Audience Perception of Roll Back Malaria Campaign in Kaduna Metropolis: Implications For Maternal and Child Health in Nigeria

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Abstract

Nigeria accounts for one quarter of all the malaria cases in Africa. Though preventable, malaria remains one of the major public health problems in Nigeria. This study was undertaken to find out audience perception of the Roll Back Malaria campaign in Kaduna Metropolis and its implications for malaria elimination among pregnant women and children. This is by determining the variations in levels of source confidence among the vulnerable group and finding out how the campaign has been useful in their attitude towards malaria prevention. One hundred and eighty copies of the questionnaire were administered to the vulnerable group (pregnant women and nursing mothers), purposively drawn from eight primary health centres within Kaduna metropolis selected based on their high client flow for maternity cases. The study discovers

that the campaign has changed the views and perceptions of a clear majority of the people (97%) about the use of mosquito nets and other beliefs regarding malaria. In this regard, the study recommends that the government should, as a matter of routine, monitor the use of mosquito nets through community health educators, ward focal persons, and take adequate steps to improve on the campaign in areas where low success is recorded.

Keywords: Communication, Malaria Campaign, Maternal Health, Child, Kaduna

Introduction

Malaria control and prevention in Nigeria was given more prominence following the launching of Roll Back Malaria (RBM) in 1998. Roll Back Malaria is a global movement geared towards bringing about a significant reduction of the malaria burden with special focus on high transmission areas of Africa (Goodman, Coleman and Mills, 2000 cited in FMOH, 2008). The movement arose out of the growing political commitment to combat the disease by both affected countries and the donor communities. Specifically, RBM has the goal of halving the world's malaria burden by 2010 (FMOH, 2008). Hence, the basic goal of the Roll Back Malaria programme was to reduce the malaria burden by 50 percent in the year 2010 compared to the levels in the year 2000.

Although in recent times progress has been made towards reducing child mortality, Nigeria is currently off track for the Millennium Development Goal (MDG) 4 – a two-third reduction in child mortality (on 1990 levels) by 2015. According to the

United Nations estimates, Nigeria has achieved only an average of 1.2 percent reduction in under-five mortality per year since 1990; it needs to achieve an annual reduction rate of 10 percent from now until 2015 to meet the MDG 4 (Federal Ministry of Health, 2011).

Nigeria bears up to 25 percent of the malaria disease burden in Africa, hence contributing significantly to the one million lives lost per year in the region, which mostly consists of children and pregnant women (NCP, NMCP and ICP International, 2012). Malaria in Nigeria is endemic and constitutes a major public health problem despite the curable nature of the disease. Malaria-related deaths account for up to 11 percent of maternal mortality. Additionally, they contribute up to 25 percent of infant mortality and 30 percent of under-five mortality, resulting in about 300,000 childhood death annually (NCP, NMCP and ICP International, 2012).

Statement of the Problem

Nigeria accounts for one quarter of all the malaria cases in Africa; there are more deaths due to malaria in Nigeria than in any other country in Africa. It also has one of the world's highest rates of all-cause mortality for children under five: approximately one in six children die before their fifth birthday (Roll Back Malaria Partnership (RBMP), 2012).

The use of insecticide-treated nets (ITNs) is one of the most effective measures used to prevent malaria. Between May 2009 and February 2011, the government of Nigeria, with support from other partners, distributed approximately 30 million mosquito nets across the country. In addition, awareness of the importance of net usage has increased, leading to greater demand for the nets, both treated and untreated (NPC, NMCP and ICF Int'l, 2012).

However, communication is an essential part of malaria control. Thus, communication needs to be included in the process

of malaria control right from the start of activities, not as an after-thought or add-on at the end, according to Dunn (2005). Lettenmaier (2003) also noted that malaria communication should be integrated with other health education and communication efforts, and these efforts should be strategically designed from an audience perspective to address the social and contextual environment as well as individual behaviours and knowledge.

