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Knowledge, attitude and practice about prevention and control of malaria, in adult population of a rural area of Central India, Maharashtra

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Abstract
Background: *Malaria continues to be one of the major public health concerns that India is facing since decades. Early identification and management of malaria prevents its complications and subsequent mortality due to it. Practices of controlling malaria have been unsatisfactory indicating further need of exploring the knowledge, attitude and practices of malaria among the people of high Annual Parasite Incidence (API) states, district and blocks.*
Aim: *The aim of the study is to assess the levels of knowledge, attitude and practices for prevention of malaria in rural Nagpur.*
Methodology: *A cross sectional community based KAP sample survey was carried out and Data was collected by face to face interview by using a structured questionnaire.*
Results: *Among 220 participant's knowledge about transmission season of malaria, biting habits and resting habits was found correct in 197(89.55%), 190 (86.38%), and 186 (84.55%) respectively. 171(77.73%) study subjects have the average level score for attitude component. Of 168 participants 52(23.64%) not using any personal protective measure. 127 (57.73%) participants had a full course of treatment, 159(72.27%) never observed a dry day in a week. Knowledge on aetiology and symptoms is optimum, while knowledge regarding the complications and preventive methods were found low. Television is the major source of knowledge. Practices of sanitation and correct health seeking behaviour were found to be low in lower socio economic class.*
Recommendations: *Health education program towards community should be emphasized to improve the knowledge, attitude, and practices. Capacity building of government health workers is needed.*
Keywords: *Malaria, Knowledge, Attitude, Practice, rural.*

Introduction

Malaria is an entirely preventable and treatable disease. It is caused by a protozoan parasite belonging to the genus plasmodium, and is spread from one person to another by the bite of female anopheles mosquitoes. There are more than 400 different species of Anopheles mosquito, but only 30 are malaria vectors of major importance.[1]

Five species of Plasmodium can infect human beings. Four of these – P. falciparum, P. vivax, P. malariae and P. ovale – are human malaria species. In recent years, human cases of malaria have also been recorded due to P. knowlesi – a species that causes malaria among monkeys, and occurs in certain forested areas of South-East Asia.[2]

About 8% of the total cases globally are estimated to be due to P. vivax, although the proportion outside the African continent is 47%.[3]

Malaria can affect all segments of the population, but children under five years of age, pregnant women, people living in emergency situations and people living with HIV/AIDS are particularly vulnerable to this devastating disease.[4]

India is characterized predominantly by unstable malaria transmission, the seasonal transmission being related to rains. Due to this, most of the population has little or no immunity towards malaria. As a result, all age groups of population living in malarious areas, are at risk of getting infection.[5]

About 95% population in the country resides in malaria endemic areas and 80% of malaria cases reported in the country are confined to areas where 20% of population reside, in tribal, hilly, hard-to-reach or inaccessible areas.[5]

During 2013, 0.88 million cases, 0.46 million Pf cases and 440 deaths from malaria have been reported in India.[6]

During 2013, out of 43,677 cases, 9,198 Pf cases and 80 deaths from malaria have been reported in Maharashtra.[6]

The transmission of malaria is determined by climatic, non-climatic and biological factors[7,8]

In 2003, in India, the National Vector Borne Disease Control Program (NVBDCP) was launched, integrating the various components of control strategies for common vector borne diseases and it became an integral part of the National Rural Health Mission (NRHM) launched in 2005.[9,10,11]

Government of India has implemented many strategies to prevent and control malaria, andmore resources are available for malaria control than at any other time since the eradication era. However, malaria has been a major public health challenge in India till date. The fight against it cannot be won without the active participation of the community. Poor community participation in malaria control measures impairs the success of these measures, probably due to lack of knowledge, illiteracy, and socio-economic factors. Malaria control program intervention could only be successful if the community members have understood malaria transmission routes and ways of controlling it, which might change their attitudes towards malaria prevention, hence improving their control practices. Hence this study was planned to assess the knowledge of the members of the community about malaria, their attitudes towards malaria prevention and control and to determine what practices they do to control malaria.

Objectives

The aim of the study is to assess the levels of knowledge, attitude and practices for prevention of malaria in rural Nagpur.

Methodology

Study design:-community based cross sectional study.

Study settings:- Rural practice are of GMC Nagpur

Study Period:- June 2015 to October 2015

Study subjects: All households i.e. 220 (excluding 4 locked houses)from field practice area of GMC Nagpur

Study Sample: Sample size estimation ‘Knowledge and practices concerning malaria in rural community of Pune district’ by Madne G et al, was taken as reference. b A community based cross sectional sample survey was carried out and Data was collected by predesigned and per tested structured questionnaire.

