

## ORIGINAL RESEARCH



# Community health priorities: Lessons for malaria prevention from Balaka district, Malawi

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## Abstract

### Introduction

Communication to address priority health challenges typically draws on epidemiological research in conjunction with referencing global and country strategies. While community-level perspectives on health challenges typically align with national priorities, nuances and barriers that constrain health response may be less well known. To deepen understanding of the relation between situational aspects of health and ways of making meaning, community insights into health priorities were explored.

### Methods

Action Media, an established participatory research methodology for informing health communication design and strategy, was undertaken with parents of children under 5 in Balaka District, Malawi.

### Results

Participants identified malaria as a priority concern in their community. While it was reported that there was strong commitment to consistent use of long lasting insecticide treated nets, there was frustration that malaria incidence remained high. It was observed that risk of exposure to mosquito bites was increased as a result of chores and other activities that extended into the early evenings prior to retiring to bed under a bed net. Bed bug infestations were said to be a common and ongoing concern. Some community members alleviated discomfort by abandoning their beds and sleeping outside without adequate protection while others boiled their bed nets to remove bed bugs. Accessing distant health facilities when ill with malaria was difficult for adults and children. Participants identified the need for effective strategies to address these concerns including accessing mosquito repellent, eradicating bed bugs, treating malaria locally and collaborating in malaria control activities.

### Conclusions

Meeting targets for malaria prevention requires consideration of contextual factors that undermine effective malaria prevention in affected communities. Such factors are not immediately apparent through epidemiological data. Regularly assessing contextual challenges in high malaria incidence areas provides opportunities to understand gaps, to refine intervention strategies and to inform communication programming.

## Introduction

Exposure to ill health at a population level is determined by a range of circumstances including vectors of disease, geographic locale, living circumstances and capacity to address risk. Addressing risk includes consideration of the relation between knowledge, context and culture towards support for individual or collective action<sup>1</sup>. Communication campaigns and activities to promote health employ diverse strategies. These include individual-focused approaches that draw on biomedical frameworks and rationalist assumptions about health behavior, approaches that emphasize social learning through role modeling and diffusion of technologies or concepts, and approaches that consider audience participation and action towards social mobilization<sup>2,3,4</sup>. Success of communication interventions depends on sound understanding of health challenges of audiences in conjunction with assessing the reception environment with regard to behavioral and socio-cultural concerns.

There is evidence to suggest that health communication is strengthened by approaches that explore health challenges in conjunction with participatory engagement activities to address understanding of health at community level. Participatory approaches consider health vulnerabilities in context, and take into account the potential for audiences to move from being recipients of information to empowered actors capable of dialogue, reflection and action in relation

to their own health. To support understanding of health priorities at community level, a formative participatory study was undertaken with parents of children under 5 in the Balaka district of Malawi.

## Methods

Action Media is an established methodology for health communication that derives insight into audience perspectives, fosters reflection and problem-solving around health issues, and informs design of communication strategies and interventions. Action Media provides an alternative to top-down 'targeted' approaches that may not adequately consider the extent of health knowledge, the dimensions of the enabling context for health, or the specific health challenges and capabilities of intended audiences<sup>6</sup>. Working with small groups' representative of broader audience characteristics, Action Media findings have been applied to inform diverse national and regional health communication products, activities, strategies and campaigns around the world. Employing a multi-session engagement process, the approach goes beyond conventional qualitative techniques such as focus group discussions. Relevance of findings to culturally and contextually similar audiences emerges as a product of the deeper exploration of health challenges in relation to locale, cultural meanings attached to health, and strengthening of commitment to health promotive action through communication and other support.