The problem, however, is that even though some aspects of communication have been used in RBM efforts in Nigeria, there are few research assessments of their efficacy. RBM campaigns in Nigeria have involved producing communication materials, which are disseminated to the target audiences through organizational, institutional, mediated, and interpersonal channels with the aim of influencing the beliefs, values, and behaviours of the target audiences. This research was undertaken to address the problem of non-systematic evaluation of RBM campaigns on Long Lasting Insecticide-treated Nets (LLINs) distribution carried out in Kaduna metropolis and by assessing the perceptions and influence of these campaigns, especially with regard to two vulnerable publics (pregnant women and nursing mothers).

Objectives of the Study

The following objectives were developed to guide the conduct of this study:

1. To determine the variations in levels of source confidence among the vulnerable group.
2. To find out how the campaign has been useful in influencing attitude towards malaria prevention among the vulnerable group.

Research Questions

Based on the above objectives, the following questions were

developed to guide this research:

1. What is the variation in levels of source confidence among the vulnerable group?
2. How has the campaign been useful in influencing attitude towards malaria prevention among the vulnerable group?

Significance of the Study

Malaria is the most common cause of outpatient attendance across all age group (FMOH and NMCP, 2009). In Nigeria, the Federal Ministry of Health has noted that malaria accounts for nearly 110 million clinically diagnosed cases per year. An estimated 300,000 children die of malaria each year and 11 percent of maternal related mortality is related to malaria in pregnant women (FMOH and NMCP, 2010).

Since every Nigerian is a potential victim, it is safe to argue that all of Nigeria's population of 167 million is at risk of malaria caused by *plasmodium falciparum,* the most lethal of the malaria parasites. While morbidity and mortality due to malaria have been declining over the years, they remain unacceptably high. The disease contributes enormously to both childhood and maternal mortality in Nigeria (RBMP, 2012). It therefore poses a serious threat to the realization of the national goal of a healthy workforce, which is necessary for the attainment of the nation's economic development goals. Therefore, a study of this nature is of immense importance to reverse the trend in Nigeria where malaria is still endemic even at the end of the first decade of the Roll Back Malaria Movement. Although Nigeria is now the number one economy in Africa following the recent recalibration of economic metrics, the results will not translate to a better country for the people if malaria continues to wreak havoc on the populace, especially among the most vulnerable publics of pregnant women, nursing mothers, and children.

Literature Review

Although there is considerably abundant literature on health challenges and health intervention methods in Africa generally, and Nigeria particularly, not much has been produced on the particular topic of Roll Back Malaria and its perceptions and putative influence in Nigeria. The history of interest in RBM in Nigeria dates back to 2000 when Nigeria signed the Abuja Declaration on 25th April, during the African Summit on Roll Back Malaria, which was held in Abuja, Nigeria's capital. All 44 Heads of State and Government or their representatives in attendance (this number represented 88% of all malaria endemic countries in Africa) signed the declaration which committed these governments to set aside resources towards reducing by half the burden of malaria mortality in Africa within the next 10 years i.e. by the year 2010 (RBMP, 2012). Much of the relevant literature deals with deleterious and severe consequences of malaria, the benefits of using mosquito bed nets, the availability of information about malaria, the value of community engagement and participatory approaches, the paucity of positive attitudes among members of target publics, and the limited use of mosquito bed nets in some areas. Not surprisingly, these results are not conclusive and so there is need for further research to accumulate more evidence on the perplexing questions these studies address.

In one of the early studies in this area, Chima, Goodman & Mills (2003), reported on some of the severe consequences of malaria, especially in children where it is responsible for the impairment of cognitive ability, diminished anthropometrical growth and reduced physical ability to engage in schoolwork. These can lead to children starting school at a later age, poor educational performance, high dropout rates, and an increase in the number of children requiring special education. This means doom for the educational sector of any nation where malaria control and prevention is not given priority attention. The deleterious consequences affect individuals and economic and

social development. As the WHO (1999) reported, malaria has an insidious and far-reaching effect on economic and social development. In addition to the direct costs of treatment and prevention, malaria is responsible for significant losses in productivity and undermines educational achievement. It discourages savings and investment by households, constrains optimal land use, and deters foreign investment and tourism. In their study of uncomplicated malaria among Nigerian paediatric patients Ishola, Oreagba, Olayemi and Gbadamosi (2011) found that the pattern of treatment of uncomplicated malaria reflects high compliance with the policy change from chloroquine to ACTs as first line anti-malarial drugs. Despite some significant side effects and irrational prescribing practices, most prescribers opined that treatment outcome was above average.