Results

Most of the study subjects were belonging to upper lower (36.82%) and lower middle (28.64%) socio-economic classes.Knowledge about common transmission season of malaria, biting habits and resting habits of vector mosquitoes, was found

correct in the majority (>80%) of study subjects while the correct knowledge about danger symptoms of malaria and about dry day was present in only 36.82% and 27.73% of study subjects, respectively. >70% study subjects agreed that blood should be tested for malaria in every case of fever, early diagnosis and complete treatment could prevent complications, completion of full course of the prescribed treatment is necessary even if the fever is subsided and adoption of preventive measures as the best method to prevent malaria. Only 30.45% and 33.64% study subjects were practicing draining of stagnant water and clearing vegetation and discards surrounding their houses, respectively and 55.45% and 20.91% study subjects were always and Sometimes using a protective measure at night, 55.45% study subjects were seeking treatment for fever and 57.73% study subjects completing full course of the prescribed treatment for their illness but only14.09% study subjects were always observing a dry day in a week. Analysis of the socio-economic status with factors related to knowledge, attitude and practices showed that there was not any significantly related factor, which Implies that the socio-economic status do not play a major role in the prevention and control of malaria.

T-1 Association between socioeconomic status and Knowlwdge of Study subjects about prevention and control of malaria

Factor	Study subjects				P-value
	Lower SES (n=139)		Other SES (n=81)		
	correct		correct		
	No.	%	No.	%	
Mode of transmission of malaria	98	70.5	61	75.3	0.442
Breeding habits of mosquitoes	95	68.35	54	66.67	0.797
Biting Habits of Mosquitoes	121	87.05	69	85.18	0.697
Resting habits of Mosquitoes	120	86.33	66	81.48	0.337
Common transmission season of malaria	125	89.55	72	88.89	0.808
Common symptoms of malaria	104	74.82	64	79.01	0.48
Danger symptoms of malaria	49	35.25	32	39.51	0.528
Diagnosis of malaria	99	71.22	56	69.14	0.743
Prevention and control measures of malaria outside houses	73	52.52	46	56.79	0.539
Prevention and control measures of malaria inside houses	76	54.68	48	59.26	0.508
Dry day	37	26.62	24	29.63	0.63

T-2 Association between socio-economic status and attitude of study subjects about prevention and control of malaria

Factor	Study subjects				P-value
	Lower SES (n=139)		Other SES (n=81)		
	Agree		Agree		
	No.	%	No.	%	
It is important to get tested for malaria when there is fever	103	74.1	68	83.95	0.09
Early diagnosis and complete treatment of malaria can prevent complications	106	76.26	60	74.07	0.716
We should complete full course of Treatment for malaria though fever subsides	112	80.58	69	85.18	0.387
Best method to prevent malaria is to protect myself from mosquito bites	129	92.8	76	93.83	0.771
It is the responsibility of adults to protect their children from malaria	123	88.49	74	91.36	0.502
Self responsibility to prevent and control malaria is more then governments responsibility	92	66.19	59	72.84	0.305

Association between socio-economic status and practice of study subjects about prevention and control of malaria					
Factor	Study subjects				P-value
	Lower SES (n=139)		Other SES (n=81)		
	Always		Always		
	No.	%	No.	%	
Draining stagnant water surround house	39	28.05	28	34.57	0.311
Clearing vegetations and discards surrounding house	48	34.53	26	32.1	0.712
Use of personal protective measures at night	78	56.12	44	54.32	0.796
Treatment seeking for fever	77	55.4	45	55.55	0.981
Completion of full course of prescribed Treatment for illness	82	59	45	55.55	0.618
Observation of dry day in a week	18	12.95	13	16.05	0.523

Conclusion

Knowledge about preventive and control measures was found incorrect in the majority of study subjects. Most of the study subjects were agreed about using personal protective measures against malaria, however about a quarter of them were not using any measure.

Limitations

The study findings relied on the information provided by study subjects. Actual practices done by them in day to day activities could not be assessed. General is ability of the study findings is limited to the study area since purposive sampling method was used.

Recommendations

Health education program towards community should be emphasized to improve the knowledge, attitude, and practices. Capacity building of government health workers is needed. Health education about preventive and control measures for malaria should be given to the study subjects. Study subjects should be educated about the importance of regular use of personal protective measures against malaria.

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