ABSTRACT

Malaria is a serious disease and major public health problem, which causes the death of children and adults worldwide. Malaria is a risk for 97% of Nigerian population. There is an estimated 100 million malaria cases with over 300,000 deaths per year in Nigeria. The diseases contributes to an estimated 11% of maternal mortality account for 60% of outpatient visits and 30% of hospitalizations among children under five years of age in Nigeria despite targeted interventions to eliminate malaria in the country. This paper seek to explore human behavior as a caused of malaria prevalence and cases in Zamfara state North Nigeria using qualitative research method. The interview was conducted with 20 participants and found out that those malaria cases and prevalence was largely causes as a result of poor household behavior on the measures taking to control the disease in one hand and their behavior that increased the chances of producing mosquito which is the causal agent of transmitting malaria among the population and hence increasing its prevalence. The paper recommended comprehensive approach towards instituting effective health policies that included and integrated human behavior into priority to be put in place especially regarding the fight against the scourge of malaria.

Keywords: Human behavior, malaria, prevalence, Zamfara, Nigeria.

1. Introduction

Malaria is a serious disease and major public health problem, which causes the death of children and adults worldwide. In 2012, there were 207 million cases of malaria worldwide, with the majority cases occurring in the African region (WHO, 2013). Malaria is a major public health problem in Nigeria where it accounts for more cases and death than any other country in the world. Malaria is a risk for 97% of Nigerian population (FMH, 2007). There is an estimated 100 million malaria cases with over 300,000 deaths per year in Nigeria (WHO, 2012). The diseases contributes to an estimated 11% of maternal mortality account for 60% of outpatient visits and 30% of hospitalizations among children under five years of age in Nigeria despite targeted interventions to eliminate malaria in the country (WHO, 2011). Despite being a country which has targeted malaria elimination as a public health priority, malaria remains a major health problem in Nigeria. Those intervention targeted to eliminate malaria largely concentrate on health priority without reference to the behavior and belief system of the human societies affected (Amzat, 2009).

This human behavior that is ignoring by policy and program of malaria control can dictate and influence the risk of malaria for individual and communities. For example peoples in malaria endemic countries (Nigeria included) and especially those that are poor often cannot afford the decent environment with all the provision (such as frequent fumigation, waste disposal
provision/facilities and waste water maintenance as well as available and effective preventive measures) that would keep them from expose to mosquito (Bos & Mills 1997). Human activities in such cases can create breeding sites for larvae such as stagnant water, indiscriminate waste disposal and lack of fumigation near the household (Ityavyar & Gusau 1999). Those provide alternate sources of breeding mosquito.

2. Literature

Human behavior is generally influenced by several factors. Those factors include political, social cultural and economic factors among several others. Those factors have comprehensive and clear connection to society health and their physical conditions, as well as the threat for contagious diseases like malaria. Whether it is deliberate or otherwise, human behavior influence and shape the strength of health promoting and disease preventing management and activities. Human behavior in other cases influences risk and disease threat while in other instances reducing it. According to Inhorn & Brown (1990) human behavior have frequently without knowing assisted the increase of contagious diseases prevalence through pattern of behavior or through adjustments in the fundamental association between infectious disease instruments, their human and animal hosts, and the environment where those interactions among disease hosts and human activities occur (Inhorn & Brown, 1990).

Therefore, human behavior as such, their behavior on the major causes of malaria such as behavior on environmental fumigation, behavior on waste disposal practices also contribute to shaping how their humans activities in such serve as epidemiological predictors of health and disease prevalence patterns. Although people's behavior may increase malaria risk, to change such behavior is not easy. Certainly, a lot of reasons were given on how and why particular behaviors are present and have frequently married to substantial advantage in places relatively different from health. MacCormack (1984) stated that the main explanation for why people do not recognize and believe in new form of health behavior is as result that the behavior being promoted is either not convenient or somehow difficult, which consequently generated unnecessary side effects, or does not give observable and evidence results. (MacCormack, 1984).

The people's behavior and contact to parasites or vectors or parasites, including their activities of increasing or decreasing breeding of such vectors are clearly important for transmission of disease and comprise essential and needed immediate threat factors. This paper emphasize that people's behavior and their activities on malaria control on the causal agent of the vector parasites are in the same way critical and constitute essential possibility for the spread of disease prevalence. These more fundamental risks must be addressed by any effort to control malaria on a worldwide scale.

