

KNOWLEDGE, ATTITUDES AND PRACTICES TOWARDS
TYPE C MENINGITIS: A QUALITATIVE STUDY IN
ZAMFARA STATE NIGERIA

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Abstract

Meningitis is a serious viral or bacterial disease in which an outside layer of the brain or spinal cord becomes affected and swollen, and can lead to death of the patient. As one of the countries within the Meningitis Belt, Nigeria has recorded outbreaks in the recent past. Meningitis has a significant impact in Nigeria, but the methods for treatment and factors determining a person's vulnerability are not well understood. This paper adopt knowledge to explore the knowledge, attitudes, and practices of people in Zamfara State in order to identify social and behavioural factors that may contribute to the spread of the disease and likely belief attitudes and peoples practices that might improve health outcomes. The study was conducted among household heads and some health care providers across three senatorial districts in Zamfara State Nigeria. The Health Belief Model was used as theoretical guide of this study. Findings from the study reveal that though there is knowledge about the aetiology of meningitis but some of the respondents lack knowledge to on early sign and symptoms of the disease. Furthermore, the findings indicate that some people in the study area does not engage into proper health preventive practices such as going to hospital for vaccination services. The paper recommends awareness campaign to educate and enlighten people on proper for the treatment and management of meningitis.

Keywords: Type C Meningitis, Peoples attitude, Knowledge, Practices.

Introduction

Meningitis disease is a major treats to health in parts of sub Saharan Africa. According to Greenwood (1999) meningitis is a serious viral or bacterial disease in which an outside layer of the brain or spinal cord becomes affected and swollen, and can lead to death of the patient. Molesworth et al (2003) reported that meningitis epidemic can occur in the meningitis belt causes tens of thousands of cases. The African meningitis belt extend from Ethiopia in the east and Senegal in the west and comprise the

countries such as Nigeria, Niger, Gambia, Mali, Cote D'voire, Guinea, Guinea Bissau, Togo Benin, Burkina Faso, Cameroon, Ghana, Sudan, Sudan South, Central African Republic, Kenya Uganda among several others (Molesworth, et al 2003).

In the past, Nigeria has suffered large-scale outbreaks of meningitis A. In 2009, such an outbreak in the country caused over 55 000 cases with close to 2500 deaths (WHO, 2009). Niger was also affected, with 13 000 cases and 550 deaths (WHO, 2009). However, preventive mass vaccination campaigns supported by Gavi and partners, using the safe and effective MACV in Niger (2010-11) and Nigeria (2011-14) have provided high and long-term protection against the bacteria (WHO, 2011). Since 2010, less than 20 cases of meningitis A have been reported from all vaccinated areas in the region as reported by World Health Organisation in 2011. According to Federal Ministry of Health (2014), there have been outbreaks of meningitis C in Nigeria, initially limited to a few areas in Kebbi and Sokoto states in 2013 and 2014. In 2015, however, there were more than 2500 cases of the disease across 3 states in Nigeria as well as 8500 cases in Niger (WHO, 2016).

As of 19 March 2017, Federal Ministry of Health (2017) reported that a total of 1407 suspected cases of meningitis and 211 deaths have been reported from 40 Local Government areas (LGAs) in five states of Nigeria since December 2016. Zamfara, Katsina and Sokoto account for 89% of these cases (FMH, 2017). Twenty-six LGAs from all five states reported 361 cases in epidemiological week 11 alone. Twenty-two wards in 15 LGAs have crossed the epidemic threshold (FMH 2017 & WHO, 2017). It has been reported by UNICEF (2015) that the most affected age group is 5 to 14 year olds and they are responsible for about half of reported cases (FMH 2017 & WHO, 2017). Both sexes are almost equally affected.

