

# ALERTNESS REGARDING MALARIA IN RURAL COMMUNITY OF VADODARA

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Consultants

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## ABSTRACT

**Background:** Malaria remains a major cause of morbidity and mortality in tropical and subtropical regions of the world, despite decades of malaria control efforts.

**Aims & Objective:** This study looked into the local community understanding of malaria treatment-seeking patterns, preventive measures and practices in rural area of Vadodara.

**Material and Methods:** A descriptive cross-sectional survey was carried out in rural area of Vadodara. A structured questionnaire was administered to 168 randomly selected households. Only one adult person was interviewed per household. The interviewees were the heads of households and in the absence of the heads of households responsible adults above 18 years were interviewed.

**Results:** A substantial number of research participants showed reasonable information of malaria, including correct association between malaria and mosquito bites, its potential fatal consequences and proper treatment practices. 84.1% (n = 168) of the respondents considered that they consult treatment within 24 hours of onset of malaria symptoms, with health facilities as their first treatment option.

**Conclusion:** Despite fair knowledge of malaria in rural area of Vadodara, there is a need for improving the availability of information through the preferred community channels as well as professional health routes.

**KEY-WORDS:** Malaria; Information; Health Facility; Prevention

## Introduction

Malaria remains a major cause of morbidity and mortality in tropical and subtropical regions of the world, despite decades of malaria control efforts. According to the World Malaria Report 2010, the global prevalence of the disease was estimated at 225 million cases and 7,81,000 deaths in 2009.<sup>[1]</sup> In 2000, malaria was estimated to contribute to the loss of nearly 45 million disability-adjusted life years (DALYs), which represents about 13% of all infectious diseases.<sup>[2]</sup> The impact of seasonal and unstable malaria transmission is very well known.<sup>[3]</sup> If low transmission levels, immunity to malaria is not thought to exist and infected individuals are therefore prone to severe disease. Efforts has maintained a successful control programme, with control strategies including rapid detection and treatment of confirmed malaria cases at Primary Health Care clinics and vector control through Indoor Residual

Spray(IRS) with insecticides and focal larviciding.<sup>[4]</sup> Plasmodium falciparum accounts for the majority of the cases, transmitted mainly by female Anopheles.<sup>[5]</sup> Large-scale malaria control operations based on housespraying with DDT (dichlorodiphenyltrichloroethane) were initiated leading to a decline in the level of malaria transmission and elimination of the major malaria vectors Anopheles.<sup>[6]</sup> However, following several identified environmental concerns and social resistance (re-plastering over DDT and refusing household access) due to the increased incidence of bedbugs associated with the use of DDT.<sup>[7]</sup> Malarious provinces discontinued the use of DDT in favour of synthetic pyrethroid insecticides in 1996.<sup>[8]</sup>

The discontinuation of DDT coincided with a sudden reappearance of the malaria vector female Anopheles<sup>[9]</sup> and an upsurge in malaria cases<sup>[10]</sup>. In the absence of data exploring the relationship

between the high incidence of malaria and the use of DDT during that period, several possible factors such as climate change, vector biology and behaviour, drug and insecticide resistance and flawed insecticide application were put forward in an attempt to quantify the underlying reasons for the increase.<sup>[11]</sup> In view of these trends, Efforts had to revert to DDT as an insecticide of choice for IRS and change the first-line treatment from sulphadoxine-pyrimethamine (SP) to Coartem.<sup>[12]</sup> Although malaria vector control through IRS, Efforts has proved to be successful in reducing malaria transmission.<sup>[8]</sup> The importance of analysis of data on the prevalence of disease in relation to expanded control interventions is well documented in other malaria endemic areas.<sup>[13]</sup> Understanding the relationship between climate, control methods and malaria has been shown to assist in providing early warning in malaria increases or potential outbreaks as well as in improving the control programme.<sup>[14,15]</sup>

In most other countries, malaria has been greatly reduced through the use of indoor residual spraying complemented by effective case management.<sup>[16]</sup> Elimination requires great focus on malaria transmission foci at a local level and community understanding of malaria can greatly improve the realization and sustainability of this strategy. This study investigates the local community understanding of malaria, treatment-seeking patterns, preventive measures and practices in rural area of Vadodara.

## Materials and Methods

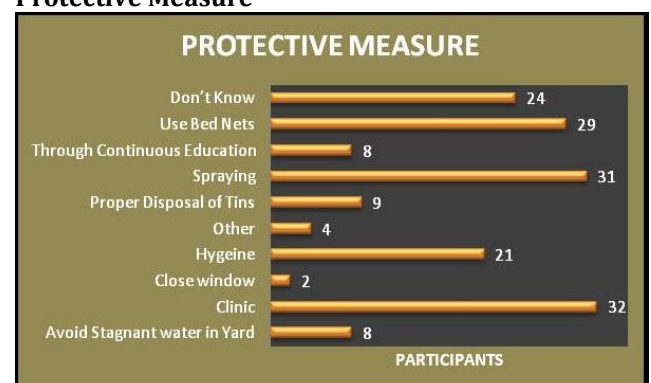
The study was a descriptive cross-sectional survey. A structured questionnaire was designed. The questionnaire comprised treatment seeking patterns, preventive measures and practices. The questionnaire was prepared into Gujarati & English. The questionnaire was administered to 168 randomly selected households for two weeks in July 2009. The head of household or a responsible adult was interviewed. Only one person per household was interviewed. All participants gave verbal consent. Data collected were double entered into Microsoft Excel database.