Despite the critical possibility of human behavior for the spread of disease prevalence, human behavior is lacking behind on the issue of malaria control and prevention. According to Etkin (1991) contemporary malaria control programs deviate little from their early design, and that a lot of researches end up that human behavior ought to have been engaged into consideration at the program's inception. Because failure to address even reasonably apparently with the behavioral aspect consumes the practical erudition and ability of mosquito control skill management (Etkin, 1991).

Furthermore, Brown (1997) has also established that there has been little written about human behavior and malaria control in the modern rebirth of malaria. This gab created as a result of the focus of public health in general, and malariology in particular, has been barely set on the parasite and the mosquito vector. The greater image has been neglected by public health focus such that increased rates of malaria prevalence, even though openly influenced by shift in the parasite and
vector, are further caused by human behaviors. Those behaviors are both associated to individual environmental practices patterns and large scale sociological phenomena. (Brown, 1997) Malaria and diseases control and management can be studied from a biological aspect and socio-cultural point of view, and, without a doubt, substantial and significant studies has been done in each of these areas, but with most focus to the biological sphere of the disease control (Inhorn & Brown, 1990). It is in view on the above that this study focuses on the human behavioral aspect on how human behavior affects overall disease prevalence demonstrating their significance for malaria control and prevention activities. Therefore, the main objective of this paper is to explore human behaviors a caused of malaria prevalence in Zamfara state North West Nigeria.

3. Methodology

Qualitative research was used for this to interview participant of the research in order to seek their perception and experiences about human behavioral practices and malaria prevalence. Qualitative research is a method of investigation engaged in different academic disciplines, traditionally in sociology, and many other social and administrative sciences. Qualitative research aims to collect an in-depth understanding of social behavior and the causes of such behavior. The qualitative research technique explores the why and how not just what, where and when. Sekaran (2003) discourse that qualitative research design incorporate extensive use of verbal and developing full information on comparatively few cases. It is also provide accurate information from social event and picture conclusions from available data. The reason for qualitative study was to disclose and make details on the phenomena and to achieve in-depth understanding of the research subject. In this current study it was set to achieve in-depth understanding on the situation of human behavioral practices as a caused of malaria prevalence in Zamfara state North West Nigeria.

Semi-structure interview was used as instrument for this study. Interview was conducted with 20 respondents that participated in the study. Among the interviewee are household members across the state and malaria control stakeholders. Stakeholders that participated in the interview include three staff from Zamfara state Roll Back Malaria (RBM) office, three staff from state ministry of health and two staff from Direct Delivery Information Captured (DDIC) which is a piloting program for distribution of malaria commodities. Other two staff from Malaria Action Plan for States (MAPS) Zamfara state office was interviewed. Five respondents from Non Governmental Organizations (NGOs) and another five respondents from community and household members were also interviewed respectively.

3.1 Interview Protocols

Designing interview protocols is very vital for researchers that are going for qualitative research method. The main of this is to guide the researcher to conduct the interview successfully without any difficulty. Therefore, some tips provided by Stacy A. Jacob (2012) for conducting interview were adapted and strictly adhere by this study. The tips for the interview provided by Stacy A. Jacob (2012) are as follows:

- Start with your script
- Collect consent form
- Use some types of recording device and only take brief notes so you can maintain eye contact with your interviewee
- Arrange to interview your respondents in a quiet, semi private place
3.2 Thematic Analysis

After strict compliance with guidelines or tips provided by Stacy A. Jacob (2012) for conducting interview, thematic method was used for analysis of data collected during the interview with research participants. Thematic analysis is one of the major and widespread types of qualitative research data examination analysis. This method highlighted, analytic, investigative and recording model or theme within data. According to Ibrahim, M. (2012) thematic analysis is a technique for classifying, evaluating, and exploring as well as reporting patterns in the data that simply classify and explained data in detailed facts. This process of thematic analysis involved the familiarizing yourself with your data, that is transcribing data reading and re-reading. This is follow by generating initial codes in a systematic fashion across the entire data set, after that searching for themes by gathering all data relevant to each code, next is to reviewing themes checking in the themes work in relation to the coded, defining and naming theme and overall story the analysis tells; generating clear definitions and names for each themes and finally producing report (Braun V & Clark 2006).

