

## Original Research Article

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# Awareness of ASHA workers of low endemic area regarding malaria: a qualitative analysis

Nidhi Pathak<sup>1</sup>, Sulakshana S. Baliga<sup>2\*</sup>, Padmaja R. Valvekar<sup>3</sup>

Department of Community Medicine, J. N. Medical College, KLE Academy of Higher Education and Research, Belagavi, Karnataka, India

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**\*Correspondence:**

Dr. Sulakshana S. Baliga,

E-mail: [baliga1983@rediffmail.com](mailto:baliga1983@rediffmail.com)

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## ABSTRACT

**Background:** Under the community-based approach, Accredited Social Health Activist (ASHA) is designated to address early detection, management and prevention of malaria at the community level. Majority of ASHAs in high risk areas are aptly trained for these tasks but ASHAs in many low endemic areas are insufficiently trained and hence may lack awareness about malaria and its prevention and surveillance. New operational guidelines for malaria elimination by Govt. of India has tasked ASHAs of category 1 areas like Belagavi for passive case detection and contact tracing apart from spreading health awareness about its prevention. Good knowledge and practices regarding malaria among ASHA workers is thus pertinent for efficient case detection and surveillance at grass root levels. The objective of the study was to assess the awareness of ASHA workers regarding malaria.

**Methods:** A qualitative study was conducted from January to June 2017 using eight focus group discussions among 50 ASHA workers of rural area of Belagavi selected by purposive sampling. The responses were open ended and were recorded in same sequential manner after being translated to English from local language. Each interview transcript was read several times, and meaning units were extracted independently.

**Results:** Findings revealed that majority of them had poor knowledge regarding collection of blood smears and none of them were aware about anti-malarials. Only half of ASHA workers were aware of vector control activities, very few were aware about anti-larval activities while less than half were aware about source reduction activities.

**Conclusions:** The discussions highlighted a need for refresher training for effective capacity building of grassroot health workers especially in low endemic area.

**Keywords:** Focus group discussion, Qualitative, Malaria, ASHA, Awareness, Perception

## INTRODUCTION

Globally, malaria control programmes have experimented with innovative strategies aligned with the healthcare delivery system status of each country.<sup>1</sup> One of the foremost strategies involves the introduction of community-based management of malaria through the deployment of community health workers.<sup>2</sup> During the last decade, India's malaria control strategies under the aegis of the National Vector Borne Disease Control Programme

(NVBDCP) introduced this strategy among other innovations to strengthen its fight against malaria.<sup>3</sup>

Under the community-based approach, Accredited Social Health Activist (ASHA) has an important role in malaria control. They are designated to address early detection, treatment and timely referral of malaria cases and prevention of malaria at the community level thus saving many lives.<sup>3</sup> ASHAs are also trained to act as health educators to spread awareness in the community regarding preventive measures. The training is intended

to improve the diagnostic skills of the ASHAs, accuracy of their reporting and to minimize the costs due to drug wastage. They also receive performance-based incentives for conducting home visits for treatment, tracking fever cases and submitting blood slides to the health centres. Majority of ASHAs in high risk areas are aptly trained for these tasks and involved but ASHAs in low endemic areas are insufficiently trained and hence may lack awareness about malaria thereby impacting its prevention and surveillance.

WHO estimates that India accounts for 89% of all malaria cases in South-East Asia. About 95% of the Indian population resides in malaria endemic areas.<sup>4</sup> According to recently released operational guidelines for malaria elimination by Govt. of India in 2016, Karnataka has API<1 with only 2 districts (Uttar Kannada, Udupi) with API>1.<sup>5-7</sup> Belagavi district in North Karnataka which has been a part of Phase - II of World Bank Project for malaria elimination falls in category 1 marked for elimination phase with a target to enter into Category 0 by 2018.<sup>7-9</sup>

Even though substantial reduction in malaria cases has occurred in recent years in Belagavi, it is still one step away from the current "sustained control" effort to the "malaria elimination" target. One major challenge in achieving malaria elimination is to prevent malaria resurgence. This is especially important as Belagavi is surrounded by highly endemic areas like Goa, Uttar Kannada and other category 2 areas and thus reports many imported cases in the area which in turn lead to other local cases.

