Malaria control among children under five in sub-Saharan Africa: the role of empowerment and parents’ participation besides the clinical strategies

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A B S T R A C T

Context: Child malaria remains a vital concern in sub-Saharan Africa in spite of major efforts to control it. The widely advertised best curative and preventive measures are not always accessible.

Issue: This article examines the extent to which parents’ perceptions and representations are considered, including their empowerment and participation in interventions aimed at controlling child malaria. The effect of this is examined through a content analysis of articles selected in the PubMed and Wholis databases over the period of 1996 to 2005. This analysis was performed according to three predefined categories consistent with the three main health promotion strategies used in the WHO-AFRO region: (1) development of knowledge and skills; (2) creation of supportive environments; and (3) advocacy.

Lessons learned: Successful interventions met the health promotion strategies wholly or partly. Although these interventions were sometimes incomplete, the development took into account people’s perceptions and representations. The authors acted on the belief...
that empowerment of parents and their participation in the development of interventions to control child malaria, is likely to yield better results and assist in reducing the prevalence of malaria morbidity and mortality in children under 5 years.

**Key words:** child malaria, community empowerment, community participation, health promotion, Sub-Saharan Africa.

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**Context**

Malaria is a major threat to public health in Africa, and remains the leading cause of death in children under 5 years in this region. Bryce et al. report that 94% of deaths due to malaria worldwide occur in Africa. However, national and international malaria control programs have been implemented, including: Integrated Management of Childhood Illness (IMCI); Roll Back Malaria initiative; and the Global Fund. Major progress in the prevention and treatment of malaria has been reported through the adoption of Artemisinin combined therapy (ACT) from several countries; the use of insecticide treated bed nets; and Intermittent Preventive Treatment (IPT) for pregnant women and children. However, despite the existence of effective treatment and protective measures, malaria continues to be of concern.

In an attempt to address this concern, a research-action project was initiated in rural communities in Benin (west Africa), integrating child fever representations and perceptions of parents of children under 5 years on malaria control. A literature review to determine current aspects of child malaria control interventions was carried out to inform the process.

McCombie reported that care-seeking in the event of fever is very poor and many cases of fever have non-specific treatment at home. He recommended that home-based management of malaria be improved in order to reduce the progression of cases to severe forms. Although WHO promotes a malaria home management initiative, it is arguable as to whether this initiative addresses peoples’ interests. Williams and Jones contend that it is not people’s lack of knowledge that determines their healthcare-seeking behaviour in the event of fever, but several other factors (economic, socio-political, and social status). They ask, not to know ‘how can we get [communities] to…’, but rather ‘we should be pressing to find ways to increase people’s capacity to have access to complete and effective treatments’.

**Issue**

The problem of malaria control in children under 5 years now exceeds a simple biomedical vision of health. Under-five malaria control should also involve parents and non-medical community sectors. The concern of this study was to establish whether there are interventions relating to under-five malaria control that impact on the target communities. If so, what were the key elements of that success? Which areas of research can contribute to reduce the prevalence of malaria in under fives?

**Methods**

We systematically selected articles related to child malaria using the key words ‘malaria’ and ‘child survival’ in PubMed and Wholis (World Health Organization Library database), published between 2000 and 2005. In all, 26 759 articles were obtained: ‘child malaria’ 11 521 (11 114 in PubMed and 407 in Wholis); ‘child survival’ 15 238 (15 227 in PubMed and 11 in Wholis). Using selection criteria relating to the extent of malaria; the progress of curative and preventive malaria care; malaria care-seeking behaviour; and malaria community interventions with parents’ participation and empowerment, we retained 95 articles. These also included references of published and unpublished work on child malaria (1996 and beyond) cited in the articles selected and answering the same criteria (Fig1).
Figure 1: Flow diagram identifying articles accessed for this research.
A content analysis of the selected publications identified those related to effective control of child malaria. Particular focus was placed on interventions that were quoted as examples of good practice that had a positive impact on communities as partners. In all, 25 publications were quoted by six other publications that analysed successful practices in child malaria control. Among these we retained and analysed nine in order to identify elements that appear to have been responsible for successes (Table 1). The following criteria were used to retain the articles analysed: (i) articles quoted by an author; (ii) articles describing an original intervention to an aspect of child malaria control; (iii) article with a community aspect; (iv) journal articles published between 1996 and 2005 (Fig1).

Excluded from the list of best practice were: unpublished research reports; literature reviews relating to good community child malaria control practices; comments on interventions with community impact noted by other authors; editorials; unpublished oral communications; studies relating to individual patients; interventions published before 1996.

