

Sociocultural And Behavioural Issues In The Treatment And Prevention Of Malaria

Paper for the WHO/TDR Scientific Working Group on Malaria, Geneva, Switzerland, 24–27 March 2003

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Summary

Sociocultural practices and social structure/organization play a significant role in the treatment and prevention of malaria. This recognition has significantly pushed the malaria agenda forward in the last decade, albeit at a pace that is still not satisfactory. With approximately half the world's population living in developing countries lacking access to public health services, and the confirmation of the hypothesis that malaria is a disease of the poor, it has become critical that we should understand the social, cultural and behavioural issues relating to treatment and prevention of malaria. Specifically, it has become important to understand:

- the processes underlying illness recognition;
- treatment of fevers at the household and community levels;
- pathways to treatment/care seeking, adherence to treatment regimens;
- malaria prevention/control within the ambit of community participation/cooperation; and
- mechanisms underlying behaviour change.

This paper describes the current status of research in this important area and highlights issues, opportunities and challenges that still need our attention. Areas of research for the future are identified.

Introduction

Just over a decade ago, Oaks et al. [1] writing in *Malaria: obstacles and opportunities*. A report of the Committee for the Study of Malaria Prevention and Control: status review and alternative strategies urged that, "human behavior and social organization are vital determinants of the success of malaria control programs [but] ...we do not know enough about how humans respond to malaria to be able to build strong multidisciplinary control programs". About the same time another malariologist, Bradley [2] wrote, "when the insights of anthropology [human behavior and social organization] and education fully permeate the way in which environmental control is implemented and are not just added on as after thoughts ... then real progress can be made".

Since these statements were made, we have made good progress in trying to understand the host in the host–vector–parasite triangle, but we have yet to use our current (limited) understanding of human behaviour and social organization to influence the current improved strategies and evidence-based interventions and to effect meaningful change in the fight against malaria.

Nevertheless, the momentum has increased and we believe that challenges in this area will be surmounted in the near future.

Management of malaria

Recognition and perceptions of malaria-like illness

As with other illnesses, a significant percentage of malaria-like illness is first recognized and defined at home. A number of studies conducted in the last decade [3–12], especially on children aged less than 10 years (the subjects of the majority of studies), have highlighted the fact that recognition/definition of malaria-like illness is based on a people's belief system, as it relates to the etiology of illness. The belief system forms the basis of categorization of illnesses into serious, mild or mundane [3,13], which in turn determines the promptness with which care is sought, withheld or even withdrawn; the type of care sought — home, traditional or modern; and the social network that will be involved in decision-making for treatment seeking [3,14–17]. The same literature also suggests that people living in areas in which malaria is endemic recognize the symptoms of mild malaria, which they view as an everyday, therefore mundane, illness; however, in most cases, people do not recognize that malaria can develop in severity, as indicated by convulsions and severe anaemia (among other presentations), which are still viewed in many communities as being separate disease entities with no relationship to malaria.

Intervention in this area has taken the form of health education/promotion targeted at mothers and other people who care for children, as well as drug-sellers, traditional healers, traditional birth attendants and community health workers, this material being designed to equip them with knowledge on symptoms that require prompt treatment, appropriate treatment and the need to refer [18–25].

The main achievement in this area has been the raising of awareness; most studies conducted after the mid 1990s report that many communities are aware of the causation, transmission and symptoms of malaria [26,27], and, in a small way, improved knowledge is leading to some minimal behaviour change, both in use of antimalarial drugs and in ownership of bednets [24,26–27,38]. However, awareness and improvement in knowledge concerning the above-mentioned parameters have not yet been translated into actions that could reverse the upward trend in incidence of malaria in any significant way.

The main challenge is that fever, which can be caused by many other conditions, remains the best symptom by which malaria can be described; because malaria mimics other conditions, it is difficult to come up with a "gold standard" set of symptoms by which malaria can be recognized. Other challenges are in the area of monitoring and evaluation; this must be done in a manner that allows for the association of this type of intervention to observed behaviour change the effect of this type of intervention on observed behaviour change to be measured and dependence on "free labour" in the name of community participation.

