

Original Research Article

Perceptions and practices on malaria in a rural population of Koraput district, Odisha

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ABSTRACT

Background: Malaria is a mosquito-borne disease caused by a protozoan parasite i.e. Plasmodium parasites. It is one of the most prevalent disorders worldwide. India ranked the fourth-highest number of death cases. In Odisha, more than two-thirds of malaria cases are reported from ten southern districts. A high risk of malaria infection is found in Koraput district of Odisha. The present study aims to access the knowledge, attitude, and practices (KAP) about malaria among the individuals of Koraput district, Odisha.

Methods: This is a cross-sectional study and 258 respondents were taken randomly from five villages of Koraput district. Data on demographics as well as knowledge, attitude, and practices about malaria was collected by using self-modified and pretested schedules.

Results: A significant number of the respondent (97.29%) have reported that they had heard about malaria. 37.60% of respondents answered that they knew it from television, followed by health workers (23.26%) and friends (20.54%). The majority (98.06%) of the sample reported that it is caused by mosquito bites. Almost 63% of the respondents were consulted with a doctor whereas 24.81% consulted first to traditional healers of that region. The majority (99.22%) has a mosquito net and 98.83% of them were used it after a proper wash.

Conclusions: Although the study found good knowledge on malaria, still further awareness is required to elevate the present status. In this study most of the respondents had a good level of knowledge about malaria, however, attitude and practices about malaria prevention still need to be improved.

Keywords: Malaria, Knowledge, Attitudes, Practices, Koraput

INTRODUCTION

Malaria is a mosquito-borne disease caused by a protozoan parasite i.e., Plasmodium parasites. Globally, there were 229 million malaria cases found in 2019 in 87 endemic countries.¹ Still 225 number of malaria cases per 1000 population at risk in the current scenario. Among South-East Asia regions, in 2019, India has contributed 5.6 million cases. According to WHO malaria report, India has occupied the fourth highest-numbered of malaria cases and deaths in the world.² Around 95% of the country's

population are living in malaria-endemic areas. People living in Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, the seven north-eastern states, and Sikkim are in high risk, from where 80% of malaria cases are reported. Odisha is a state in India that reported a highly malaria-endemic region with contributing 45% of total malaria cases.³ Endemic region and transmission of malaria is varying among different parts of Odisha. Eight districts of Odisha, i.e., Koraput, Malkangiri, Nabarangpur, Rayagada, Balangir, Subarnapur, Kalahandi, and

Nuapada, are commonly known as the KBK region (backward region of Odisha) which falls under high risk of malaria infection zone.⁴ More than two-thirds of the case is reported from 10 Southern districts which are mostly backward and tribal area.⁵

The study aims to access Knowledge, Attitude, Practice (KAP) of malaria among the individual of Koraput District.

METHODS

A cross-sectional study was carried out in five villages namely, Tentuliguda, Piteiguda, Kutunipadar, Chindrimalguda, and Khiallguda of Koraput district, Odisha. The field survey was carried out from January 2021 to March 2021.

The villages and the respondents were selected by using a random sampling technique. A total of 258 individuals, from 258 households (one member from each household), aged between 15 and 80 were recruited for the present study. The sample size was calculated with confidence level 95%, absolute precision (d) as 5%, anticipated proportion (p) as 8%.

Socio-demographic data were collected by using schedules. To access knowledge, attitude, and practice on malaria, pretested and self-modified questionnaires were administered.⁶

Informed consent was taken from the participants who were included in the current study. The ethical approval was approved by the Research Advisory Committee (RAC), Central University of Odisha. Data analysis was done by using the MS Excel (version 2010) software tool.

RESULTS

A total of 258 respondents ages between 15 and 80 were recruited for the study, out of which 171 are males and 87 are females. The mean age among males was 40.23 years and that of females was 39.90 years. Almost 60% of the respondents were non-literate and the mean literacy rate was 5.4.

