical tests i.e. percentage, mean, and standard deviation. **Statistical methods** The significance was calculated by using mean, Standard deviation, unpaired t statistics, paired t statistics for comparison and the Chi-square statistics is used to find the independence of difference. Significance was accepted at 0.01 and 0.05 level of probability.

## RESULTS

### Section I: Description of Socio demographic data of adults

Findings of section I show that out of 50 samples majority 45(90%) were Hindu, only 5(10) % of the subjects belongs to Christian, majority of samples were males 24(82.2%) were belongs to Hindu and 5(17.2%) belongs to Christians. The 23 number of subjects (46%) had Secondary education.16 (55.2%) of males had Secondary education and 11(52.4%) females had Primary education, majority of the subjects 30(60%) were unemployed, among Females 20(95.2%) were unemployed,11(37.9%)Males were self-employed, majority of the subjects 35(70%) had income between 1001 - 3000 Rs, among males 19 (65.5%) of them belongs to 1001 - 3000 Rs Income &16(76.2%) Female belongs to 1001 - 3000 Rs income per month, majority of the subjects 37(74%) were belongs to Nuclear family, the least 5(10%) were belongs to extended family and 8(16%) belongs to joint family, majority samples 25(50%) were living in kachha house and 6(12%) were living in pucca house, majority of the subjects 49(98%) were having Radio and Television and only 1(2%) were attending mass health education programme.

### Section II: Description of Pre-test and post test score of knowledge and practice score

**Table-1: Description of Comparison of pretest and posttest knowledge scores.**

Variable	Mean	Median	SD	t Value p Value
Pre test	11.72	11.0	2.6	t=21.53* p<0.001
Post test	19.54	19.5	0.93	

The data presented in the in table 1 depicts that calculated 't' value  $t = 21.53$  were greater than table value showing a significant difference between the mean pretest and posttest knowledge scores. The 't' value is significant at  $P < 0.001$  levels Hence the stated hypothesis  $H_1$  was proved. This indicates that the STP was significantly effective in increasing the knowledge scores of subjects.

**Table-2: Description of area wise findings of knowledge score in pretest and Posttest**

Sr	Area of Knowledge	Pre-test			Post-test			t Value p Value
		Mea	Mean %	SD	Mean	Mean %	SD	
1	Meaning	1.74	58	0.78	2.76	92	0.48	$t=8.09^*$ $p<0.001$
2	Causes	0.16	16	0.37	0.74	74	0.44	$t=7.14^*$ $p<0.001$
3	Transmission	2	66.6	0.73	2.84	94	0.42	$t=6.68^*$ $p<0.001$
4	Risk factor	1.22	61	0.74	1.8	90	0.4	$t=5.06^*$ $p<0.001$
5	Life cycle	0.32	32	0.47	0.48	48	0.5	$t=1.53$ $p<0.001$
6	Signs and Symptoms	0.82	82	0.39	0.94	94	0.24	$t=1.77$ $p<0.001$
7	Diagnosis	0.6	60	0.49	0.9	90	0.3	$t=3.45^*$ $p<0.001$
8	Treatment	2.36	39	0.98	5.18	86.3	0.87	$t=13.35^*$ $p<0.001$
9	Complication	0.42	42	0.5	0.96	96	0.2	$t=6.6^*$ $p<0.001$
10	Prevention	2.08	69	0.8	2.94	98	0.24	$t=7.09^*$ $p<0.001$

\* Significant

The data presented in the table 2 shows that all the subjects, Mean percentage of knowledge scores of Posttest were higher ranging from 48 to 98% in all the areas except Area 5 and Area -6. The subjects were not gained knowledge in pretest and not in posttest. Whereas the mean percentage knowledge scores in pretest were ranging from 32 to 82% further statistical analysis was done using paired 't' test to find out the significance of difference between pretest and posttest knowledge scores of adults according to each area. The table6 indicates that 't' value was significant in all areas except Area 5 and Area 6.