Treatment-seeking behaviour for malaria-like illness

As a corollary to recognition and definition of malaria at the household level, treatment of malaria, in both mild and severe forms, also commences at home and, for the most part, continues outside of the formal health-care sector. Treatment takes the form of self-medication with antimalarials and/or antipyretics [3,16,21,24,28–30,37]. This behaviour is so widespread that it has been postulated that self-medication may account for over half of all antimalarials consumed worldwide [31]. The antimalarial drugs and antipyretics consumed are obtained from "left-overs" saved in the house from a previous episode (especially when drugs are obtained from health-care facility), retail outlets and drug sellers, and are frequently used irrationally or inappropriately [3–29].

The many reasons postulated for widespread self-medication revolve around inadequacies of health-care facilities and delivery of services, including accessibility of the health-care facilities, cost, waiting

time, lack of drugs and social distance of health workers [3–29,32–34]. Nevertheless, people do seek care from formal facilities (public and private) and informal sources, such as traditional healers, the choice being dependent on various factors, including cost, distance and socioeconomic status. It is important to note that these sources of drugs that are not part of formal health-care services are not seen as alternatives, but as first tiers of care [3,19,36]. When illness persists or causation is redefined, people seek care from health-care facilities — albeit late in the episode of illness, with all the attendant consequences [42].

The available literature repeatedly shows that mothers/caregivers often do act in response to symptoms as they present, thus interventions have been concerned with making antimalarials available closer to people and training cadres of community members to distribute them. The training of these community members, who come under various names — community health workers, community-based distributors [18,22,39], and the training of shop-keepers and sellers of patent medicines [19,24] and mothers [20] seeks to equip the trainees with information on the importance of “correct” diagnosis, giving out, selling or dispensing only complete doses, the need to refer, and when to refer. The training of shopkeepers especially is seen as a cornerstone for the scaling-up of prompt, appropriate treatment of malaria at the household/community level [41]. It is becoming even more important with the advent of pre-packaged, age-specific dosages of malaria; these will not only facilitate prompt, correct treatment and accessibility, but will also hopefully address the major problems of self-medication and poor adherence to completion of treatment; the latter is critical for treatment for malaria, especially as it relates to issues of treatment failure and drug resistance.

There are numerous challenges in this area. Satisfactory and optimal ways of engaging communities and of distributing pre-packaged drugs have yet to be identified. Examples of issues include volunteerism and incentives for community cadres, logistical processes to ensure the timeous delivery of drugs from central locations, handling of the drugs at the community cadre level, and supervision from the formal health-care sector.

Prevention and control of malaria

Chemoprophylaxis and intermittent presumptive therapy for malaria

There is a dearth of studies on sociocultural issues relating to chemoprophylaxis for malaria, as revealed by the lack of a single publication on this issue in the publication database for the Partnership for Social Science in Malaria Control. One comprehensive review of prevention (chemoprophylaxis) of malaria in travellers does not mention a single study on sociocultural issues. Such issues may include lack of adherence to dosage and instructions on duration of treatment, and complacency when symptoms present. This is currently not one of the prevention interventions encouraged in Africa, but it is a clarion call for the millions of people who travel to countries where malaria is endemic.

Prophylaxis for people living in countries where malaria is endemic is not highly promoted. However, it may be time to rethink this stand. A large number of young children living in countries in which malaria is endemic, but where epidemiological conditions vary geographically are at constant risk of death when they travel from within the same country. A top pediatric hospital in Kenya has reported a large increase in the number of cases of malaria in the hospital soon after school holidays in children travelling from Nairobi to the Lake basin and coastal areas that are hyper-endemic for malaria (the Administrator, Gertrude Garden Hospital, personal communication). This is an area that requires addressing.