This interview was conducted with sole aims of exploring household behavior as caused of malaria prevalence. After transcribing the recorded version of the interview, this study arranged those into themes for simple thematic analysis of the results. Two themes were generated and one theme contains some sub themes. The table below shows the themes generated for this study and their codes.

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<th>S/NO</th>
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<td>HB02</td>
<td>Human Behaviour</td>
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Malaria Prevalence

The general theme on this research was on malaria prevalence. Malaria prevalence was the first information reveal by participants of this study. Majority of the interviewees disclosed the rate of malaria and its prevalence Zamfara state. Among the participant who respondent on the issue of malaria prevalence was advocacy, communication and social mobilization desk officer of Zamfara state ministry of health. The respondent stated malaria prevalence is high in Zamfara as it is on the other part of the country but in Zamfara the prevalence differs among the local government’s areas of the state. The respondent stated that:

Actually the prevalence of malaria in Zamfara state is not exceptional in the other states. I can say it is almost high percentage about 90 to 97% of malaria prevalence especially in some strategic areas in Zamfara state. We ha have 14 LGAs. We have some areas that are
more prevalence than the others regional status of the environment (MP01- ACSM Desk Officer).

Respondent from NGOs working for malaria activities and programs in Zamfara stated how malaria prevalence is in the state. The respondent cited an example with prevalence of malaria among those that are tested positive with the disease on their visit to medical health facilities. The respondent stated during the interview that:

Honestly malaria is disturbing people here in Zamfara state. We are using one test that through it we can understand that it is malaria. We are doing it and through it we can find it is malaria. So if we used those that are tested with positive malaria parasite we can conclude that the disease is still having high prevalence. That I am talking to those that are able to visit health care facilities which they are even small in number compare to those that are not been able to go health facilities in one reason or the other (MP01- NGOs Respondent).

However, another interviewee from Zamfara state Roll Back Malaria (RBM) officer who is also the state deputy manager of the program informed during the interview that malaria in the state is still high but if comparing with what was happening in the previous years back there is some element of progress toward decrease in the disease prevalence. The respondent attributed this progress to the intervention activities by Malaria Action Program for States MAPS and other collaborating partners in the. The respondent mentioned that:

Still we are facing so many challenges due to high malaria prevalence in the state. But on the same way we have to see the progress in terms of reducing disease prevalence. For example in 2011 mostly there are no partners engage in malaria control activities in the state. But due the emergence of different partners like Malaria Action Plan for States that is MAPS, like National Malaria Control Program (NMCP) and Society for Family Health and Civil Society Organization (CSO). Looking into their emergence in control activities from 2011 to date we noticed the decrease of rate of morbidity and mortality in the intervention sites (MP01- Deputy Manager RBM).

Interview with participant who is from the NGOs working on malaria control elimination and prevention services find out some decline of cases of morbidity and mortality due to the malaria. The respondent told during the interview that cases of malaria reduced in facility centers they have visited. Although the respondent said he is only talking on those particular places they have visited to assess the commodity distributed by malaria control partners like MAPS and other organizations. The respondent stressed that:

Really, in death, there is reduction in death rate related to malaria especially maternal and child death, because of the prevention given to pregnant women. It has been design for them, it become mandatory, each pregnant woman that come for her first visit, antenatal services during her ANC visit she must be provided at least with one mosquito net, as prevention against malaria to her. This was found out in our snap visit to some few facilities centers that those malaria commodity services are provided (MP01- NGO Respondent).

A data bank manager at state ministry of health reported to this study the number of registered malaria cases in Zamfara. The manager opined that:
For the prevalence of malaria in Zamfara state I can say as of last quarter of September, we have about 103,584 person with confirmed uncomplicated malaria in the state or I can say across the state and we have some that are highly clinical without out test for over 46,000 and those that have severe malaria in the state as of September 2013. From July-September 2013 last quarter. So that is what we have at this, is across all the facilities that are in Zamfara over 714 health facilities that are in Zamfara. This is the cases reported to the state. (ACM1-State data bank manager)

Interview with one of the community members in Zamfara state lamented that malaria disease is very stressful among the community members causing a lot of suffering to both adult and children in the community without exception. The respondent shared his experiences with the researcher during the interview on the prevalence of malaria in the community where he informed that:

Malaria in this community is a disease of serious concerned. You see it not leave the adult talk less of children. It is even worse than children due to their immune nature. Many children die unnecessarily due to that disease. I cannot tell you the number but I know malaria is the major challenge we are facing because it affect you in one way or the other every day as a household head or member. So you see many children die event adult so that is the situation (MP01-Household Respondent).