Some studies dealt with the availability of malaria information, which is an absolute necessity in RBM campaigns, while others focused on efficacy of bed nets. The results of a study which was conducted in Swaziland by Hlongwana, Mabaso, Kunene, Govenda and Maharaj (2009) showed that most people had information about malaria, with the most important source of information being health facilities. There was little information coming from such sources as the *tinkhundlas* (traditional community district meetings). This is important for not only addressing the availability of information but also the sources and channels for reaching the target audience. It is expedient to know that malaria information is available and can be disseminated through preferred channels; but it is more important to ask about the perceived effectiveness of mosquito bed nets, which was the question Nwammuo (2008) addressed in an earlier study on Insecticide Treated Nets in Nigeria. The results of this study showed that majority of the respondents had received the bed nets and this accounted for the decrease in malaria mortality among children aged 0-5 years and pregnant mothers. In a similar and more recent study conducted in Eastern Africa by Sexton (2011),

the results showed that awareness and knowledge of benefits and proper use of treated bed nets led to the most consistent and correct use, consequently increasing coverage and community-wide benefits. Correct use of the nets increased their life span thereby lowering overall lifetime costs of usage per person.

Knowledge about malaria and treated bed nets might be widely available and the benefits of usage may be widely known too, but these do not always imply expected usage, especially among currently non-pregnant women. In a recent study by Afolabi, Fatunmbi, Otsemobor, and Sofola (2014), it was found that although a large number of women of child-bearing age in Nigeria are present in households, very few of them slept under protective measures such as treated bed nets when compared to currently pregnant women. This is similar to the findings of a study by Aluko and Oluwatosin (2012) where very few women showed positive attitudes towards utilization of treated bed nets. It is a thing of concern that their relative high knowledge of malaria in pregnancy did not inform high level of positive attitude towards the use treated bed nets in particular. The study further showed that women from monogamous families were more likely to own and sleep under treated bed nets than those in polygamous families. These results suggest that such contexts as pregnancy status and marital structure (monogamy or polygamy) could facilitate or constrain the use of treated nets by women. Yet other factors of interest could include community engagement and participation.

In an interesting study, Atkinson, Vallely, Fitzgerald, Whittaker, and Tanner (2011) found that community engagement and participation played a critical role in successful communicable disease control and elimination campaigns in many countries. In their study on *"the architecture and effect of participation: a systematic review of community participation… implications for malaria control"*, Atkinson *et al.* (2011) discovered that integration of a community participation framework for malaria elimination into the broader Primary Health Care (PHC) strategy

yielded desirable benefits including more effective and sustainable malaria elimination.

There is a growing body of literature, which shows the wide range of interests in research on malaria prevention and control in Nigeria and beyond. Many studies underline the reality that malaria is a deleterious disease with far-reaching consequences for the individual as well as the community and nation, and thus deserves more serious research attention. Other studies address the uses and benefits of bed nets, while others focus on the availability of information. These studies do not have definitive results and thus there is still the need for further research, especially those that address audience perceptions of RBM campaigns, the putative value of such campaigns, and the preferred sources of malaria information for the target audience. The next section explains the theoretical assumptions that informed this research.

Theoretical Framework

This study on audience perception of Roll Back Malaria campaign in Kaduna Metropolis was informed by the tenets of the **Health Belief Model, which** emerged in the late 1950s. The Health Belief Model was originally used to understand why people did not participate in preventive services, and more recently to understand decisions around the use of health services (Day, Dort, and Tay-Teo, 2010).