Table 1 deals with respondents’ knowledge of malaria. There are 97.29% of respondent have heard about malaria disease. 98.06% of respondent’s knowledge that malaria is caused by mosquito bites whereas 0.39% have said that it is due to bacteria and 1.55% have agree that it is due to all types of mosquito and bacteria. 91.09% have answered that malaria can be affected twice and 89.92% believe that tablets can completely cure malaria. 51.94% agreed that malaria can be transmitted to another person from the affected one, 40.70% said that it is not transmitted and 7.36% don’t have any idea regarding this. Coming to the source of information on malaria, 37.60%, 20.54%, 3.10%, 15.50% and 23.26% came to know from television, friends, relatives, neighbours and know from a health worker, respectively.

Table 2 deals with the status of respondents’ attitudes towards malaria. It was found that 51.16% population is going for immediate treatment whereas 48.84% of the respondents are not going for immediate treatment of malaria. 6.98% received their first treatment from the traditional healers, locally known as Dishari. 62.79% population has their preference for modern medicine. 24.81% preferred to consult with ASHA. 5.43% have preferred both Dishari and modern medicine. Regarding the symptom of malaria, 12.40% reported that chill with fever, 15.50% fever with a headache, 13.95% said that fever is the symptom of malaria, 12.79% answered that fever with weakness, 15.89% fever with body pain, 12.025 agreed on fever with vomiting, 6.98% said fever with loss of appetite, 5.81% fever with diarrhoea, and 4.65% fever with shivering. Af few individuals (8.53%) knew about anti-malarial drugs.

Analysing the test detected to malaria, 97.29% knew that blood test is to be done, 0.78% replied that urine test is done, 3.88% revealed that both urine and blood test are done, 12.02% answered that they did not know. Responses concerning the best way to cure malaria was, 50.39% of respondent said that medicine is the best way to cure, 40.31% believed that both medicine and injection are needed, only 0.78% have answered that ethnomedicine is the best way for treatment, and 1.55% have expressed that both modern medicine and traditional medicine are necessary for treatment.

Table 1: Status of respondents’ knowledge towards malaria.

Questions	Responses	Male (n=171)	%	Female (n=87)	%	Total (n=258)	%
Do you heard about malaria?	Yes	165	96.49	86	98.85	251	97.29
	No	6	3.51	1	1.15	7	2.71
Can malaria get twice?	Yes	157	91.81	78	89.66	235	91.09
	No	14	8.19	9	10.34	23	8.91
Can tablet cure malaria?	Yes	156	91.23	76	87.36	232	89.92
	No	15	8.77	11	12.64	26	10.08
Some are more prone to get malaria	Yes	31	18.13	9	10.34	40	15.50
	No	42	24.56	25	28.74	67	25.97
	Don’t know	98	57.31	53	60.92	151	58.53

Continued.

Questions	Responses	Male (n=171)	%	Female (n=87)	%	Total (n=258)	%
Malaria severe in children	Yes	26	15.20	10	11.49	36	13.95
	No	30	17.54	18	20.69	48	18.60
	Don't know	115	67.25	59	67.82	174	67.44
Malaria severe in pregnant women	Yes	11	6.43	7	8.05	18	6.98
	No	45	26.32	14	16.09	59	22.87
	Don't know	115	67.25	66	75.86	181	70.16
Transmission of malaria	Yes	95	55.56	39	44.83	134	51.94
	No	65	38.01	40	45.98	105	40.70
	Don't know	11	6.43	8	9.20	19	7.36
Do you about ITN?	Yes	150	87.72	74	85.06	224	86.82
	No	21	12.28	13	14.94	34	13.18
Causes of malaria	Mosquito	169	98.83	84	96.55	253	98.06
	Bacteria	0	0.00	1	1.15	1	0.39
	All	2	1.17	2	2.30	4	1.55
How you know about malaria?	TV	65	38.01	32	36.78	97	37.60
	Friends	39	22.81	14	16.09	53	20.54
	Relative	6	3.51	2	2.30	8	3.10
	Neighbour	25	14.62	15	17.24	40	15.50
	Healthworker	36	21.05	24	27.59	60	23.26
Is malaria getting normal?	Yes	142	83.04	75	86.21	217	84.11
	No	11	6.43	3	3.45	14	5.43
	Don't know	18	10.53	9	10.34	27	10.47
Malaria causes convulsion	Yes	48	28.07	22	25.29	70	27.13
	No	49	28.65	26	29.89	75	29.07
	Don't know	74	43.27	39	44.83	113	43.80
Malaria causes anaemia	Yes	17	9.94	9	10.34	26	10.08
	No	68	39.77	25	28.74	93	36.05
	Don't know	86	50.29	53	60.92	139	53.88

Table 2: Status of respondents' attitudes towards malaria.