Current knowledge on malaria during pregnancy supports the use of directly observed intermittent presumptive therapy (IPT) with sulphadoxine/pyrimethamine (SP). For this approach to be effective,

pregnant women must be informed and empowered to change popularly-held cultural beliefs on use of antenatal clinics, time during gestation at which first contact is made with an antenatal clinic and, most importantly, educated to understand that fever is not a normal condition of pregnancy and that some medication, even if bitter tasting, is safe and will not lead to spontaneous abortion [15].

The preliminary results of an ongoing study on attitudes to SP in Zambia indicate that the people surveyed believed that pregnant women should not be given SP because it can cause miscarriage, and also that breast-feeding mothers should not take SP because the nursing baby's blood "is too thin" and the baby could die as a result (Dr Mike McDonald, personal communication).

The challenge is to increase knowledge of the protective value of malaria chemoprophylaxis for pregnant women and young "local" non-immunes in countries in which malaria is endemic. It is also necessary to keep looking for drug candidates that pregnant women can take without fear of losing their pregnancies. Most drugs used for prophylaxis have very dramatic side-effects [43] and concerted efforts to promote these drugs and to educate people about their benefits and side-effects are required.

Vector control and environmental issues

Potential mosquito breeding sites, comprising small, temporary, freshwater pools (man-made or natural) that are exposed to sunlight, abound in countries in which malaria is endemic. More breeding sites are created by human manipulation of the environment [44,45], mostly for necessary endeavours such as opening up land for agriculture and settlement, building dams for power generation and irrigation. Local factors that have a direct impact on breeding sites include farming methods, house structure and rubbish disposal. Of these, intervention from communities could work at the level of improving house structures to decrease the number of mosquitoes entering [46,47], and rubbish disposal. To address the other factors, integrated vector control on a large scale, use of chemical interventions and other personal protection interventions are required. It has been noted that residual indoor spraying seems to be less acceptable to householders than other interventions; the cooperation of the householders is necessary for success. There is no body of social science literature on integrated vector control and management; this is a good area for research.

One practice that was variously encouraged but was found to be ineffective over the years was clearing of bush and filling up of water pools around homes, which still finds a place of honour in many a malaria health education write-up. Although it was noted 55 years ago that bush clearing has no place in malaria vector control, the myth still persists [40].

Personal protection with insecticide-treated materials

It is an accepted fact that insecticide-treated materials (ITMs) — including nets and curtains — are effective in reducing morbidity and mortality caused by malaria, as demonstrated specifically in controlled trials [48–51], in small projects [52] and under normal field conditions [53]. In this regard, promotion of ITMs in all countries in which malaria is endemic is a high priority. Questions about availability, accessibility, affordability and acceptability, and therefore appropriate use, continue to be addressed in both small projects and large-scale programmes; slowly but surely, coverage figures are rising.

Health education appears to be improving malaria-specific knowledge, which in turn is reportedly having some positive impact on net/ITN ownership at the household level [27]. However, control programmes are still grappling with distribution, affordability and equity issues, whether they use social marketing or normal commercial approaches. The main challenge on the people side, other than

cost, is ensuring appropriate use by the most biologically vulnerable people, pregnant women and children aged less than five years, and reaching those who are economically vulnerable, the “poor of the poor”. Parents continue to use the available net in a household, especially if it is the only one, and new information is that parents use the newest net/ITN and children use older nets that have probably been handed down (27). Also, there is still widespread use of this tool seasonally, i.e. only when mosquito densities are perceived to be high (26). At the distribution level, the major challenge faced by retailers and small-scale traders who would really be able to deliver nets and treatments out to remote places is lack of credit, although the demand exists. This is another area that would benefit from research to determine, for example, whether nongovernmental organizations could address this problem.

Re-treatment remains another big challenge, even under the best of circumstances. Wide-scale production and availability of nets treated with long-lasting insecticides should help this situation. However, communication (with regard to health education about how to re-treat nets etc.) has to continue for all the normal nets that will still be on the ground.