Action Media was utilized to support the Malawi Ministry of Health's *Moyo ndi Mpamba* (Life is Precious) public awareness campaign. The research team included representatives from the Ministry of Health and non-governmental organizations active in health communication. Balaka District was selected on the basis of being generally representative of similar districts in the south of Malawi that have predominantly rural populations and that face a range of similar health challenges. Community participants were selected from the rural area surrounding Namikombe Primary School with the consent of the local Chief. The participant group comprised 14 men and women aged from 20 to 35 years. All were parents of children under 5 and at least half of the participants had two or more children. All were rural farmers. As this was a formative study to inform programme design, ethical review was not mandatory. Nonetheless, the study was guided by a research protocol that included an ethics component consistent with international guidelines. School classrooms were utilized as a venue for discussions and collaborative engagement took place over four days. At the outset, participants were provided with information on the planned activities and informed written consent was required. Activities to foster trust and open communication followed. Participants initially explored community values and health concerns in general, and then undertook participatory activities including large group discussions and independent small group work to unpack emerging issues and to deepen understanding of potential solutions. Linguistic, aesthetic and cultural perspectives were integrated through identifying locally relevant slogans and idioms, as well as developing songs, dance and artwork to support culturally meaningful communication. Researchers also conducted a brief community visit to verify findings emerging from the participatory sessions.

## Results

Participants provided insight into their daily activities, noting that peaceful community and family life brought happiness, with communal activities such as traditional dance, gospel music, watching football and community banking being seen as supportive to wellbeing. Illness and death of family members brought hardship. Three priority health issues were identified – long distances to health facilities, lack of potable water and malaria. Malaria was discussed in detail and these findings are presented below.

### Knowledge about malaria

Participants demonstrated accurate knowledge of malaria including symptoms and control measures. It was reported that children and adults in the community fell ill regularly with malaria despite the acknowledged relevance and widespread and committed use of Long Lasting Insecticidal Nets (LLINs) by community members.

### Exposure to mosquito bites

The contradiction between perceived high levels of malaria incidence and widespread bed net use was attributed to exposure to mosquitos before going to bed, disruption of LLIN use as a result of infestations of bed bugs, and belief that the chemicals for treating nets were neither effective nor long-acting, and that mosquito might be able to pass through the fabric of the nets. There was particular concern that prevention of exposure to malaria was not guaranteed by consistent bed net use, and there did not appear to be any alternative options.

In small group discussions, it was noted that it was likely that people were being bitten by mosquitos in the early evening prior to going to bed, and therefore prior to LLIN use. This point was reinforced during the community visit, where a male community member observed:

*“We suspect it is the mosquito bites we get before we go to bed. We like chatting as a community in the early evening and we might have our supper late due to chores or [coming back late from] harvesting. If we are late with supper, we go to bed late and we suspect that it is in that moment we get malaria”* (Male community member, Community visit, Day 3).

### Bed bug infestations

Bed bug infestations had been ongoing in the community over the past four years and although the matter had been raised with the local chief, no concrete solution had emerged. Apart from discomfort from bites, bed bugs could be seen gathered on mosquito nets in the mornings, indicating that the chemicals on LLINs did not have any effect on these insects. Some community members were boiling their bed nets to kill the bed bugs, while others abandoned their bedding and slept outside without the benefit of an LLIN.

### Malaria prevention and treatment

It was noted that there was a lack of community commitment to managing potential mosquito breeding areas and that such omissions increased the risks of malaria for community members as a whole. Illness of a child due to malaria was stressful for parents, while malaria infection of parents interrupted domestic work, reduced capacity for childcare, increased expenses due to costs of transport for health service access, constrained farming activities and had negative impacts on household, community and national development.