**Table-3: Description of area wise findings of practice score in pretest and Posttest**

S. No.	Area	Pre-test			Post-test			t Value p Value
		Mean	Mean	SD	Mean	Mean	SD	
1	Environmental measures	1.34	44	0.94	2.16	72	0.68	$t=5.02$ $p<0.001$
2	Protective measures	2.47	61	0.71	3.33	83	0.59	$t=6.13$ $p<0.001$
3	Management	1.56	52	0.91	2.66	88	0.56	$t=7.51$ $p<0.001$

The data presented in the table 3 shows that all the subjects, had mean percentage of practice score of posttest were higher ranging from 72 to 88% whereas the mean percentage practice score in pretest were ranging from 44 to 61% further statistical analysis was done using paired 't' test to find out the significance of difference between pretest and posttest practice scores of adults according to each area the table 9 indicates that 't' value was significant in all areas.

**Section III: Association of pretest knowledge score with selected demographic variables.****Table-4: Association between knowledge and practice scores with selected variables like age, sex, type of family, occupation, education, religion and income.**

Variable	Knowledge Scores		X <sup>2</sup>	df	Level of Significance
	<+Median	>Median			
<b>AGE</b>					
<30 or less	19	18	0.02	1	P=0.88>
30 years	7	6			
<b>Gender</b>					
Male	14	15	0.02	1	P=0.54
Female	12	09			
<b>Type of Family</b>					
Nuclear	20	17	0.24	1	P=0.62
Joint/Extended	06	07			
<b>Education</b>					
Illiterate/ Primary	13	09	0.79	1	P=0.374
Secondary and Above	13	15			
<b>Occupation</b>					
Not employed	16	14	0.05	1	P=0.82
Employed	10	10			
<b>Income</b>					
<3000	20	19	0.04	1	P=0.85
>3000	06	05			

Table 4 depicts that the entire variable under study has  $X^2$  and P value is lesser than table, hence there is no association with any of demographic variable under the study with pretest knowledge scores. Therefore research hypothesis  $H_3$  is rejected.

**DISCUSSION**

The present study revealed in analysis of phase I that according to age revealed that 30% of the subjects were in the age group of 25-29 years. In relation to religion, majority (90%) of the adults were Hindu. Distribution of samples according to type of family, most (74%) of the adults belong to nuclear family. In relation to type of house 50% of the adults were living in kachha house. In relation to educational status of the adults revealed that 46% to of the adults had secondary education. Occupational wise analysis shows that most (60%) of the adults were unemployed. Distribution of the subject according to family income revealed that majority (70%) had the family income between 1001-3000 Rs. In relation to sources of health information revealed that (98%) of the subjects were using Radio and Television.

Present study shows that mean percentage of the pretest knowledge regarding Malaria prevention was 53 percent and it has improved in the post test to mean percentage 88% after the implementation of the STP. Present study shows that mean pretest percentage of practice was 54% and has improved in the post test to mean percentage 84% after the implementation of the STP in the area 2 (causes) they have gained more knowledge.

Similar study conducted by Sharma S K [4] in which he observed that, mean pretest percentage was 40% among the population this indicate that they have lack of knowledge about Malaria disease and their practices against Malaria disease. In the present study, the mean pretest percentage of knowledge was 53%  
The present study is supported by Ibidopo.

C A. [3] he reported that 44% of the respondents were not aware of the cause and 85.5% were identified the breeding places of mosquitoes. (98% in present study). The present study supported by Rasania S K. Bharat A [5] reported that 57% of the respondents were aware of the cause of Malaria fever. The present study supported by Adera T D [6] reported that 83% of respondents attributed the cause of Malaria infection, 36% mentioned drainage of swampy areas, and 96% accepted DDT spray for Malaria prevention.

