



## KAP on Malaria - a brief account of responses of newly joined medical undergraduates of SDMCMS & H, Dharwad, India

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### Abstract

Malaria is a major public health problem in India. A cross-sectional study has been conducted on newly joined medical undergraduates of SDMCMS&H using pre-tested, pre-designed questionnaire to assess Knowledge, Attitude, Practices (KAP) regarding malaria. Handouts were distributed followed by health education. Data was analyzed using descriptive statistics. Out of 95 students, 89 (93.6%) reported malaria to be a serious disease if not treated in time and 93 (97.8%) knew that malaria transmission occurs by mosquito bite, Mosquito responsible is female anopheles (96.8%) and dirty stagnant water reported as breeding site by 90 (94.7%) students and Plasmodium as the malaria parasite was known to 71 (74.7%). Among the reported symptoms of malaria, fever was the most common answer. Investigation to diagnose malaria is blood test according to 78 (82.1%). Using coil or repellants in house protects from mosquito bite according to 65 (68.4%). Insecticide treated bed nets and indoor residual spraying were known to 19 (20%) and 32 (33.6%) students respectively. 52 (54.7%) students were aware of Governmental measures. Knowledge regarding insecticide treated bed nets; Indoor residual spraying was comparatively less. Not many knew about rapid diagnostic test (RDT).

**Keywords:** Indoor residual spraying, Insecticide treated bed nets, Mosquito.

### Introduction

Malaria continues to pose a major public health threat in Indian (Park, 2011). It not only poses high risk to health of the individual but also places burden on households, health services and ultimately on economic growth of communities and nation. The mosquito-borne diseases result in avoidable ill-health and death which also has been emphasized in National Health Policy (Park, 2009).

Government of India is working on the control of mosquito transmitted diseases. The National malaria control programme was launched in 1953; it has been renamed as National anti-malaria programme in 1999. In 2003, renaming of NAMP to National Vector Borne Disease Control Programme was done (Park, 2011).

The present study was designed with following objectives: a) To assess the knowledge, attitude and practices of newly joined medical undergraduates of SDMCMS & H, about malaria and b) To sensitize the students to available measures for prevention and cure of malaria.

### Material and methods

Study design: Cross-sectional study; Study area: SDMCMS & H, Dharwad; Study participants: Newly joined undergraduate medical students; Inclusion criteria: All students present on the day of study; Exclusion criteria: Students absent on the day of study; Study instrument: Pretested questionnaire in English; Statistical analysis: Descriptive statistics was performed.

A cross-sectional study was carried out to assess the knowledge, attitude, practices among newly joined undergraduate medical students of SDMCMS & H, Dharwad, about malaria. Students present on the day of study were included. Informed written consent to participate in the study was taken from each participant and confidentiality was maintained.

A pre-tested, pre-designed questionnaire forms for filling the responses were distributed. The filled forms were collected. This was followed by distribution of handouts and health education on preventive and curative aspect of malaria. Depending upon the responses obtained, the data was analyzed to know knowledge, attitude and practices of students regarding malaria using frequency distribution and percentages.

### Results

The results are presented in Table (1-6) and out of 100 students, 95 participated in the study remaining 5 students were absent. 41 (43.1%) responded that they themselves or any one known to them have suffered from malaria. Awareness about insecticide, treated bed nets and indoor residual spraying was present in 19 (20%) and 32 (33.6%) students respectively. When asked regarding lifelong immunity provided by one attack of malaria, 21 (22.1%) responded in positive way. Availability of malaria vaccines was known to 55 (57.8%) students.

### Discussion

In the present study, according to 89 (93.6%) students, malaria could be a serious disease if not treated in time and 93 (97.8%) students had knowledge about malaria being transmitted by mosquito bite; 92(96.8%) students responded female anopheles mosquito to be responsible for malaria transmission.