Long distances to health facilities, transport costs and environmental factors such as flooding discouraged access to treatment and resulted in a situation where *“you can even die on the way to the clinic”* (Participant, Male Group, Session 2, Day 1)

### Potentials for action

There was frustration that there did not appear to be anything that could immediately be done to address the factors identified as increasing malaria risk, even though the government recognized that malaria was a *“killer disease”*. While participants did not question the benefits of LLINs, the following points emerged through small group discussions and large group feedback sessions:

- Chemicals used on LLINs should be improved.
- Insect repellent should be made available to prevent exposure to mosquito bites in the early evenings.
- Chemicals to eradicate bed bugs should be made available.
- Health Surveillance Assistants (HSAs) should be allowed to administer malaria treatment in the community rather than requiring persons ill with malaria to travel to distant health facilities.
- Community members should work together to clear swampy areas and all should be responsible for ensuring that pools of stagnant water around households and in the community should be cleared.
- Drawing in village headmen and the local chief was likely to bolster various prevention efforts.

### Supportive communication

Critical reflection emerging through the Action Media process prompted interest in obtaining communal benefits through collective action. Such concepts framed the development of ideas for communication to support malaria prevention and treatment. For example, songs and poems were developed by participants that included verses imploring community members to seek treatment for malaria, emphasizing the importance of following prescribed dosages for malaria treatment, and encouraging maintenance of hygienic households and community environment.

Proverbs in the local language (Chichewa) were put forward. For example, *“Pali chabwino paliso choyipa”* (meaning that good dwells together with the evil, which, in the context of malaria, illustrates that although mosquito nets are a good remedy, they have limitations such as not preventing bed bugs), and *“Chosamva anachiphikira m'amasamba”* (meaning the arrogant one was cooked together with the leaves – highlighting that people should talk to and cooperate with each other). Participants highlighted their interest in taking action at community level, including holding meetings to tackle issues of mutual interest and not waiting for solutions to come from the outside: *“We have realized that now there are opportunities for us to solve some of these problems ourselves”* (Female participant, Session 3, Day 4).

Concepts for posters depicted change through images that showed before- and after- scenarios to motivate action. It was also suggested that posters could be distributed for display within private homes to indicate support personalization and ownership of health concerns, rather than the only displaying such media at health facilities and other public venues.

### Discussion

Malaria is a leading cause of illness and death among pregnant women and children under the age of 5 in Malawi<sup>7</sup>. Around three out of ten children under the age of five (29%) experienced fever in the two weeks prior to the 2015/16 Demographic and Health Survey data collection, with 67% accessing health services, and 52% having blood taken for testing. Around two thirds of Malawian households (63%) have at least one mosquito net, with more than half of households (57%) having an insecticide treated net (ITN). ITN ownership has increased over the past ten years and has been stable in the recent period<sup>8</sup>.

While global declines in malaria have been attributed to standardized control measures in combination with systematic scale-up of interventions in most-affected countries, there have been episodes of resurgence where levels of malaria incidence have rebounded, thereby raising questions about the sustainability of interventions. Factors deemed to undermine effective malaria prevention have been noted to include weakening of programmes through reduction of funding, down-scaling of indoor residual spraying activities, technical challenges such as insecticide resistance including reduced efficacy of insecticide-treated bed nets, and declines in community cooperation<sup>9</sup>.

Engagement with community members through the Action Media process demonstrated that despite good knowledge of malaria (including adequate risk perception and strong compliance with LLIN use), malaria incidence was perceived to be unacceptably high in the community. Concerns about continued exposure to mosquito bites were related to social

factors, concurrent exposure to infestations of bed bugs and limited community participation in malaria control. These concerns are not typically addressed through standardized approaches, and community members were frustrated by the contradiction between their commitment to LLIN use and their experiences of regular bouts of malaria. They were also worried about the ongoing negative consequences of illness of their children and themselves that led to severe hardships and undermined family and community wellbeing.

While topical mosquito repellants are widely recommended for tourists and others travelling to malaria endemic areas, they have not been included among prevention strategies for broader malaria control. The use of mosquito repellants has been explored in various small-scale studies, primarily in Asia and South America, but also in a few African countries, and a review. Findings suggest minimal or no contribution to malaria control<sup>10,11</sup>, with constraints being largely related to inconsistent use of repellants<sup>12</sup>. Participants in the present study were strongly motivated to prevent malaria, and were of the view that they would make use of insect repellants to prevent mosquito bites prior to going to bed if these were made available locally. Such intrinsic motivation could be strengthened through more effective community-driven communication, increasing potential for malaria prevention in such Malawian contexts.