The elements inherent in the analysis were the three major WHO-AFRO health promotion (HP) strategies:

1. Development of knowledge and skills (empowerment): strengthening community capacity; community participation in the intervention; taking into account communities’ perceptions in strategies development; use of various communication methods to make the intervention known.
2. Creation of supportive environments: establishment of conditions (material, financial, geographical etc) that contribute to adoption of behaviours targeted for promotion; reorientation of health services; enactment of regulations/laws supporting the adoption of the promoted behaviour.
3. Advocacy: any negotiation carried out to reconcile the interests of the recipients to the cause of the intervention and the establishment of partnerships.

**Results**

The reviewed articles were randomized controlled trials \( n = 2 \) and community interventions \( n = 7 \). Reported interventions were undertaken in Africa \( n = 7 \), Asia and Latin America \( n = 2 \), and gained greatest community adherence and showed a decrease of malaria incidence\(^{28} \), severe malaria\(^{21-23,26,28} \), and malaria mortality\(^{18,20} \). Table 2 shows the principal aspects of the interventions according to their HP strategies. It is important to note that aspects of the interventions do not necessarily exactly match the concepts they are connected to in this table. For instance, when speaking about community participation, the interventions were not necessarily total and active involvement at all stages of the process, as will be revealed in the discussion.

**Lessons learned**

It is apparent that aspects that could be attributed to the success of the analysed interventions can be grouped according to the three major categories mentioned:\(^{16} \):

1. Development of knowledge and skills (empowerment).
2. Creation of supportive environments for the promoted behaviour.
3. Advocacy and partnership.

**Development of knowledge and skills (empowerment)**

**Perceptions and social representations in behaviour change interventions:** This takes into account perceptions and representations of partner communities contributing to the success of the analysed interventions, for example Qingjun et al\(^{26} \) and Sirima et al\(^{23} \) (Table 2). Any behaviour change interventions that had a weak impact were the result of not taking into account social representations of the target audience\(^{29-31} \). Health behaviours are not only influenced by knowledge or belief, but also conditioned by the social, cultural, economical and political context in which they occur\(^{32} \). It could be said that such factors are context specific.
Table 1: Authors of the interventions quoted as having had a significant impact on the reduction of malaria incidence in communities\(^9,13,15,17-28\)

<table>
<thead>
<tr>
<th>Authors of interventions with impact</th>
<th>Authors who quoted them</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnussen et al., 2001[17]; Pasha et al., 2003[18].</td>
<td>Holding et al., 2004[19]</td>
</tr>
</tbody>
</table>

Disregarding people’s representations and perceptions has other repercussions in child malaria. A population’s behaviour response to child malaria is to a known disease, mainly the principal sign of the fever, for which there is general reluctance to seek care outside the home\(^33\). Consequently, national health systems’ data do not reflect reality, because they are based only on cases received in health facilities\(^34\). Baume\(^33\) and WHO\(^27\) both noted that national malaria control programs have not made this reality their working tool in planning control interventions. Recognizing this, it is necessary to pass from individual practice to integrated interventions, placed in the broader context of social, cultural, political, economic arenas\(^16\). This broader prospect for the development of child malaria control interventions is essential, and conforms to general HP principles, which dictate that health interventions tackle the various influencing factors, commonly known as ‘the broad determinants of health’. One way to do this is to develop interventions with the active participation of the population\(^35\).

Community participation: Partner communities’ participation in an intervention greatly increases the chance of success\(^20,25\). However, the community involvement aspect of community participation poses a real challenge to health professionals\(^28,36\). Health professionals must place the community’s perspective at the centre of interventions in order to empower the community to develop and its own self-determined action\(^37\). Community participation should not focus on a make for people or population approach, but rather make with them. This participation-negotiation approach should be assumed at all levels\(^38,39\).

Community participation can be interpreted in two ways. In the first, participation is a means with utilitarian logic that places more importance on the results obtained than the act of participation. The second way is to understand participation as a process that contributes to reinforcing community power. Because parents do not seek care at health facilities for fever but treat it at home, it is useful for health professionals to consider malaria control with their collaboration, through a community dialogue that brings about mutual comprehension. Such actions will have a greater impact in reducing the incidence of malaria\(^40,41\).

Integrated use of various communication approaches: It is important to draw partner populations’ attention to the interventions, as noted by Kidane and Morrow\(^20\), and Marsh et al\(^22\). The HP concept, as described by WHO\(^16\), places particular emphasis on the integration of the various approaches and methods used in a medical action.
Table 2: Principal aspects of the analysed articles