Though there are divergent statements on the issue of malaria prevalence in Zamfara state among those that are interview, but majority of them mentioned in one way or the other the high prevalence of the disease among the community live on that particular place. Those findings is therefore, consistent with Roll Back Malaria and World Health Organization report that Malaria is a risk to more than 40% of the world’s community, and out of the more than 300 million severe cases each year between 1.1 and 2.7 million people die every year (RBM, 2002; WHO, 2000). The huge common of malaria cases (90%) are in sub-Saharan Africa, where malaria amount to 10% of the whole disease load. Children under five and pregnant women are most at risk, resulted to rigorous medical and clinical malaria episode and consequently death (WHO, 2002; RBM/WHO, 2000). Malaria represents virtually 25% of all childhood mortality in Africa (WHO, 2000). This is also in line with WHO (2012) that burden of malaria in Nigeria increased as World Health Organization (2012) report that 90% of the mortality rate in Nigeria is as a result of malaria (WHO, 2012). This condition make WHO to placed Nigeria with utmost rank in terms of malaria disease burden in sub-Saharan Africa (Olowookere et al., 2013; WHO, 2012).

Human Behavior and Malaria Prevalence
The general objective of this paper is to investigate the human behavioral practices and how they increase malaria prevalence in Zamfara state. In order to achieved this objective interview was conducted to participant of this study and discussed various human behavior seem to be and as causal agent of malaria prevalence in the study area.

Interview with NGO staff working on malaria control service in the state informed the researcher during the interview that human behavior and their attitude to the environment influence the malaria prevalence in the state. According to the respondent those attitude contributed to breeding of mosquito which is sole and causal agent of malaria transmission among human being. The respondent stated that:
Attitude of our people actually contributed in the sense that we have attitude of uncleanness of our environment. We use to live in dirty environment. We don’t care of clearing of our environment which actually contributed in the increased of malaria in the community (HB02- NGO Respondent).

Same respondent further stated that:

Attitude and behavior of our people to patronize hospital or clinic nearby whenever they feel sign and symptom of malaria is a major concern which encourage malaria prevalence in our society. Instead of them to visit hospital whenever they noticed malaria symptoms, but they like to do presumptive treatments which actually lead to a lot of death and other clinical damages as a result of malaria. So those are the issues with regard to human behavior that increases disease prevalence in the community (HB02- NGO Respondent).

With regard to the human behavior and malaria prevalence in Zamfara state, respondent from state malaria control office have informed during the interview with him that people behavior in respect of services and commodities they provided for malaria prevention and control are very encouraging. The interviewee stated that people in the communities where those services are available showing a positive behavior in using those protective mechanism with sole aim of controlling and preventing malaria. The respondent averred that:

Honestly, people are satisfying and they following all what they have been thought. At all times and they practice it and also see its impact. They are cautious about rules of using what we use to give them usually whenever there is attack and you know they abide by all rules and dose recommended for them by medical expert. So you see that one alone help to reduce disease prevalence (HB02- State Official).

On the other hand interview conducted with some NGO working on malaria control and prevention stated that household member’s behavior encourages the prevalence of the disease if we are to look at their activities of encouraging poor health habit that provide a conducive environment for mosquito production. The interviewee stated that activities of many of the household and community members favored malaria prevalence within that community especially due to the poor environmental and sanitary activities. The responded mentioned in the following statement that:

I can tell you that people fail to do well because of their behavior of poor health habits. Many of the female in the household do not care about making environment clean to avoid the possibility of producing mosquito. Or you see many wives in the houses that have no good health habit which she does not care about all those protection. So you see even the activities of male household members encourage malaria prevalence. For example you can see so many houses with open watercourse at the same time rearing of animal and cattle’s. So you see all those provide a conducive environment for mosquito to breed (HB02- NGO Respondent).

Similarly, a respondent who is in charge of distribution of malaria commodities in Dr Karima facility centre lamented informed to the interviewer that human behavior with regard to sanitary environmental practices and their behavior of using protection and control measures seriously contributed to the malaria prevalence in the state. The interviewee informed that:
Malaria prevalence as I told you was increased mainly due to the some aspect of the behavior of our people. For instance, like lack of sanitation, stagnant water, and gutter blockage is all the behavior that increase the prevalence of mosquito and anywhere with abundance of mosquito you cannot separate that place with high malaria prevalence. So in that case our people behavior in managing their environment is without doubt very poor (HB02- State Official).