Although meningitis is a vaccine-preventable disease, there is limited knowledge of the co-factors influencing spread and severity of meningococcal disease. A previous clinic-based study conducted during 2006–2007 in Burkina Faso addressed issues concerning beliefs surrounding disease aetiology and found these beliefs had an important influence on health care seeking behavior (Colombini et al 2009). A search of the literature indicates this is the first case–control knowledge, attitudes, and practices survey to be undertaken in the meningitis belt of Africa. This study focused on the knowledge, attitudes, and practices of people in Zamfara State to identify social, economic, and behavioural factors that may contribute to the spread of the disease and likely belief attitudes and people's practices that might improve health outcomes.

Conceptual Discourse

Attitude: A Sociological Explanation on Disease Perception and Knowledge Attitudes defined as a learned predisposition to respond in a consistently favourable or unfavourable manner . According to attitudes is an expression of favour or disfavour towards a person, place or events. The popularity of the attitude construct in sociology and the social sciences can deduce from a large amount of theoretical and empirical literature. Its popularity is because attitudes are supposed to have an impact on, and even predict behaviour (Kraus, 1995). Still, empirical research on the attitude and behaviour link has been yielding contradictory results. In an early literature, concluded that it is more likely that attitudes will be unrelated or only slightly related to behaviours that attitude closely linked to the action. , however, attributed the weak relationship between attitudes and behaviour found in the previous literature to the incompatibility between the attitudes measured and the related behaviour. The results of the later reviews by , and Kraus (1995) diverged from Wicker's (1969) results. They found that attitudes were rather consistent with the future behaviour. Kraus (1995) pointed out that attitudes account on average as there is no significant attitude and behaviour relationship could be established.

According to Munro et al. (2007) four constructs such as perceived benefit, perceived barriers, perceived susceptibility and perceived seriousness can be used to explain behaviour about understanding and definition of disease.

Household perceived seriousness: household belief about the seriousness or severity of illness often based on information or knowledge, it may come from beliefs a household has about the difficulties of a disease would create or the effects it would have on his or her life in general (McCormack, 1984). For example, most of the people is said to view the flu as a relatively minor ailment. People get it stay home and get better. However, if people have HIV/AIDS could land them in the hospital. It may also happen in the case of malaria as household respond to health seeking behaviour only if they perceived the seriousness of malaria and its possible consequences to their life in general.

Household perceived susceptibility: Personal risk or susceptibility is one of the most powerful perceptions in promoting household to adopt healthier behaviour. The greater the household perceived risk, the greater the likelihood of household engaging in health behaviours to decrease the risk. According to people perception about the vulnerability is what prompts men who have sex to use condoms. Similarly stated that it is what prompts people to vaccinate against hepatitis B to decrease the risk of the disease. Correspondingly averred that it is what motivates people to use sunscreen to prevent skin cancer. It is, therefore, assumed that if the household had perceived the vulnerability of malaria may likely to motivate them to seek for health care services for disease prevention.

However, it is opposite in some cases when people believe they are not at risk or have a low likelihood of vulnerability; unhealthy behaviour tends to result. This is found out by Rose et al (2010) and Maes and Louis (2003) with older adults and HIV prevention behaviour. Adults do not perceive themselves as prone to HIV and therefore not practice safe sex protection. This same scenario happened to Asian American college students who perceived HIV as non-Asian disease and they are not susceptible to it. This is what makes their low safer sex practising behaviours (Winfield & Whaley, 2002).

What we have seen so far is that a household perception of increased risk linked to household health behaviour and also decreased the risk to unhealthy household behaviours. However, this is not always the case. Perception of disease risk among college student is linked to healthier behaviours even when the perception of risk is high . Although those students consider themselves at risk for HIV because of their unsafe sex behaviours, they still do not practice safer sex behaviour. This may likely be in the case of malaria as household perceived the disease risk but do not adopt health seeking behaviours. Similarly, another instance in which perception of threat linked to behaviour change is found in a cancer study. According to cancer is a severe disease with a high risk of recurrence. It is the perception of the threat recurrence that increases the likelihood of behaviour change in people previously treated for the disease. In the same way, same thing happens when people perceived a threat of developing diabetes .