General challenges

Communication for behaviour and/or demand creation is critical for all the areas of intervention described in this discussion paper, but has not received enough attention. Most intervention programmes include an information, education and communication component, and it is anticipated that this component is able to create demand and/or influence behaviour. However, in most of the literature referred to in this paper, the approach to design of this component is neither systematic nor well planned, and it is usually reduced to the production of posters and brochures, or geared towards specific instructions regarding, for example, dosage, duration of treatment, and how to treat and hang a net. The few small projects that have reported success in this area have yet to be tested and evaluated in large-scale settings.

This is an area that requires attention and adequate funding; to effect change in behaviour requires sustained long-term activities and not a few education projects before and after the launch of the programme, which mostly stop at raising awareness. With functional national malaria control programmes and Roll Back Malaria secretariats now in place in many countries, those players with a role in malaria control within countries should be challenged to work closely together, especially on communication for behaviour change; their combined resources could thus be used to address key issues in a sustained way and key messages could be addressed in a generic manner to avoid confusing the public. This would stretch the resources available for communication, and sustain this activity in a way that would, in this author’s opinion, increase the chances of effecting meaningful demand creation and behaviour change.

Most importantly, as drugs/pre-packages, nets and re-treatment kits are commodities, it is important that those responsible for the communication components of interventions understand clearly that demand creation must first satisfy the “four Ps” of marketing — product, place, price and promotion. Promotion should only be carried out when the product is available in the right place and the right price.

The results of a few studies that have included gender as a variable when analysing uptake of malaria interventions and use of health-care facilities indicate that there are gender differentials in, for example, spending decisions, use of facilities and net/ITN ownership. Many more studies need to consider this variable in order to consolidate the current picture, which is currently hazy.

While it is desirable that communities should be involved in the development of activities and in health development in particular [54], some caution should be used so that the partnership is not seen in an overly romantic light. The organizers of most interventions based in communities seem to assume that community members have suffered so much from malaria that they will volunteer their time free-of-charge to be trained, or to train others, to act as health educators, drug dispensers/vendors, ITN vendors/distributors, registrars of births and deaths, referral points and even specimen collectors.

However, literature on community participation from the late 1980s to the early 1990s, indicates that this area is fraught with very real problems [54]; these problems should not be ignored in the bid to scale up malaria intervention programmes in order to create meaningful community participation. It has to be remembered that these community-based workers invariably deal with various other disease programmes, which might treat the same “volunteers” differently. New research is required determine what expectations the community health worker of the 21st century have in respect of their participation in intervention programmes.

Conclusion

We have accumulated a body of knowledge concerning sociocultural and behavioural aspects of the treatment, prevention and control of malaria; this knowledge is and will continue to be critical in informing efforts to scale up all available malaria interventions. It is important that the processes by which these interventions are implemented are carefully evaluated and documented, so that we are informed and ready to deal with sociocultural and behavioural issues that will be raised by future interventions, such as the long-awaited vaccine against malaria.

Useful manuals and monographs that are excellent resources for programmes are also available. An inventory of these resources and wide dissemination of the same should be undertaken in order to stop re-inventing the wheel (to avoid unnecessary duplication of efforts) and to open up other areas of research. We have to move beyond studies of knowledge, attitudes and practices/behaviour as stand-alone projects, and to put more effort in working within intervention programmes to answer operational questions.

There is an immediate need for research into communication for behaviour change. Most other required research is of an operational nature or is in the realm of monitoring and evaluation; most questions requiring attention are generated by activities/operations in interventions. Thus, for the moment, we still have many issues to address relating to scaling-up of useful interventions in case management, vector control, personal protection and malaria in difficult circumstances. Community-directed initiatives have been shown to work for other tropical diseases, for example, onchocerciasis and filariasis. We should seek optimal ways to achieve similar success, despite the complexity of malaria in all its aspects.

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