Same respondent also reveals another human behavior that increases the prevalence of malaria in the community. Those behaviors according to the interviewee are that of refusal of the client or community members to accept the present control mechanisms that are provided for the protection and control of the disease. The respondent stated in the following statement that:

You see like those human behavior of not using drugs is what make its prevalence to be high. Because as mosquito is biting you all the times, it causes you to have the disease. But if there is net and you are using it, it can take care. But the situation is reversed as a lot of them have sort to behavior of not using those control and prevention measures provided. So tell me how can you avoid malaria prevalence with someone who is always bite by a mosquito due to its abundance and he is not using any possible prevention and protection measures. So malaria prevalence must be high due to such kind of behavior, unless if those kind of behavior change (HB02- State Official).

Furthermore, a respondent from household community members provided ways that human behavior increases the prevalence of the disease and at the same time reduces it depend on which among the behavior an individual community member take. The respondent stated on his own words in the following information:

Yes I relate it (malaria prevalence) to human behavior. For example for those people that are financially vibrant they can buy flit and flit their house every day 2-2 day so that you try killing the mosquito. This is a human behavior in trying to reduce the prevalence of the disease or killing the causal agent of the disease. Or maybe you used the available resources at your disposal for any of the protection is all behavior of protecting self from mosquito which surely reduces malaria prevalence. But when you do not do those two things and you leave your window open you allow mosquito in your house flying here and there you don’t do anything is also a human behavior that of sure encourages malaria prevalence. Or when you see mosquito and make sure that you have net, or you go out and take flit you taken decision to stop mosquito and stop malaria so i say yes is a human behavior that encourages in one hand the prevalence and also on the hand reduces the malaria prevalence (HB02- Community Member Respondent).

From the above findings of the human behavior and prevalence of malaria disease in Zamfara state North West Nigeria, the results shows a consistence relationship with Mcinerney (2002) who found out that human attitudes and behaviors not only play a critical role in the influence of malaria prevalence, but these attitudes and behaviors can also play a role in its control and management (Mcinerney 2002). Similarly the findings is consistent with findings of Inhorn and Brown (1990) which stated that human behavior have an effect on health encouraging and influencing disease preventing actions or conducts, in some cases mounting danger and in others dropping it. Noted by
Inhorn and Brown (1990) human groups have often inadvertently assisted the increase of communicable and other aspect of diseases by the means of their human behavioral conduct and practices within their community and environment. According to Inhorn and Brown (1990) those critical association between human behavior and their hosts to the diseases is a vital in the promoting the prevalence of those diseases within the environment. (Inhorn & Brown 1990). Respondent from the state malaria control office informed during the interview with him measures taking by authority concerned to address the issue of negative human behavior that seem as one of the causal agent that increases malaria prevalence in the community. The respondent provides the information where he stated that:

But now there effort of forming a team as to work as volunteers at different level across the state for sensitization of people toward changing their behavior on malaria control activities. We call them community volunteers. They work at Local Government Areas (LGAs) and they are volunteering from different wards across the LGAs. So they help in mobilizing or going to house to house and visit the household and entire people living in the household where they pass key messages on malaria. They pass key messages as if malaria or if you are living in dirty environment, like they are telling them on how to maintain their cleanness, sleeping in the net, not having the net. So they pass these key messages in the houses and telling the pregnant women about visit to hospital and the household to allow their pregnant women to go to health facilities, that is the facility within their catchment they can access to. So they can pass that information to them. All those with sole effort to bring their behavior into positive side that we believe likely help to reduce malaria cases and prevalence (HB02- State Official).

4. Conclusion
This study reveals the high malaria prevalence within the community under study. Those malaria cases and prevalence was largely causes as a result of poor household behavior on the measures taking to control the disease in one hand and their behavior that increased the chances of producing mosquito which is the causal agent of transmitting malaria among the population and hence increasing its prevalence. In conclusion generally therefore, the general public has to stay conscious, vigilant and responsive to behaviors that contributed to the high malaria prevalence in their community. It is recommended by the government that revolutionary and comprehensive approach towards instituting effective health policies that included and integrated human behavior into priority must be put in place especially regarding the fight against the scourge of malaria.

References