However, as the perception of increased risk does not always lead to behaviour change, as found with college students, neither does a perception of increased threat. This is the scenario with older adults and safe food handling behaviours. Older adults are among the groups most vulnerable to food borne illness . Even though they perceived a threat of disease from food borne sources, they still do not use safer food handling behaviours.

Household Perceived Benefit: This is about household's opinion of the value or usefulness of a new behaviour in decreasing the risk of developing disease. Household tends to adopt behaviours when they believe the behaviour decrease their chances of developing disease. Household perception about the

benefit of the programme plays a significant role in the adoption of behaviours. It is found in the study of breast cancer. We hold opinion that the earlier breast cancer found, the greater the chance of survival. It is also known that a breast self-exam when regularly done, can be an effective means of early detection. They have to believe there is a benefit in adopting the behaviour. It is precisely what was found to be true among black women who believed breast self-exam is beneficial (Graham, 2002).

Household Perceived Barrier: since behaviour change is not something that comes easily to the most household, perception about barriers addresses the issue of behaviour change. This is an own household evaluation of the obstacles in the way of adopting a new behaviour. According to this is the most significant factor or construct in determining behaviour change. For a new behaviour to be adopted, a person needs to believe the benefits of the new behaviour outweigh the consequences of continuing the old behaviour (Centre for Disease Control & Prevention, 2004). It enables household barriers to overcome and new behaviour to be adopted.

In trying to increase breast self-examination practices in women, it would seem obvious that the threat of breast cancer would motivate the adoption of this early detection practice. Certainly breast cancer is a severe disease, one of which women are at risk and for which the perception of threat is high. However, even with all of this, the barriers to performing breast examination exert a greater influence over the behaviour than does the threat itself. Some of those barriers according to Umeh and Rogan include difficulty with starting a new behaviour or developing a new habits and fear of not being able to perform examination correctly.

Theoretical Framework

Health Belief Model (HBM)

There are so many theories in sociology that attempt to explain health issues; one of such theories is Health Belief Model (HBM). In every research, a theory is needed, because “theory helps us structure our ideas, so as to explain causal connections between specified phenomena within and across specified domains by using interrelated sets of ideas whose plausibility can be tested by human action and thought” (Krieger 2001, p. 670). Health Belief Model (HBM) was developed according to Nejad et al (2005) by Godfrey Hochbaum and his friends in the 1950s. In order to find out and understand public participation in health screening activities in the United States of America public health service. This was to examine if members of the society decide to involve in healthy activities to eradicate, reduce or prevent the occurrence of disease. Health Belief Model was used by Hazavehei et al. (2007) to study the control of osteoporosis disease among middle school girls in Garmsa, Iran. Similarly, Family Health International also applied Health Belief Model (HBM) in various studies of HIV/AIDS, breast cancer, hemorrhagic fever and several other studies of handling food behaviours.

Moreover, Nejad et al. (2005) in combination with reasoned action theory adopts the health belief model as a theoretical stance to understand dieting and fasting among female university student in Australia. In general, sociologists and anthropologists widely used health belief model with other theories to study health and illness behaviour. Health Belief Model (HBM) holds the idea that, believes about perceived threats of a disease or beliefs about vulnerability to illness and perceived effectiveness of the treatment is to be modified variables. This simply shows that the higher perception about the danger of the disease and also the perceived benefits or the outcomes of using that action results to the possibility of taking positive health action. Therefore, with particular reference to this study of the knowledge attitude and practices towards type C meningitis, Health Belief Model (HBM) was used as theoretical framework



Figure 2.1 Health belief model

Source: Munro et al. (2007).

Methodology

This study used a qualitative methodology of research. 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. According to Kalthum (2008) qualitative research provides a means to access immeasurable proofs about social phenomena. 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. It is in view of this that this study adopt qualitative technique of research to provide accurate and extensive information about knowledge, attitude and practices towards meningitis C in Zamfara state Nigeria

The present study was conducted in Zamfara state North West Nigeria. Interview was conducted with household heads members and health care workers across the three senatorial zones in the state. The state was divided into three senatorial districts and one local government was selected as study centre in each zone. Gusau was selected from central, Kaura Namoda from north and Talata Mafara from west. Ten persons was interview from each selected local government area making the total number of the interview thirty. The participants of this study was chosen because they are in better position to provide information regarding knowledge, attitudes and practices towards meningitis C in Zamfara state and hence justify the reason for choosing them as participants of this study.