In a study on community knowledge, attitude and practice on malaria in Swaziland by Hlongwana *et al.* (2009), showed that out of 320 households surveyed by them, 298 (93.1%) of the respondents had heard about malaria and almost all, that is 297 (99.7%) correctly associated malaria with mosquito bite and also demonstrated appropriate knowledge of an attitude towards malaria by stating that it could kill if not treated. In another study in



Table 1. Knowledge about malaria disease among newly joined undergraduate medical students.

Queries	Response	
	No.	(%)
Q1. According to you malaria is a/an		
a. Ordinary disease	3	3.15
b. Serious disease if not treated in time	89	93.6
c. A serious disease	5	5.2
Q2. Name of malaria vector		
a. Female Anopheles	92	96.8
b. Male Anopheles	2	2.1
c. Male Culex	0	0
d. Aedes mosquito	1	1.05
Q3. Malaria vector breeds in		
a. Dirty stagnant water	90	94.7
b. Clean stagnant water	5	5.26
c. Dirty flowing water	0	0
d. Clean flowing water	0	0
Q4. Malaria parasite belongs to		
a. Bacteria	9	9.47
b. Protozoa (Plasmodium)	71	74.7
c. Virus	11	11.5
d. Amoeba	0	0
Q5. When infected with malaria you consulted to		
a. Govt. hospital	6	14.6
b. Private hospital	34	82.9
c. Traditional healer	1	2.4
d. Home remedies	0	0
e. Did nothing	0	0
Q6. Do you know the name of some of the commonest medicines used in malaria?		
a. Chloroquine	46	48.4
b. Quinine	45	47.3
c. Other medicine	10	10.5
d. No idea	14	14.7
Q7. Do you know the name of some commonly used insecticides for mosquito control?		
a. DDT	49	51.57
b. Finit	1	1.05
c. Pyrethrum	9	9.47
d. Others	4	4.21
e. No idea	28	29.4
Q8. Ways to prevent Mosquito breeding		
a. Cleaning home surroundings	61	64.2
b. Draining stagnant water	89	93.6
c. Clearing bushes around home	37	38.9
d. Others	4	4.21
Q9. What investigations are done to diagnose malaria?		
a. Blood test	78	82.1
b. Urine test	3	3.15
c. Rapid diagnostic tests	18	18.9
d. no idea	4	4.21
Q.10 Symptoms of Malaria		
a. Fever	90	94.70
b. Nausea	70	17.90
c. Headache	32	33.70
d. Bodyache	37	38.90
e. Vomiting	22	23.20
f. Shivering	54	56.80

towards malaria by stating that it could kill if not treated.

Table 2. Modes of transmission of Malaria

Modes of transmission	No.	%
Mosquito bite	91	97.80
Drinking dirty water	11	11.60
Food	3	3.15
Blood transfusion	61	64.20
Contact	19	20
Vertical transmission	27	29.50

Table 3. Modes of protection against mosquito bite.

Modes of protection against mosquito bite	No.	%
Bed nets	61	64.21
Screening of building	16	16.84
Insecticidal sprays	31	32.60
Mosquito coil/Repellant	65	68.40
Use of smoke	16	16.80
Prevention of breeding	47	49.50
Use of fan	18	18.90
Covering body with sheets	10	10.50
Cleaning of house	46	48.40
Others	7	7.40
No idea	3	3.20

Table 4. Self-medication in malaria

Form of self-medication	No.	(%)
a. Antipyretics	3	25
b. Antibiotics	4	33.3
c. Antimalarial	8	66.7
d. Others	0	0

Table 5. Source of information for Insecticide treated bed nets.

Source	No.	(%)
a. Mass media	7	36.8
b. Newspaper/Magazines	6	31.5
c. Health service provider	3	15.8
d. Teachers	2	10.5
e. Relatives and friends	4	21.0

In another study in Bangladesh by Ahmed *et al.* (2009), a tiny fraction of respondents could accurately state the correct transmission route.