<table>
<thead>
<tr>
<th>Authors</th>
<th>Development of knowledge and skills</th>
<th>Creation of supportive environments</th>
<th>Advocacy (Partnership)</th>
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<tbody>
<tr>
<td></td>
<td>- Collaboration with communities.</td>
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<td></td>
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<tr>
<td></td>
<td>- Communication.</td>
<td></td>
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<td></td>
<td>- Collaboration of teachers, parents and pupils in the decision to include malaria in the teaching program.</td>
<td>- Availability of anti-malarial drugs at schools.</td>
<td></td>
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<tr>
<td></td>
<td>- Meetings of information and interpersonal communication.</td>
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<td></td>
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<tr>
<td>Marsh et al., 1999[21]</td>
<td>- Training of drugs’ shopkeepers. Communities expressed the need. Programs were based on the wishes of the community.</td>
<td>Improvement of the communities’ choice of malaria treatment.</td>
<td>Local authorities.</td>
</tr>
<tr>
<td></td>
<td>- Interpersonal and group communication.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marsh et al., 2004[22]</td>
<td>- Theoretical training followed by practices of unofficial anti-malarial drug retailers.</td>
<td>- Improvement of a community practice of drugs’ purchase.</td>
<td>Medical authorities (District and government levels).</td>
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<tr>
<td></td>
<td>- Follow up by community health workers twice a year.</td>
<td>- Retailers’ display of training certificates builds community’s confidence.</td>
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<td></td>
<td>- Use of posters, local dances, theatres to sensitize communities to the program.</td>
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<tr>
<td>Okanurak &amp; Ruebush, 1996[28]</td>
<td>- Training of volunteers, periodic re-training and follow up on a regular basis.</td>
<td>- Drugs available close to the community.</td>
<td>Community leaders.</td>
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<td></td>
<td>- Participation of communities and leaders throughout the process.</td>
<td>- Support of medical authorities.</td>
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<tr>
<td>Pagnoni et al., 1997[25]</td>
<td>- Populations’ perceptions and beliefs about child fever identified and taken into account in the development of the intervention.</td>
<td>- Availability of pre-packaged and affordable treatments.</td>
<td>Health services at all level.</td>
</tr>
<tr>
<td></td>
<td>- Mothers were responsible for the treatment of the children as first-line caregivers.</td>
<td></td>
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</tr>
<tr>
<td>Pasha et al., 2003[18]</td>
<td>- Training of teachers about the symptoms of malaria, the treatment kit.</td>
<td>- Availability of treatment kits and trained teachers all the year.</td>
<td>Parents, and health and education professionals.</td>
</tr>
<tr>
<td></td>
<td>- Collaboration with parents and pupils.</td>
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<tr>
<td>Qingjun et al., 1998[26]</td>
<td>- Taking into account the population’s perception of the number of days for treatment. “The number 8, according to Chinese beliefs, brings good luck and it was considered that a course of Primaquine over 8 days would enhance compliance more than one for 14 days.”</td>
<td>- Modification of the dosage methods to fit with the perceptions of the population.</td>
<td>Community</td>
</tr>
<tr>
<td></td>
<td>- Taking into account local denominations of simple and severe malaria.</td>
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<td></td>
<td>- Meetings: information and community sensitisation.</td>
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</table>
Creation of supportive environments for the promoted behaviour

Supportive environments, as defined in the methods section, was central in the analysed interventions to the adoption of promoted behaviours\(^{20,23,25,28}\) in which anti-malarial drugs are available free or at low cost in communities. Generally, as developed by Green and Kreuter\(^ {42}\) in the PRECEDE-PROCEED model, the creation of environments supportive to behaviour adoption (called enabling factors) is a major factor in the success of behaviour change. Therefore, for child malaria control to be effective, certain conditions relating to communities’ perceptions and representations are essential in order to obtain their support\(^ {35}\).

Advocacy and partnership

The majority of interventions analysed in this study worked in inter- or intra-sectoral partnerships with the health sector. If it is recognized that there are factors underlying child malaria that are beyond the health sector’s expertise, as mentioned Williams and Jones\(^ {15}\), it is necessary to work in collaboration with sectors other than health. This acknowledges the importance of advocacy when implementing interventions, according to the concept of HP\(^ {16}\).

The link can be made between these lessons and what has been said\(^ {43}\) about successful interventions in HP. According to Moodie, the success of HP programs in Australia has been reliant on a number of factors, which include the development of policies, legislations and clear regulations; the communication of information; the provision of services and improvement of human resources in HP; inter-sectoral shared responsibilities; community mobilization and; the creation of information collection systems\(^ {43}\).

In conclusion, it seems that Williams and Jones\(^ {15}\) proposal deserves to be considered with the words of Chavez\(^ {44}\):

...never presume that you know the needs and priorities of people; confess your utter ignorance of their background, the way their minds work, the reasons for their attitudes, and ask them how they would like you to help.

It seems clear that we should widen our vision of health to include the bio-psychosocial factors (such as social, cultural, economic, environmental, political etc), which underlie malaria. And if health professionals take on the role of ‘technical advisers’, this will have positive implications for an active population, while strengthening their capacity for action. This ‘power’ given to populations may then be applied to the resolution of other problems in the community, and would enhance their development. At the very least, we hope this involving and empowering process can succeed in controlling child malaria among endemic communities.

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References