Semi structure interview was used to achieve the objective of this study. An open ended flexible and adaptable interview guide was formulated that cover the questions ranging from knowledge, attitudes and practices towards meningitis C. Interview guidelines provided by Creswell (2007) was used to successful interview 42 Informants and 8 health Informants across three senatorial districts that respondent on several issues relating to the peoples knowledge, their attitudes and practices and social and behavioural factors towards meningitis C. Those protocols include researcher's arrival and introduction, introducing research topic and purpose of the research; start actual interview and ending the interview. Recording devices was used to record the interview conducted.

Thematic Analysis

Thematic analysis was used for the analysis of data collected during the interview. This process of thematic analysis involved the familiarising with data that is transcribing the data by reading and re-reading. This is followed by generating initial codes in a systematic fashion across the entire data set. After searching for themes by gathering all data relevant to each code, the next was to reviewing themes checking in the themes work about the coded. Later defining and naming the theme. Generating clear definitions and names for each theme and finally producing the report. After transcribing the recorded

version of the interview, this study arranged those into themes for simple thematic analysis of the results. Three themes were generated for this study. The table below shows the themes generated for this study and their codes. 42 informants were interviewed in which 22 were male, 20 are female and 8 were health informants within the age of 20 to 50 years old.

Table 1: Themes

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S/NO	CODE	THEMES
1	SM01	Symptoms of Meningitis
2	CM02	Causes of Meningitis
3	PDS03	Perception of Disease Severity
4	HSP04	Health Seeking Practices

The main objective of this paper is to investigate people's knowledge, attitudes and practices towards type C meningitis in Zamfara state North West Nigeria. To achieve the above mentioned objective four themes (symptoms of meningitis, causes of meningitis, perception of disease severity, health seeking practices) was developed. The first theme explore people knowledge of the respondents and their understanding with regard to major signs and symptoms of meningitis C. Interview was conducted purposely to find out the level of meningitis knowledge among the people including their general understanding of the causes and disease aetiology. Furthermore, perception of disease severity was developed to finds out people's perception and awareness with regard to the meningitis severity among study population. Lastly, health seeking practices theme discusses people's practices especially on treatment and management of meningitis C.

Results

THEME ONE

Symptoms of Meningitis

Interview was conducted across the state to explore people's knowledge and understanding of the major signs and symptoms of meningitis type C in Zamfara state. During the interview participants of this study reveals information on sign and symptoms of type C meningitis.

Informant from Zamfara central senatorial zone informed that:

Usually joint pain is the major sign indicating that the patient is attack or suffering by meningitis. This new type they called type C is the worst. Because in just recent time it comes with some symptoms of joint and waist pain that are very severe if compare with previous times (SM01- Informant from Zamfara central zone).

Same Informant t stress further that:

When it is hot season and we recognise that one of us is reporting serious joint pain especially around his neck would indicate to us that it is sign or symptom of meningitis (SM01- Informant from Zamfara central zone).

Another Informant from the same zone indicate that:

Hot temperature with cases of joint pain and entire body weakness is an additional sign and symptoms of meningitis. When you wake up from sleeping especially in the morning and you begin to feeling and noticing such above mentioned symptoms it clearly indicate that it is meningitis (SM01- Informant from Zamfara central zone).

New sign and symptom of meningitis type C has been to consist of:

Difficulty in breathing and animating with patient during hot season indicate the signal of meningitis with patient. You see due to the severity of this type C meningitis patient suffering from the experience difficulty to animate. Because of the attack from the organs responsible or help for breathing many patient suffering from the disease are unable to breath. This is one of the contributing factor causes a lot of casualty. You see this symptom of inability to animate is known to only type C meningitis (SM01- Informant from Zamfara central zone).