Dirty stagnant water as breeding site for malaria vector was the response of 90 (94.7%) students, in the present study. In a study carried out by Humphrey D. Mazigo *et al.* (2010), on KAP about malaria and its control in rural NW Tanzania, stagnant water was mentioned by almost two third of respondents to be the main area for mosquito breeding.

Out of total 95, 71 (74.7%) respondents in the present study knew Plasmodium as the Malaria Parasite. In another study done in Bangladesh<sup>4</sup> none of the respondents could state the parasitological cause.

Among the reported symptoms of malaria, this study reported fever to be the most common answer followed by shivering (56.8%). Headache, high temperature/fever and chills were found to be the three most frequently mentioned signs and symptoms of malaria in a study carried out in Swaziland. Another study conducted in



Table 6. Source of information for Indoor residual spraying.

Source	No.	(%)
a. Mass media	11	34.37
b. Newspaper/Magazines	8	25
c. Health service provider	10	31.25
d. Teachers	2	6.25
e. Relatives and friends	6	18.75

Banladesh by Ahmed *et al.* (2009) showed that majority of the respondents had mentioned fever (with shivering, at intervals) as the most common symptom of malaria.

In the present study, 41 (43.1%) responded that they

Fig. 1. Modes of transmission of Malaria

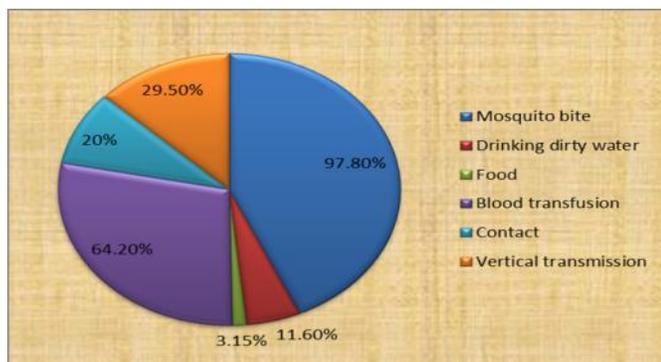
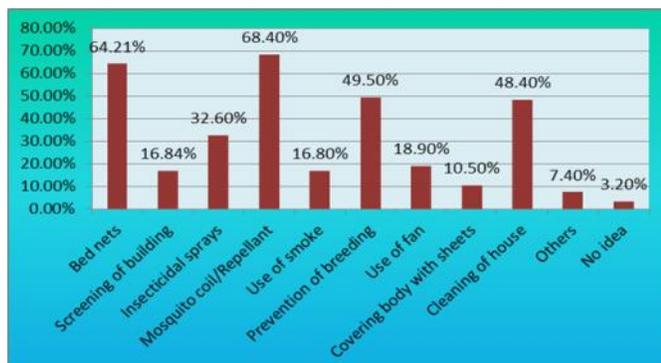


Fig. 2. Modes of protection against mosquito bite.



themselves or any one known to them had ever suffered from malaria and investigation to diagnose malaria, according to 78 (82.1%) respondents was blood test followed by Rapid Diagnostic Test (RDT) (18.9%).

Using coil or repellants in house was found to be most commonly (68.4%) used measure to protect from mosquito bite followed by use of mosquito nets (64.2%) in the present study. In the study carried out by Hlongwana *et al.* (2009) in Swaziland with regard to personal protective measures, some participants stated that they use bed nets followed by mosquito coils. Observation regarding personal protection measures to avoid mosquito bite, in the study in Delhi (Tyagi *et al.*, 2005), showed usage of mosquito net as the preferred method followed by usage of insecticides.

In the study done by Hlongwana *et al.* (2009) in Swaziland majority of the respondents (21.6%) mentioned spraying to be the preventive measure of

choice as against draining of stagnant water (93.6%) in the present study.

### Conclusion

Study found that knowledge regarding the preventive methods such as insecticide treated nets, indoor residual spraying to be comparatively less as compared to other methods and not many students knew about Rapid Diagnostic Tests.

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