The present study supported by Singh TG. Singh RK [17] reported that knowledge regarding transmission of Malaria is still poor among the tribal communities. The present study supported by Elphick H. Elphick D [7] reported that 90.7% of the respondents knew about Malaria transmission. (88% in present study)

The present study supported by Srivastava A Nagpal N [8] reported that identifying risk factor for high receptivity, monitoring evaluating control measures to demonstrate information management system. The present study supported by Simsek Z Kurcer M A [9] reported that 78.6% knew about the symptoms of Malaria. None of the respondents knew how mosquitoes acquire the parasites. (92% in present study)

The present supported by Kimietowicz Z [10] reported that Malaria vaccine and further more therapeutic, preventive and diagnostic tools need to be developed particular drugs, insecticides and dipstick test. (90% in present study) The present study supported by Yeung S Pongtavornpinyo W [11] reported that combination therapy is better than mono therapies in controlling Malaria. (80% in Present study)

The present study supported by Valecha N Ansari M A [12] reported that single application of 1% Neem oil to the kerosene oil avoid Mosquito biting did not produce any skin irritation for 156 adults and 110 children after one year of exposure. The present study supported by Dua V K. Sharma S K [13] reported that 25% reduction in Malaria incidence by control measures and 90 % reduction in the use of anti- malarial. (100% in present study about control measures)

The present study revealed that there is no association found between knowledge scores and selected demographic variables. In relation to practice scores there is no association between practice scores and selected demographic variables but there is an association found between practice scores and income of the family.

The present study supported by Sharma A K Agarwall O P [14] reported that there is no association between educational status and knowledge of the adults about Malaria prevention. The present study is supported by Bhatia M R. Fox-Rushby J A [10]. He reported that there is no association found between willing ness to pay for TMN with demographic variables and prevention methods differ significantly.

This finding of the study is similar to the findings of the present study conducted by Mrs. Thressiamma P M [15]. She observed that, there was no association between selected demographic variables like age, education, occupation and number of pregnancies and their posttest knowledge scores at 0.05 percent level. In the present study comparison was done between pretest and posttest of knowledge course ( $t=21.53$ ,  $p<0.001$ ).

Comparison was done between Pretest and posttest of practice scores ( $t=16.73$ ,  $p<0.001$ ). Hence the study was effective towards prevention of Malaria. Present study was supported by George [16] reported that mean post test. Knowledge scores of experimental group was significantly higher than that of their pre test scores  $t_{31} = 1.69$ ,  $p<0.05$ ) and mean post test scores is  $t_{62} = 1.66$ ,  $p<0.05$ .

## CONCLUSIONS

The present study explore that there is significant effect of STP on knowledge and practice of Malaria. The correlation finding which was done to find the relationship with selected demographic variables was done by using 'chi-square' test. STP have significant effect in improving knowledge and practice of adults so as to prevent malaria.

## IMPLICATION & RECOMMENDATION

The findings of study have implication at various level of nursing like nursing practice, nursing education, nursing administration and nursing research in following ways:-

- If the nurse implements effective nursing care for the people, on malaria number of cases can be reduced to a large extent. The study finding reported that people have very less knowledge that can be improved to a great extent by teaching method like STP.
- Nursing education is developing rapidly in India. We are training nurses to achieve an International standard. To achieve high level of educational standards, nursing education needs to be raised to a greater extent. This is achieved if all aspects of health needs are considered as a whole. Findings of the present study also have an implication in nursing education.
- The structured teaching can be utilized to create awareness among the risk group including general population to prevent the Malaria.
- Community Health Nurse can use it while carrying the home visit activities to educate the adults.



- As a part of administration, nurses' administrators play a vital role in educating people, clients and students. Nurse administrator can utilize this type of survey researches to impart further knowledge and improve practice of people by educating people and can organize and conduct health awareness campaigns by using these structured teaching programs.
- Nursing research is an essential aspect of nursing as it uplifts the profession and develops new nursing norms and a body of knowledge. There is a need for extended and intensive nursing research in the area of health education.
- The present study is an attempt to assess the effectiveness of STP on Malaria. Based on this study the nurse researcher can design further research for other conditions like Dengue, Chickengunia etc. The Implication of this study for the nurse researcher can be viewed from the effective measures for the care of critical fetal disease.

Keeping in view the findings of the study, the following recommendations are made:

- A similar study can be done for other disorders also.
- A similar study can be done to develop standardized booklet.
- A similar study can be replicated on larger group and in different setting.