## Results

The study participants consisted of 48.4% males and 51.6% females. However, only adults above the age of 18 years were interviewed. Of 168 households surveyed 154 (91.1%) of the respondents had heard about malaria with almost all (99.7%, n=153) of them correctly associating malaria with mosquito bites. All research participants that had heard about malaria demonstrated appropriate knowledge of and attitudes towards malaria by stating that it could kill if it is not treated. The participants gave a wide range of sources of malaria information as well as their preferences. Health facilities were the most prominent sources and community meetings were the second most preferred sources of information.

Malaria treatment-seeking behavior and prevention knowledge about malaria treatment was high with 97.2% (n = 168) of the respondents stating that they would seek treatment in health facilities and 2.8% mentioned primary health center. Regarding households' promptness in seeking malaria treatment 84.1% (n = 168) stated that they would seek treatment within 24 hours of onset of malaria symptoms, with 9.8% reporting a delay of two to three days before seeking treatment. The remaining 6.1% presented no prompt treatment-seeking plan.

**Figure-1: Respondents Information about Malaria Protective Measure**

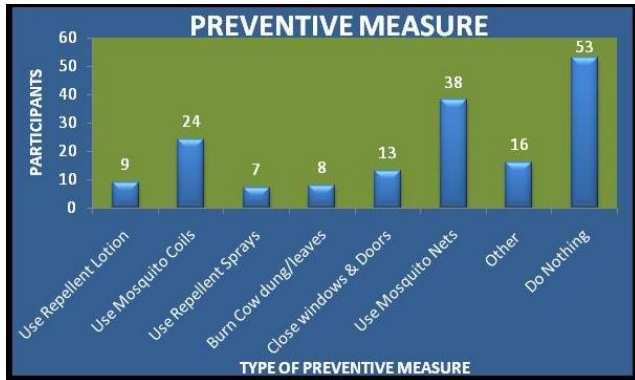


Generally, knowledge about malaria prevention among the participants was high 68% (n = 168), and only a small proportion (18.7%) said malaria cannot be prevented and the remaining 13.3% of the participants did not know whether malaria is preventable. Respondents mentioned that clinics, vector control, hygiene, avoiding stagnant water

in the yard, proper disposal of tins, continuous education and closing windows could help prevent Malaria (Figure 1).

With regard to personal protective measures some participants stated that they use bed nets followed by mosquito coils and to a less extent the burning of cow dung/leaves, repellents sprays and lotion, but a substantial number of them did not use anything (Figure 2).

**Figure-2: Respondents information about Malaria Preventive Measure**



## Discussion

The potential contribution of Awareness to malaria research and control has not received much attention in most rural area of Vadodara. This is the study that has been carried out to provide baseline data about malaria related information at community level. The results showed that most people had information about malaria. The most important source of information is health facilities. There was little information coming from the preferred source such as traditional community district meetings. Hearing about malaria is not enough, but should be seen as a foundation through which a whole range of issues about malaria should be understood, for example, malaria transmission, signs and symptoms, prevention and treatment. In this study, almost all (99.7%) of those who had heard about malaria made correct association between malaria and mosquito bite. These are encouraging results when compared to only 34% of people who made correct association in Zanzibar.<sup>[17]</sup> The analysis also showed that most respondents seek treatment in the health facilities. Contrary to most sub-Saharan African countries, where treatment is sought mainly in non-public sources<sup>[18-21]</sup> this difference could

probably be attributed to better quality and accessibility of health facilities in rural area of Vadodara.

Another interesting finding was that the majority (84.1%) of respondents in this study stated that they would seek treatment within 24 hours of onset of malaria symptoms. This exceeds the target defined by the Abuja summit on malaria, which says, At least 60% of those suffering from malaria should seek treatment within 24 hours of the onset of symptoms.<sup>[22]</sup> Observations regarding preventive measures showed that most respondents believed that malaria is preventable, and mentioned, clinic, spraying and the use of bed nets as key malaria preventive measures.

The study found that 87.2% of the households had been sprayed during 2009 malaria season. This is in agreement with WHO guidelines on IRS coverage which recommends that it should be more than 80% within the targeted communities.<sup>[23]</sup> Only a small proportion of respondents were not happy about IRS. Interestingly there was also bed net coverage (17.3%), especially given the fact that IRS is the mainstay of malaria vector control in rural area of Vadodara. A number of respondents stated that they did not use bed nets because of low mosquito population density and low disease incidence. Given the changing malaria situation in the country continued efforts are needed to emphasize the benefits of operational vector control activities for eliminating localized residual foci of transmission through community health promotion.

## Conclusion

Most respondents demonstrated an understanding of malaria transmission and its devastating results. Furthermore, given the relatively moderate possession of bed net there is a requirement for future studies. Although awareness related to malaria in the study area is reasonable. The malaria preventive should identify crucial socio-cultural and socio-economic indicators for monitoring progress. It is therefore recommended for baseline information about local communities' perceptions and practices about malaria.

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