

**ORIGINAL ARTICLE****Assessment of cases of malaria infection**

<sup>1</sup>Rajni Sharma, <sup>2</sup>Bhavesh T Patel

<sup>1</sup>Assistant Professor, Department of General Medicine, N C Medical College & Hospital, Panipat, Haryana, India;

<sup>2</sup>Assistant Professor, Department of Radio Diagnosis, N C Medical College & Hospital, Panipat, Haryana, India

**ABSTRACT:**

**Background:** Malaria is a potentially life-threatening infectious disease caused by parasitic protozoa of the genus *Plasmodium*. The present study was conducted to assess the cases of malaria infection. **Materials & Methods:** 58 cases of malaria of both genders were enrolled. Parameters such as clinical features, complications, education, occupation, family size, type of fuel use for cooking, water sources, place of night sleeping etc. was recorded. **Results:** Out of 58 patients, males were 38 and females were 20. Clinical features were fever in 58, chills in 32, sweating in 18, headache in 21, muscle aches in 27, nausea, and vomiting in 32 patients. Complications were anemia in 4, organ failure in 2, and death in 1 patient. Education was primary in 34 and secondary in 24 patients. Occupation was no work in 15, labourer in 18, business/salaried in 25 patients. Family size was 1-2 in 18 and >3 in 40 patients. Water sources was within house premises in 16 and outside house premises in 42 patients. Type of fuel used for cooking was LPG/biogas/kerosine in 46 and wood/dung in 12 cases. Place of night sleeping was inside room in 32 and outside room in 26 patients. The difference was significant ( $P < 0.05$ ). **Conclusion:** Malaria is well-established, there is widespread poverty, poor housing quality, and a lack of information about, access to, and use of preventive measures.

**Key words:** Malaria, education, occupation

**Corresponding Author:** Bhavesh T Patel, Assistant Professor, Department of Radio Diagnosis, N C Medical College & Hospital, Panipat, Haryana, India

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**INTRODUCTION**

Malaria is a potentially life-threatening infectious disease caused by parasitic protozoa of the genus *Plasmodium*. It is primarily transmitted to humans through the bite of infected female *Anopheles* mosquitoes. Once inside the human body, the parasites multiply in the liver and then infect red blood cells, leading to a range of symptoms and complications.<sup>1</sup>

Malaria is most prevalent in tropical and subtropical regions, particularly in sub-Saharan Africa, South Asia, and parts of Central and South America. The risk of malaria transmission varies by location and season. The symptoms of malaria can vary in severity and typically include fever, chills, sweating, headache, muscle aches, fatigue, nausea, and vomiting.<sup>2</sup> In severe cases, it can lead to complications such as anemia, organ failure, and death. There are several species of *Plasmodium* that can infect humans, but the most common and severe forms are caused by *Plasmodium falciparum* and *Plasmodium vivax*. *Plasmodium falciparum*, in particular, is responsible for most malaria-related deaths.<sup>3</sup>

Malaria control mainly relies on two methods: chemotherapy using chloroquine (CQ)/artemisinin-

based combination therapy (ACT) for treating malaria cases, vector control using indoor residual spray, two rounds of DDT/synthetic pyrethroids annually, insecticide-treated bed nets (ITNs), or long lasting insecticide-treated nets (LLINs), and bed nets treated with insecticide.<sup>4</sup> One of the challenges in reducing the prevalence of malaria is that a variety of distinct elements work together to maintain its transmission, which is exacerbated by socio-demographic and socio-economic aspects related to malaria. The variations in malaria incidence are substantially influenced by housing conditions and environmental factors.<sup>5</sup> The present study was conducted to assess cases of malaria infection.

**MATERIALS & METHODS**

The present study consisted of 58 cases of malaria of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Parameters such as clinical features, complications, education, occupation, family size, type of fuel use for cooking, water sources, place of night sleeping etc. was recorded. Data thus obtained were subjected to statistical analysis. P value  $< 0.05$  was considered significant.

## RESULTS

**Table I Distribution of patients**

Total- 58		
Gender	Male	Female
Number	38	20

Table I shows that out of 58 patients, males were 38 and females were 20.

**Table II Clinical features and complications**

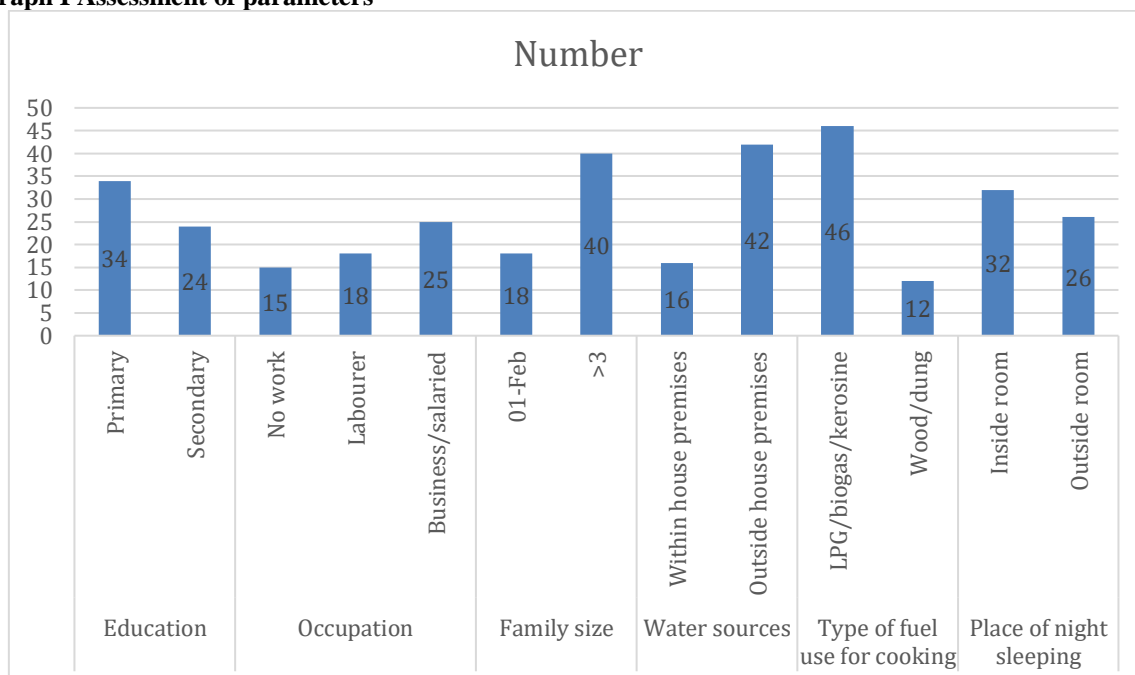
parameters	Variables	Number	P value
Clinical features	fever	58	0.17
	chills	32	
	sweating	18	
	Headache	21	
	muscle aches	27	
	Nausea/ vomiting	32	
complications	Anaemia	4	0.08
	organ failure	2	
	death	1	