Interview with Informant from Zamfara west senatorial district reveals that:

Joint pain especially neck and waist was the major sign and symptoms of meningitis but it is usually accompanied by headache, loss of appetite and dizziness (SM01- Informant from Zamfara west zone).

Another Informant stress further that:

Unusual headache, dizziness and body hot temperature is the major sign and symptom of meningitis. Type C meningitis that are new to us came with the same symptoms with the previous or normal meningitis known to us if I have to call it in such a way, but this type C is very dangerous because it kills instantly. Because the serious headache reported by our children who died recently indicates that the serious headache affects their brain (SM01- Informant from Zamfara west zone).

Interview with another Informant reveals that:

Body weakness is one of the sign and symptoms of meningitis. What show first to indicate that meningitis is with you is feeling too much weakness. Than from here it may grow up to the level of side body stiffness to the severe level. When you begin to feel that that severe stiffness of the side of your body than it means all the other symptoms that are common to meningitis patients are already displayed (SM01- Informant from Zamfara west zone)

It was also revealed by different Informant that:

Symptoms of meningitis are many, but there are some that are very common. Among those that are common include inability to eat and drink. Those that are suffering with meningitis are in most cases unable to drink and eat anything due to the lack of flexibility of the body system. The entire body system of the patient has severely stiff and due to that stiffness the patient experience difficulty to eat and drink (SM01- Informant t from Zamfara west zone).

Informant from Zamfara North confirmed that:

You know usually when it is hot season that is during dry period most of the disease we are suffering from is meningitis. We can easily understanding it when someone reporting some pain from part of his body. So it depends on how it came to victim (SM01- Informant from Zamfara North zone).

The Informant continued saying that:

Some experienced hot body temperature, complaining about side pain and some symptoms usually common to children is that some of his body system stop moving especially at the head side. You can see him unable to blink his eye up or down unable to move his or her head up down, right or in the left side (SM01- Informant from Zamfara North zone).

It is also reported that:

Children under ten years of age suffer most from the disease. Because all those mentioned symptom are very severe to this new type C meningitis. When those symptoms show on child less than ten years it is very hard for that child to survive. That is why in just of recent you hard we witness a lot of casualty and most of the victims are children (SM01- Informant from Zamfara North zone).

Another Informant t also lamented to this study that:

Hearing defect is among the symptom of meningitis C among the victims. But to be sincere these symptoms happen mostly to adult members. You can see someone just wake up with hearing defect and because you know he or she may start reporting other symptoms like feverish condition, hot body and other body throbbing problem (SM01- Informant from Zamfara North zone).

To confirm the responses of those participants, this study interact with health care providers in the state to investigate the Informant level of knowledge about signs and symptoms of meningitis type C in Zamfara state North West Nigeria.

Interview with health care personnel in Zamfara west reveal to this study that:

When meningitis patients come to us they usually reported cases of waist pain, hot body and headache. So you know it defend on when the cases are very severe or not. In most cases also the symptoms reported defends on the age of the patient whether he is adult or a child. Sometimes symptoms may be similar or the same but it severity defend on the age (SM01- Health personnel from Zamfara west).

The Informant adds further:

You know children are more severe to those symptoms and also more prone to meningitis type C. This is because children may not take some measures when they are sleeping for example they can't on their own change the position of where they are sleeping like rooms due to hot condition, or moving their body when they are sleeping unless when they are assisted. So this reason makes them more vulnerable to the disease unlike their adult counterpart. So that is why you see cases reported here with a child his head was hook (SM01- Health personnel from Zamfara west).

Health personnel from Zamfara North averred that:

Meningitis type C has many symptoms. But most common among those may symptoms include; waist pain, stiffness in neck, severe head pain, high body temperature, vomiting, and loss of appetite. Those are frequent symptoms of meningitis especially during hot season. So you know as I said earlier it all defend some symptoms may even be dehydration of body (SM01- Health personnel from Zamfara west).