Questions	Responses	Male (n=171)	%	Female (n=87)	%	Total (n=258)	%
Immediate treatment for fever	Yes	91	53.22	41	47.13	132	51.16
	No	80	46.78	46	52.87	126	48.84
Preference of treatment	Dishari	12	7.02	6	6.90	18	6.98
	Medical	111	64.91	51	58.62	162	62.79
	ASHA	39	22.81	25	28.74	64	24.81
	Dishari + Medical	9	5.26	5	5.75	14	5.43
	Chill with fever	21	12.28	11	12.64	32	12.40
Symptom of malaria	Fever with headache	26	15.20	14	16.09	40	15.50
	Fever	25	14.62	11	12.64	36	13.95
	Fever with weakness	21	12.28	12	13.79	33	12.79
	Fever with body pain	29	16.96	12	13.79	41	15.89
	Fever with vomiting	20	11.70	11	12.64	31	12.02
	Fever with loss of apatite	12	7.02	6	6.90	18	6.98
	Fever with diarrhoea	8	4.68	7	8.05	15	5.81
	Fever with shivering	9	5.26	3	3.45	12	4.65
	Yes	17	9.94	5	5.75	22	8.53

Continued.

Questions	Responses	Male (n=171)	%	Female (n=87)	%	Total (n=258)	%
Do you know about Anti-malarial drug	No	154	90.06	82	94.25	236	91.47
What test need to be done to detect malaria?	Blood	142	83.04	73	83.91	251	97.29
	Urine	2	1.17	0	0.00	2	0.78
	Blood + urine	6	3.51	4	4.60	10	3.88
	Don't know	21	12.28	10	11.49	31	12.02
Best way to cure malaria?	Medicine	85	49.71	45	51.72	130	50.39
	Injection	0	0.00	0	0.00	0	0.00
	Medicine + injection	70	40.94	34	39.08	104	40.31
	Herbal medicine	13	7.60	7	8.05	20	7.75
	Medicine + injection+ Herbal medicine	3	1.75	1	1.15	3	1.16
What is the Treatment of malaria?	Quinine	1	0.58	2	2.30	3	1.16
	Chloroquine	5	2.92	0	0.00	5	1.94
	Paracetamol	14	8.19	2	2.30	16	6.20
	don't know	151	88.30	83	95.40	234	90.70

Table 3 deals with the status of respondents' practices towards malaria. It was found that 99.22% of respondents have a mosquito net, but 81.01% of respondents were sleeping under a mosquito net. 20.93% answered that they were using repellent to protect from malaria. Only 8.91% are using mosquito coil. 76.74% are burning cow dung to protect from a mosquito bite. 92.64% have expressed that they closed the door and window during the time of night. 98.06% covered their arm and leg during the time of night to protect them from malaria. 74.42% cleared their

household waste disposal and 88.37% buried mosquito breeding sites. Regarding the status of acquiring of mosquito net, 97.66% received from the government, 0.78% number of the respondent has purchased and 1.56% are getting mosquito net both from government and also by purchasing from the market. Out of all the respondents 61.26% washing their bed net if needed, 34.38% answered that they wash the bed net once a month, 1.58% washed it once in six months, 1.58% have responded that once in a year, and 2.37% have responded that they washed it once in a year.

Table 3: Status of respondents' practices towards malaria.