The Health Belief Model is of the assumption that people will take action to undergo a health prevention behaviour when they are ready; they see it as beneficial; and the difficulty is not greater than what is to be gained. Does the end justify the means? Readiness is determined by the degree to which one believes an illness is likely. Perceived susceptibility may be influenced to proximity to an illness. For instance, someone with a family history of diabetes will more likely seek a blood test than someone who has no family history of the disease. Readiness is also determined by the consequences a health risk may impose. When

perceived susceptibility is seen as likely and perceived severity of an illness is high, motivation increases. Conversely motivation decreases as susceptibility seems unlikely and severity is viewed as inconsequential (Rosenstock, 1966).

Therefore, the proper use of communication from the planning stage to the implementation of a malaria prevention or control programme has a potential to influence the perception of the vulnerable group about the severity or otherwise of the disease and thereby taking a positive preventive action at the appropriate place and time. Since malaria is endemic in Nigeria and many Nigerians are affected by it, this high prevalence coupled with the severity in many cases, especially among the most vulnerable publics of pregnant women and nursing mothers should make RBM campaigns not only noticeable but also noteworthy and deserving of attention. The Health Belief Model is a good paradigm for explaining the expected positive perception that RBM campaigns could command, the value that research participants would place on the campaigns, and the attention they would accord to certain sources of malaria information.

Method of Study

Study Area

Kaduna metropolis is located in northern Nigeria and serves as the country's trade and transportation hub. It is the capital city of Kaduna State, the fourth largest city in the country and one of the most populous Millennium Cities. Kaduna metropolis is included in (consists of) four separate local government areas (LGAs), Kaduna North, Kaduna South and part of Chikun and Igabi (Olisemeka and Salim, 2011).

Malaria continues to be a public health problem in all parts of Kaduna State in spite of the different strategies employed by the Ministry of Health to curtail it. The impact of the disease is felt even more among the vulnerable population, especially pregnant women and children. These populations are especially worse hit because of their depressed immunity (State Ministry of Health

(SMOH), 2012). Being neither in the extreme northern or extreme southern part of the country, Kaduna Metropolis is deemed to be typically representative of malaria prevalence in Nigeria.

Study Design and Data Collection

The study is a Quantitative Research conducted to proffer solutions to the research questions developed to guide the execution of the study. Therefore, descriptive survey method was adopted in order to reach pregnant women and nursing mothers who are the primary audience of the Roll Back Malaria Campaign on Long Lasting Insecticide-treated Nets (LLINs) Distribution in Nigeria.

Thus, 180 copies of the questionnaire were purposively administered to the vulnerable group (pregnant women and nursing mothers), sampled based on the criteria that they own mosquito nets and witnessed the malaria campaigns conducted in their areas. The respondents were purposively drawn through voluntary participation from eight primary health centres within Kaduna metropolis selected based on their high client flow for maternity cases. The researcher administered the questionnaire to the vulnerable population during Antenatal Care Visits and Routine Immunization at the designated Primary Health Centres (PHC) within the study area.

The instrument consisted of questions that elicited demographic information on respondents' age, education, and occupation. Other pertinent questions asked how they acquired their bed nets, how often they used them, their sources of information on malaria and bed nets, their perception of the value and benefits of using bed nets, their change of perception (if any) regarding the use of bed nets, among others. Experts validated the research instrument through peer review to ensure that it elicited the appropriate responses from the respondents. To ensure the reliability of the instrument, research assistants who assisted the researcher in the distribution of the questionnaire to respondents

in designated PHCs within the area of study, were trained before the commencement of the exercise.

Data Presentation

The quantitative data generated from 180 respondents in this study is presented using frequency and percentage tables.

Table 1: Distribution of Respondents by Occupation

Occupation	Frequency	%
Self Employed	62	34
Private Sector	19	11
Civil Servant	30	17
Others	2	1
Not in employment	67	37
Total	**180**	**100**

According to the data on Table 1, majority of the respondents who are about 40% of the sampled population were not employed. In addition, a very good number of the respondents were self-employed. This shows that many members of the vulnerable group in the area of study were either unemployed or self-employed.