Table II shows that clinical features were fever in 58, chills in 32, sweating in 18, headache in 21, muscle aches in 27, nausea, and vomiting in 32 patients. Complications were anemia in 4, organ failure in 2, and death in 1 patient. The difference was significant ( $P < 0.05$ ).

**Table III Assessment of parameters**

Parameters	Variables	Number	P value
Education	Primary	34	0.05
	Secondary	24	
Occupation	No work	15	0.91
	Labourer	18	
	Business/salaried	25	
Family size	1-2	18	0.01
	>3	40	
Water sources	Within house premises	16	0.01
	Outside house premises	42	
Type of fuel use for cooking	LPG/biogas/kerosine	46	0.01
	Wood/dung	12	
Place of night sleeping	Inside room	32	0.09
	Outside room	26	

Table III, graph I shows that education was primary in 34 and secondary in 24 patients. Occupation was no work in 15, labourer in 18, business/salaried in 25 patients. Family size was 1-2 in 18 and >3 in 40 patients. Water sources was within house premises in 16 and outside house premises in 42 patients. Type of fuel used for cooking was LPG/biogas/kerosine in 46 and wood/dung in 12 cases. Place of night sleeping was inside room in 32 and outside room in 26 patients. The difference was significant ( $P < 0.05$ ).

**Graph I Assessment of parameters**

## DISCUSSION

Malaria is primarily transmitted through the bite of infected female *Anopheles* mosquitoes.<sup>6,7</sup> When an infected mosquito bites a person, it injects sporozoites (a form of the parasite) into the bloodstream, which then travel to the liver and multiply.<sup>8,9</sup> Preventive measures include the use of insecticide-treated bed nets, indoor residual spraying with insecticides, and taking antimalarial medications for travellers to endemic areas.<sup>10,11</sup> Vaccines for malaria are also in development. Malaria can be diagnosed through blood tests that detect the presence of the parasite or its genetic material in the bloodstream. Rapid diagnostic tests are often used in endemic areas for quick diagnosis.<sup>12,13</sup> The present study was conducted to assess cases of malaria infection.

We found that out of 58 patients, males were 38 and females were 20. Clinical features were fever in 58, chills in 32, sweating in 18, headache in 21, muscle aches in 27, nausea, and vomiting in 32 patients. Complications were anemia in 4, organ failure in 2, and death in 1 patient. Sharma et al<sup>14</sup> comprised of 7117 households with an average family size of five members. fortnightly fever surveys were conducted in all villages to assess prevalence of malaria infection in the community. The distinct univariate and multivariate logistic regression models were fitted on the data set. The important socio-demographic risk factors like age of household head, social group, occupation and family size; socio-economic factors like type of walls of house, place of drinking water source, irrigated land, cash crop; and behavioural variables like place of sleeping, use of bed nets, etc. were found significantly associated with malaria in univariate analyses. In multivariate analyses only social groups, family size, type of walls of house, and

place of sleeping had strong significant association with prevalence of malaria.

We found that education was primary in 34 and secondary in 24 patients. Occupation was no work in 15, labourer in 18, business/salaried in 25 patients. Family size was 1-2 in 18 and >3 in 40 patients. Water sources was within house premises in 16 and outside house premises in 42 patients. Type of fuel used for cooking was LPG/biogas/kerosine in 46 and wood/dung in 12 cases. Place of night sleeping was inside room in 32 and outside room in 26 patients. Ghebreyesus et al<sup>15</sup> identified risk factors responsible for such variations in a hypoendemic highland malaria setting: 2114 children aged < 10 years living in 6 villages situated close to small dams at altitudes from 1775 to 2175 m were monitored. Among 14 factors analysed, use of irrigated land (rate ratio[RR] = 2.68, 95% CI 1.64-4.38), earth roof (RR = 2.15, 95% CI 1.31-3.52), animals sleeping in the house (RR = 1.92, 95% CI 1.29-2.85), windows (RR = 1.84, 95% CI 1.30-2.63), open eaves (RR = 1.85, 95% CI 1.19-2.88), no separate kitchen (RR = 1.57, 95% CI 1.10-2.23), and 1 sleeping room (RR = 1.52, 95% CI 1.05-2.20), were significantly associated with malaria. The proportion of infection among children exposed to one or no risk factor was 2.1%, increasing with the number of risk factors and reaching 29.4% with 5 or more.

The limitation of the study is the small sample size.

## CONCLUSION

Authors found that malaria is well-established, there is widespread poverty, poor housing quality, and a lack of information about, access to, and use of preventive measures.

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