Perspectives on the interaction between bed bug infestations and malaria control were revealing. Perceptions that LLINs provided a place for bed bugs to breed and that bed bug infestation led some community members to sleep outside without protection from mosquitos undermined malaria prevention. Bed bugs are acknowledged globally to be difficult to control, and insecticide resistance constrains eradication efforts<sup>13,14</sup>. Some community members were said to be boiling their LLINs to kill bed bugs, and this practice has potential to reduce effectiveness of the nets by causing anti-malarial insecticides to leach away prematurely. Given perceived high levels of malaria incidence in the community, that included severe illness and risk of death, participants were concerned that malaria treatment-seeking necessitated travel to distant health facilities. This was difficult for people who were seriously ill, and such visits also depleted household resources if transport costs were to be entertained. It thus made sense that provision of malaria treatment through local HSAs should be considered. Although the potential or need for rapid diagnostic tests was not raised by participants, utilization of rapid diagnostic tests do form part of Malawi's intervention strategy for the current period<sup>15</sup>. While there was some deference to the need for support to malaria prevention via external agencies or government – for example, provision of chemicals to eradicate bed bugs and supply of improved nets or mosquito repellent – participants noted that there were some steps that could be taken without outside intervention. Strategies mentioned included community management of potential mosquito breeding areas and moderating activities that increased exposure to mosquitos in the early evening. Overall, there was a strong inclination towards working collaboratively to address the malaria problem, and it was recognized that many actions were both simple and doable.

With regard to communication, the participatory process demonstrated the value of moving beyond literal and persuasive messaging towards conveying insights and lessons through proverbs, songs and poems that could be



presented by community members themselves. Proverbs offer greater opportunity to deepen meaning in support of health communication by connecting health concerns to cultural constructs and values. Interest in imagery that conveyed changes in preventive practices through before and after scenarios also supported motivation for change. The suggestion for expanding the distribution of health posters from public spaces to include the possibility of display in households indicates an interest in validation and ownership of health promotion within and by families. This suggests that communication based on values such as family responsibility, communality and taking action to improve health would have better traction than singular emphasis on persuasive communication conceived on a top-down basis that focuses on discrete behaviors.

## Conclusions

Participatory research with health vulnerable community members highlights the relevance of additional prevention measures that are not typically considered as in conventional malaria prevention programming. While mosquito repellents do not appear to be effective as a complementary measure for malaria control in other settings, community members in this setting in Malawi appear to be intrinsically motivated to use mosquito repellent during critical times. Provision of treatment locally through HSAs would reduce time and costs of treatment seeking as well as potentially impacting malaria incidence. While it is unclear whether bed bugs are a widespread concern in Malawi, what this study reveals is that bed bug infestations have potential to considerably undermine the efficacy of LLINs, and measures to address this concern should be made available. The finding also highlights that formative and operational research should be undertaken to support efforts to eradicate malaria. Inclusion of community members in malaria prevention efforts should be prioritized, given that motivation to respond is prompted by a strong awareness of the counterproductive impacts of malaria on family and community life. Supporting indigenous formats of communication, including local idioms and cultural expression, increases opportunities for ownership of health response by community members.

## Abbreviations

Insecticide Treated Net (ITN); Indoor Residual Spraying (IRS); Health Surveillance Assistant (HSA); Long Lasting Insecticidal Net (LLIN).

## Ethical considerations

As this was formative research to inform programme design, it falls within the definition of non-research and ethical review was therefore not mandatory. Nonetheless, the study was guided by a formal research protocol that included an ethics component that was consistent with international guidelines.

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## Competing interests

The authors declare that they have no competing interests.

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