Table 2: Distribution of Respondents by Educational Qualification

Educational Qualification	Frequency	%
Primary	35	1 9.4
Secondary	67	37.2
Tertiary	56	31.1
Others	22	12.2
Total	**180**	**100**

The data on the Table 2 above indicates that majority of the respondents were secondary school certificate holders. Only few percent of the respondents said they had other educational qualifications such as Quaranic and Arabic studies. This means that many of the respondents are either literate or semi-literate.

Table 3: Distribution of Respondents by their Age group

Age Bracket	Frequency	%
Less than 20yrs	9	5
21 - 25yrs	58	32
26 - 30yrs	52	29
31 - 35yrs	2 9	16
36 - 40yrs	20	11
41yrs and above	12	7
Total	**180**	**100**

The result presented on Table 3 above shows that majority of the respondents were between either 21-25 years old or 26-30 years old. Only few numbers of respondents were less than 20 years of age or above the age of 40. This by implication means that majority of pregnant women and nursing mothers in the area of study were less than 40 years.

The responses by all the respondents to the question on whether a malaria campaign on LLIN distribution was carried out in their area, within the period under review, was in the affirmative. This informed their inclusion in the study. In addition, the responses to the question on ownership of mosquito nets show that all the respondents own a mosquito net and this qualifies them for inclusion in the study.

Table 4: Distribution of Respondents on How They Got Their Mosquito Net

Variables	Frequency	%
From Antenatal Care Visit	28	15.6
During a Malaria Campaign	109	60.6
From a Pharmacy Store	38	21
Others	5	3
Total	**180**	**100**

Details on Table 4 above shows that majority of the respondents got their mosquito nets during a malaria campaign carried out in their area. Only a negligible percent of the respondents got their nets through other means such as from relations or neighbours. Based on this result, the LLIN distribution campaign carried out in the area of study can be said to be effective.

Table 5: Distribution of Respondents on How Often They Sleep Under Their Mosquito Nets

Variables	Frequency	%
Very Often	96	53.3
Often	44	24.4
Occasionally	32	18
Not at All	8	4.4
Total	**180**	**100**

According to the data on Table 5 above, about three-quarter percent of respondents agreed that they either slept very often or often under their mosquito nets. Only a few percent of them were negative. The campaign can be said to be successful based on this result.

Table 6: Distribution of Respondents by Preferred Medium of Information on Malaria

Variables	Frequency	%
Radio	32	18
Television	24	13
Poster and Handbills	1	0.6
Community Health Workers	4	2
Hospital	111	62
Relatives/ Friends/Neighbours	8	4.4
Total	**180**	**100**

The result on the above Table indicates that majority of the respondents preferred hospital as a source of information on malaria control and prevention. Only few of the respondents preferred other sources as channel of information on malaria. This means that the vulnerable group has more confidence on the information emanating from hospitals and health workers than the broadcast media or other channels of communication.

Table 7: Distribution of Respondents by Change of Perception on Use of Mosquito Net and Beliefs Regarding Malaria by the Campaign Conducted

Variables	Frequency	%
Strongly Agree	115	64
Agree	59	33
Undecided	4	2
Disagree	2	1
Strongly Disagree	0	0
Total	**180**	**100**

From Table 7 above, almost all the respondents either strongly agreed or agreed that the malaria campaign conducted in their area changed their perception on the use of mosquito nets and others beliefs regarding malaria. A negligible number of respondents disagreed. Based on this result, it can be said that the campaign had positive effect on the targeted population.

Discussion of Findings

The discussion of findings is done in line with the research questions developed to guide the conduct of this research.

RQ 1: What is the variation in levels of source confidence among the vulnerable group?

The results on Table 6 above show that majority of the respondents preferred hospital as a source of information on malaria control and prevention. Only few of the respondents preferred other medium such as radio, television, billboards, posters, and relatives as sources of information on malaria. This means that the vulnerable group has more confidence on the information emanating from hospitals and health workers than the broadcast media or other channels of communication.