Thus, for malaria elimination Govt. of India has tasked ASHAs of category 1 areas for passive case detection and contact tracing apart from spreading health awareness about its prevention.<sup>6</sup> Good knowledge and practices regarding malaria among ASHA workers is thus pertinent for efficient case detection and surveillance at grass root levels.

### **Objective**

To assess the awareness of ASHA workers regarding malaria.

## **METHODS**

### **Study setting**

This study was conducted in rural area of Belagavi district of North Karnataka. Field practice area of Primary Health Centre Kinaye itself is a low endemic area for malaria with API of less than 1 but is adjacent to malaria endemic Goa.

### **Study design**

Qualitative study using focus group discussion.

### **Study duration**

6 months from 1 January 2017 to 30 June 2017.

### **Study participants**

50 ASHA workers working in the field practice of Primary Health Centre attached to Department of Community Medicine, J.N. Medical College, KLE Academy of Higher Education and Research, Belagavi.

**Sampling method:** Purposive sampling.

### **Data collection**

The interview guide was pilot tested on two informants and checked for validity by reviewing the answers given by the informants. Minor adjustments were made after the pilot testing and throughout the study based on experiences from previous interviews. Participants were interviewed in eight focus group discussions with 6-7 participants in each group. The discussions were conducted in the Community Hall of Primary Health Centre by the moderator along with one interpreter, note taker and recorder. The focus group discussions lasted for 45 to 60 minutes. The ASHA workers were invited to participate in discussion for each aspect of malaria without any prompting. The responses were open ended and were recorded in same sequential manner and reviewed by the interviewers later. Non-verbal responses and communications were also noted. With permission from participants, each interview was audio-recorded for the accuracy of transcription and analysis. Data collection was continued until no new themes were emerging.

### **Data analysis**

Content analysis was used to analyse the data. The interviews were transcribed in local language by the interpreter, and the transcriptions were then translated into English and reviewed by the researchers, following each focus group discussion. Any unclear items were discussed with the interpreter and misunderstandings were clarified. Each interview transcript was read several times, and meaning units were extracted independently by three of the researchers and categorized into themes.

### **Informed consent**

Written informed consent was obtained from all participants before starting the interview. In addition, a meeting was held before the start of the study where all ASHAs involved were informed about the purpose of the study and method to participate in focus group discussions.

### **Outcome**

Following data analysis, awareness and perception of ASHA workers in four main themes areas emerged from the data— general information about causation,

recognition and diagnosis, treatment, referral and preventive measures.

## RESULTS

Eight focus group discussions were conducted among 50 ASHA workers belonging to 9 sub-centres. Mean age of study participants was 35.06 years. Almost two-third had studied till 10<sup>th</sup> standard. The minimum experience of the workers was one year and more than half of them had experience of less than five years. Eighteen ASHA workers had experience of less than two years. Only nine ASHA workers out of fifty recalled having ever undergone refresher training for malaria.

The discussions opened with a review of malaria in the community under study and proceeded to cover various aspects of malaria ranging from its causation to prevention.

### **General information about malaria causation**

Almost all participants were aware that malaria is a vector-borne disease but were unaware it is caused by Anopheles mosquito per se.

Participants were of the opinion that breeding occurs when mosquito eggs are present in dirty water.

“I think mosquito breeds in dirt or garbage or *septic* (sewage water) as they like dirty water”

(*Informant 4, Group 3*)

Participants in general were of the view that mosquitoes bite in evening time after 6 pm. However, few ASHA workers opined that mosquito can bite anytime.

“Mosquitoes can bite anytime of the day but during the day it hides in *jhaadi* (bushes) and come out only in morning and evening for food”

(*Informant 2, Group 2*)

### **Recognition and diagnosis**

All interviewed ASHA workers said that malaria presents as fever with chills accompanied by other constitutional symptoms like malaise, headache, leg cramps, joint pain, etc. It was clear to the participants that all fever cases are not malaria.