Questions	Responses	Male (n=171)	%	Female (n=87)	%	Total (n=258)	%
sleep under mosquito net	Yes	139	81.29	70	80.46	209	81.01
	No	32	18.71	17	19.54	49	18.99
Do you have mosquito net?	Yes	170	99.42	86	98.85	256	99.22
	No	1	0.58	1	1.15	2	0.78
Use of mosquito coil?	Yes	15	8.77	8	9.20	23	8.91
	No	156	91.23	79	90.80	235	91.09
Born cow dung / leaves?	Yes	133	77.78	65	74.71	198	76.74
	No	38	22.22	22	25.29	60	23.26
Close window?	Yes	156	91.23	83	95.40	239	92.64
	No	15	8.77	4	4.60	19	7.36
Cover arm and legs?	Yes	167	97.66	86	98.85	253	98.06
	No	4	2.34	1	1.15	5	1.94
Boiling drinking water?	Yes	69	40.35	32	36.78	101	39.15
	No	102	59.65	55	63.22	157	60.85
Clear HH surrounding	Yes	131	76.61	61	70.11	192	74.42
	No	40	23.39	26	29.89	66	25.58
Bury mosquito sites?	Yes	150	87.72	78	89.66	228	88.37
	No	21	12.28	9	10.34	30	11.63
Spraying of DDT	Yes	87	50.88	54	62.07	141	54.65
	No	84	49.12	33	37.93	117	45.35
Use of repellent?	Yes	34	19.88	20	22.99	54	20.93

Continued.

Questions	Responses	Male (n=171)	%	Female (n=87)	%	Total (n=258)	%
Status of how acquire mosquito net (n=256)	No	137	80.12	67	77.01	204	79.07
	Free from Govt.	165	97.06	85	98.84	250	97.66
	By purchase	2	1.18	0	0.00	2	0.78
	Both	3	1.76	1	1.16	4	1.56
Frequency of ITN usage? (n=256)	Daily	105	61.76	55	63.95	160	62.50
	Rarely	28	16.47	7	8.14	35	13.67
	Peak Season	37	21.76	24	27.91	61	23.83
Do you wash bed net? (n=256)	Yes	167	98.24	86	100	253	98.83
	No	3	1.76	0	0	3	1.17
Frequency of washing bed net? (n=253)	If needed	98	58.68	57	66.28	155	61.26
	Once in a month	62	37.13	26	30.23	88	34.78
	Once in six months	4	2.40	0	0.00	4	1.58
	Once in a year	3	1.80	3	3.49	6	2.37
Modes of transmission to the diagnosis point	Foot	44	25.73	29	33.33	73	28.29
	Motor vehicle	124	72.51	56	64.37	180	69.77
	Foot & motor vehicle	3	1.75	2	2.30	5	1.94

DISCUSSION

In this study, 97.29% of respondents have heard about malaria disease and mainly through the source of television (37.60%), which is similar to the findings of previous studies.⁶⁻¹⁰ Majority of respondents (89.66%) answered that tablets can cure malaria. 28.29% of respondents go to the point of diagnosis centre by foot and 69.77% go by motor vehicle. The majority of the respondents (98.06%) have known that malaria is caused by mosquito bites. A similar study has been done by Gupta et al., Madne et al, Joshi et al, and Tyagi et al 88.37% of respondents have buried mosquito sites.^{6,11-13} Only 62.79% numbers respondents had an attitude of consulting doctors for fever in any one of the family members. A similar study was carried out by Gupta et al. and Gupta et al still they are going to traditional healers (Dishari) for a consultant as their first preference of treatment.^{6,14} Appropriate knowledge of awareness in the study is lagging, and this type of result is found by Joshi et al.¹² In this study, 74.42% of respondents had a practice of cleaning the household surrounding for the prevention of malaria disease, similar results were also found by an earlier study.¹⁵ In this study area, Dichlorodiphenyltrichloroethane (DDT) was sprayed before 3 years; it should be sprayed twice annually. Here it was also found that 98.83% of respondents are washing their mosquito net, according to them this medicated insecticide-treated net (ITN) itching to their skin and for this reason, they washed the mosquito net. Almost half of the population did not go for immediate treatment.

By considering time and resources, the present study could not recruit a large sample size. The malaria patients were selected by self-reporting.

CONCLUSION

This study entails that respondents were familiar with malaria, its symptom, and a way to prevention. This article

tries to give emphasizes on the fact that it should be purely controlled only after the strengthening of the Primary Health Centre (PHC), cleaning of uncovered breeding sites, and strengthening of manpower in the health sector. In this study most of the respondents had a good level of knowledge to eradicate malaria but attitude and practices about malaria prevention still need improvement regarding malaria, while it entails that respondents would seek the treatment not quickly if they developed symptoms. Therefore, it should be concluded that grassroots level strategies should be constructed to enhance the proper implantation and control measures to maximize the protective practices towards malaria.

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