In all, 111 respondents representing 62% of the sampled population indicated preference for hospitals as medium of information on malaria, but there are differences in the levels of preferences among respondents in the four LGAs. From the findings, majority of the respondents in Kaduna North chose radio and hospitals as their preferred sources of information on malaria, while majority of the respondents in Kaduna South preferred the hospital as a source of information on malaria. However, majority of the respondents from Chikun LGA chose television and hospital as their preferred sources of information on malaria, while almost all the respondents in Igabi LGA preferred the hospital as their only source of information on malaria.

Therefore, majority of the respondents in both Kaduna North and Chikun LGAs chose both the broadcast media and the

hospitals as preferred sources of information on malaria, while majority of respondents from both Kaduna South and Igabi LGAs preferred the hospitals as their source of information on malaria. This finding shows that the vulnerable group has more confidence on health related information emanating from experts in the hospital and partly the mass media than any other source(s). This emphasizes the importance of interpersonal communication strategies in the fight against malaria in Nigeria and other nations of the world. It also supports the assertion of one of the interviewees (Ward Focal Person, Kawo) that inter-personal communication was very effective during the campaign, even at the pre-implementation stage.

RQ 2: How has the campaign been useful in influencing attitude towards malaria prevention among the vulnerable group?

Going by the Data on Table 7, almost all the respondents either strongly agreed or agreed that the malaria campaign conducted in their area changed their perception on the use of mosquito nets and others beliefs regarding malaria, only a negligible number of respondents (1.1%) disagreed. Majority of respondents in Kaduna North, Kaduna South, and Igabi LGAs strongly agreed to this assertion compared to Chikun LGA where the majority merely agreed that the campaign has changed their perception on the use of mosquito nets. Based on this result, it can be said that the campaign had positive effect on the targeted population.

Thus, the campaign can be said to be successful because about 61% of the sampled population noted that they got their mosquito nets during the LLINs distribution campaign in the study area. The campaign can also be said to have been useful to the vulnerable group because about 80% of the respondents sleep under the mosquito nets either very often or often. This agrees with the findings of Sexton (2011), which showed that awareness and knowledge of benefits and proper use of ITNs will lead to the most

consistent and correct use, consequently increasing coverage and community wide benefits.

Conclusion

The study obviously shows that inter-personal communication is crucial to the success of any health intervention programme. For instance, the findings of this study revealed that the class of people vulnerable to malaria attacks – pregnant women and children under five years of age – can be better reached through inter-personal communication at the health facilities in their communities or through community health workers. As shown in the findings of this study, the target group has high level of preference and confidence on information about malaria prevention emanating from the hospital and community health workers compared to those from other sources channels. This justifies the discovery of Atkinson et al (2011) that the integration of a community participation framework into the broader PHC strategy for malaria elimination will be valuable.

Recommendations

The following recommendations are made based on the findings of this research:

1. The government should as a matter of routine monitor the use of mosquito nets through community health educators and ward focal persons as some of the people who got theirs from the campaign did not make use of it.
2. The government in Kaduna State should exhaustively use the respective health facilities in the state as a means of reaching the vulnerable group with health related messages.
3. The mosquito net distribution campaign should be improved upon by conducting it on regular basis, as many people do not have any of the mosquito nets distributed.
4. There should be systematic evaluation of all health

campaigns within the country so as to constantly assess the outcome or impact of such programme.

5. Stakeholders in the health sectors and at all levels should ensure the adequate use of inter-personal communication strategies as a means of reaching the marginalized and vulnerable groups with projects and programmes that will improve the health of the people whenever the need arises.
6. International agencies such as WHO, World Bank, UNICEF, and UNDP, which initiated the Roll Back Malaria movement, should ensure that there is proper mechanism put in place for adequate and regular monitoring and evaluation of health interventions in the developing nations of the world, especially African countries, so as to achieve desired result.

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