“Fever goes in about 1 hr after giving medication (paracetamol) but comes back again....”

(*Informant 2, Group 3*)

ASHA workers viewed malaria as a mild illness and had no idea regarding warning signs of severe malaria.

“..... don't know about severe malaria or its warning signs as we don't have such mosquitoes in our area”

(*Informant 3, Group 6*)

All ASHA workers had the belief that blood test is necessary for diagnosis although none of them had any knowledge regarding peripheral smear preparation.

“Only theoretical training was done and although slides were provided, we were asked not to use it as it was the job of male health worker”

(*Informant 1, Group 2*)

However, they acknowledged that if trained adequately they can help in early diagnosis and surveillance of malaria.

Almost half didn't know what is to be seen in the slides as they have never seen any slide in their experience as ASHA worker.

According to one ASHA worker,

“..... first slide is to check malaria virus and second to check haemoglobin. Other ASHA workers said that third slide can also be taken to check presence of chikungunya, dengue, etc”

(*Informant 7, Group 3*), (*Informant 5, Group 2*)

Some of the participants felt it is very much necessary to screen the entire street near the diagnosed malaria case irrespective of presence of fever while others were of the opinion that only symptomatic family members especially elderly and children should be screened.

Very few of them knew other diagnostic methods like rapid diagnostic kits.

“RDT works like urine pregnancy kit (Nischay) but PHC took it back it was too expensive”

(*Informant 5, Group 4*)

### **Treatment and referral**

Half say they don't know name, dose and duration of medicine even though they have seen patient taking medicine in front of them although on prompting half of them said they have heard about chloroquine. None of the ASHA workers had any knowledge about any other treatment modality.

“Have seen patient taking some red tablet.....”

(*Informant 4, Group 1*)

“.....tablet is not paracetamol but some other tablet”

(*Informant 1, Group 8*)

“We are not provided with any medicines for malaria as our job is only to inform male or female health worker. It is the job of male health worker to provide medicine”

(*Informant 6, Group 5*)

Despite lack of knowledge about treatment of malaria, almost all the ASHA workers referred the patients to PHC. Few of them even felt that they need not refer the patient to hospital.

“Patient themselves come to PHC, we need not refer as they think we are not doctors, so they don’t listen to us.”

(*Informant 2, Group 1*)

### **Prevention**

Knowledge regarding malaria prevention was better compared to other aspects of malaria.

ASHA workers acknowledged that use of mosquito coils, homemade fumes, stagnant water removal, mosquito mats, fast cards, window screening are the most commonly used methods to protect against malaria.

“..... daily bathing, clean clothes and washing mosquito nets, less dirt less mosquito bite”

(*Informant 4, Group 5*)

Half of them emphasized that bleaching powder should be put in water to kill the mosquitoes.

“Boiling water or straining the water with cloth kills the kitaanu (larva).”

(*Informant 6, Group 7*)

Most of the health workers knew about fogging as it is routinely done.

“Male/Female health worker routinely request panchayat for fogging but they do it only 1-2 times in a year when the mosquito number increases in the area.”

(*Informant 2, Group 5*)

“..... gutter cleaning, clean streets, keeping house clean and filling of holes in streets by panchayat reduce mosquitoes”

(*Informant 5, Group 6*)

In general, some of them had an idea about newer methods like use of fishes, electric bat, ILNs etc. in malaria control. Only half of ASHA workers were aware of vector control activities, very few were aware about anti-larval activities while less than half were aware about correct source reduction activities.

## **DISCUSSION**

This study indicates poor awareness among ASHA workers even though sporadic cases of malaria still occur in their field area. In general, trained workers and ones with more experience were more informative than untrained and newer recruits.

Reduction in malaria burden in the past few years may have led to poor work profile with respect to malaria. Previous studies have also highlighted difference in malaria awareness among grass root workers between endemic and non-endemic areas.<sup>10</sup> Another important reason could be overloading of ASHAs with introduction of many recently launched maternal and child health programmes like Mission Indradhanush, PMSMA and Measles Rubella Campaign.