## REFERENCES

1. Basavanthappa, B. T. (2008). *Community health nursing*. Jaypee Brothers Publishers.
2. Javaid, G., Shah, O. J., Dar, M. A., Shah, P., Wani, N. A., & Zargar, S. A. (2004). Role of endoscopic ultrasonography in preoperative staging of gastric carcinoma. *ANZ journal of surgery*, 74(3), 108-111.
3. Ibidapo, C. A. (2005). Perception of causes of malaria and treatment-seeking behaviour of nursing mothers in a rural community. *Australian Journal of Rural Health*, 13(4), 214-218.
4. Sharma, S. K., Jalees, S., Kumar, K., & Rahman, S. J. (1993). Knowledge attitude and beliefs about malaria in a tribal area of Bastar district (Madhya Pradesh). *Indian journal of public health*, 37(4), 129-32.
5. Rasania, S. K., Bhanot, A., & Sachdev, T. R. (2002). Awareness and practices regarding malaria of catchment population of a primary health centre in Delhi. *The Journal of communicable diseases*, 34(1), 78-84.
6. Adera, T. D. (2003). Beliefs and traditional treatment of malaria in Kische settlement area, southwest Ethiopia. *Ethiopian medical journal*, 41(1), 25-34.
7. Elphick, H., & Elphick, D. (2003). Factors that contribute to the low use of bed nets in a malaria endemic zone of sub-Saharan Africa: a questionnaire survey in a rural population in Zambia. *The Central African journal of medicine*, 49(7-8), 87-89.
8. Srivastava, A., Nagpal, B. N., Saxena, R., Eapen, A., Ravindran, K. J., Subbarao, S. K., ... & Appavoo, N. C. (2003). GIS based malaria information management system for urban malaria scheme in India. *Computer methods and programs in biomedicine*, 71(1), 63-75.
9. Simsek, Z., & Kurcer, M. A. (2005). Malaria: knowledge and behaviour in an endemic rural area of Turkey. *Public health*, 119(3), 202-208.
10. Bhatia, M. R., & Fox-Rushby, J. A. (2002). Willingness to pay for treated mosquito nets in Surat, India: the design and descriptive analysis of a household survey. *Health policy and planning*, 17(4), 402-411.
11. Dondorp, A. M., Newton, P. N., Mayxay, M., Van Damme, W., Smithuis, F. M., Yeung, S., ... & McGready, R. (2004). Fake antimalarials in Southeast Asia are a major impediment to malaria control: Multinational cross-sectional survey on the prevalence of fake antimalarials. *Tropical Medicine & International Health*, 9(12), 1241-1246.
12. Valecha, N., Ansari, M. A., Prabhu, S., & Razdan, R. K. (1996). Preliminary evaluation of safety aspects of neem oil in kerosene lamp. *Indian journal of malariology*, 33(3), 139-143.
13. Dua, V. K., Sharma, V. P., & Sharma, S. K. (1988). Bio-environmental control of malaria in an industrial complex at Hardwar (UP), India. *Journal of the American Mosquito Control Association*, 4(4), 426-430.
14. Sharma, A. K., Aggarwal, O. P., Chaturvedi, S., & Bhasin, S. K. (2003). Is education a determinant of knowledge about malaria among Indian tribal population?. *The Journal of communicable diseases*, 35(2), 109-117.
15. Raghuvanshi, V. S. (2002). Improvement in malaria services in an urban setting: role of staff motivation. *Public health*, 116(6), 374-378.
16. Simonsen, L., Kane, A., Lloyd, J., Zaffran, M., & Kane, M. (1999). Unsafe injections in the developing world and transmission of bloodborne pathogens: a review. *Bulletin of the World Health Organization*, 77(10), 789.
17. Singh, T. G., Singh, R. K., & Singh, E. Y. (2002). A study of knowledge about malaria and treatment seeking behaviour in two tribal communities of Manipur. *Indian journal of public health*, 47(2), 61-65.