Majority of workers said that they never underwent any training related to malaria. Similar findings were elicited in a study done in Vadodara in 2015 where health workers reported that no training was given any time during their working period except only once at the time of recruitment.<sup>11</sup> It could also be a recall bias as due to lesser practical implementation because of less cases in the area, workers have forgotten about the training. It is also possible that district health authorities in low endemic area prioritized other health programmes in limited training time span. Some ASHA workers in this study expressed a need for further training to improve their current skills and in turn promote the appropriate treatment of malaria. These findings are in agreement with the previous studies.<sup>12</sup>

The participants were well aware that mosquitoes transmitted malaria, but some also mentioned other causes of malaria like dirt, poor hygiene, food borne, etc. It was observed that most participants were unable to draw a correct link between the environment and mosquito breeding on one hand, and malaria transmission on the other hand.

ASHA are to be involved in diagnosis of malaria cases on a day to day basis- from screening of suspected cases using RDT/blood slides to contact tracing.<sup>13</sup> Early detection and treatment of all cases of malaria to prevent onward transmission is a key intervention for malaria elimination in category 1 areas.<sup>5</sup> The present study brought out the lacuna in this most important role of ASHA workers in malaria control. Lack of practical training and insufficient knowledge regarding diagnostic methods including blood smear preparation was very much apparent. Such poor diagnostic skills of grass root

workers may lead to missing of cases and hence, under reporting of actual mortality, morbidity and incidence rates.<sup>13</sup>

The community depend on ASHA for advice and treatment of different diseases, malaria being one of them. ASHA should educate the community for early recognition of the signs and symptoms of malaria so that they receive prompt treatment.<sup>14</sup> But in our study the ASHA workers were very inapt to handle malaria cases. As they had poor knowledge about the drugs, dosage or treatment of malaria, they just referred the patient to nearest health centre. Like previous studies done in Orissa, none of the participants knew that jaundice, acute renal failure, respiratory distress, bleeding disorders or convulsions could be caused due to malaria. Their below average knowledge about warning signs of malaria made them ill equipped to handle prompt referral to hospitals required in such cases.<sup>15</sup>

As part of operational guidelines for malaria elimination ASHA workers should spread awareness about various preventive measure in the community- from source reduction to fogging, larvivorous fishes and insecticide treated nets (ITNs)/long-lasting impregnated nets (LLINs).<sup>7</sup> In our study the participants had very poor knowledge about ILNs though they had awareness about source reduction, spraying and other measures. However, it was felt that the awareness was not enough to enable them impart health education to the public at large pertaining to prevention and control of malaria.

Lastly, our study seems to support findings of a descriptive study done among grass root workers in Rwanda<sup>16</sup> where awareness was found to be significantly associated with their practices regarding malaria diagnosis, treatment and control.

## CONCLUSION

Lack of hands on refresher training among the ASHA workers, led to their poor awareness about the cause, symptoms, diagnosis and treatment for malaria. However, majority of them were aware about the preventive measures used in their area.

### Strengths and limitations

A simple cross-sectional study could have missed out some salient features of malaria in the questionnaire leaving many areas of knowledge among ASHA workers unexplored. The present study used focus group discussion which provided for greater depth of discussion.

Although full care was taken during translation to English, it could potentially lead to a loss of meaning. The study was done among ASHA workers of a single area so external validity of the results is questionable.

### Recommendations

The discussions highlighted a need for refresher training for effective capacity building of ASHA workers especially in low endemic area. It is pertinent that such training has more practical hands-on approach. Appointment of more ASHA workers is also necessary to limit the population catered by each ASHA worker and help them deliver the service effectively. Further studies can be undertaken to address the challenges faced by health workers in low-endemic areas and also quantify their poor awareness as a barrier to malaria elimination. Findings of such studies can be incorporated in public health interventions to help attain malaria elimination.

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