Collaborating responses of the health personnel from Zamfara North and South senatorial zones, health personnel from Zamfara central district affirmed that:

Most of our people refer meningitis as neck disease. That is why if there is severe neck problem our people may urgently seek meningitis treatment even without coming to us. This indicates that neck pain and other body parts are among the major signs and symptoms of the disease (SM01- Health personnel from Zamfara west).

He stressed further that:

You know this type C meningitis comes with severe pain cases which results to the death of the patients without delay especially if there is any hindrance or obstacle in seeking treatment services. In most cases the symptoms are almost the same but in meningitis type C the pain is very severe especially among the young children. Yes it is more rampant among the small even with the record we have here (SM01- Health personnel from Zamfara west).

Another health care provider responded in the following statement:

Inflexible within some part of the body especially around the head side is the major symptom of meningitis and that is why our Hausa people called it Dansankarau meaning that organs that are flexible moving up and down are no longer flexible. So the moment this happen to someone it means is major signs and indicator of meningitis. The one we have now or we experience just of recent that is type C meningitis is very severe and it kill instantly without delay due to its severity (SM01- Health personnel from Zamfara west).

Cause of Meningitis

Interview was conducted to explore the causes of meningitis among the participants of this study across three senatorial districts of Zamfara state North West Nigeria. Respondents who participated in this study shade more light on the issue bordering their perception and understanding of the causes of meningitis in their area.

Informant from Zamfara central zone reveals that:

To my own understanding heat is the major cause of meningitis. This is because the disease comes only when it is hot season. To me it as a result of unfavourable temperature we experience which is hot that cause meningitis. That is why you see if rains comes than meningitis is over till next season again. So usually is a seasonal disease associated with extreme heat or during dry season (CM02- Informant from Zamfara central zone).

The Informant similarly informed that:

That is why you see areas around our states like Zamfara, Kebbi, Sokoto, Borno and rest of them are more prone to meningitis cases and people living in those areas are mostly affected and vulnerable all the times. So you see this is as a result of the hot temperature as I said earlier. I can tell you that is why the cases of meningitis are very rare and exceptional in the southern part of the country. This is because of what? Because they have not experience the hot temperature as we witnessed here (CM02- Informant from Zamfara central zone).

Another Informant from the same zone notify that:

Lack of ventilation is the major cause of meningitis. When there is lack of exposure to air and it hot one may be likely to get meningitis. That is why you see in

many cases people get meningitis when they are sleeping. So when you sleep in a room or place without cross ventilation of the air you may likely attack or acquired meningitis (CM02- Informant from Zamfara central zone).

In a very divergent view another Informant affirmed that:

Yes it is very clear and I agree with all what have been said or people are saying about the causes of meningitis, but to my own belief and understanding that factors believe to the causes of meningitis are not sufficiently enough to cause a disease without the will of God (that is Allah SWT). If you talk about those causes or somebody sleep in the hot room and he or she get meningitis, than you have to tell me what of those that have been sleep in the hot rooms also that have not been affected. And what of those affected without any causes you believe or mentioned in. Here you most leave God with his own decision (CM02- Informant from Zamfara central zone)

Informant from Zamfara west zone expressed that:

Congestion is one of the major causes of meningitis. When people are congested and overcrowded sleeping in the same room, there is every tendency for them to get meningitis. That is why you hear in the radio that people should avoid being congested during sleeping in the night especially during hot season. This is because of the understanding of the contribution of being people congested sleeping in one room make in getting meningitis disease (CM02- Informant from Zamfara west zone).

Another Informant reveals that:

Contact with infected person is one of the major causes of meningitis. Meningitis is a communicable disease. My reason is that if one person is affected before he recovers or dies it spread to many persons. So you see it is through this way that the disease is spread to many people. This is major causes of spreading the meningitis (CM02- Informant from Zamfara central zone).

But Informant from Zamfara North lamented that:

Dirty environment is another cause of meningitis. It is because of this dirty place we are living that cause meningitis. Do you see meningitis in the areas that is not like that? Tell me. So meningitis and not only meningitis think of several other diseases are all as a result of dirty environment we are living in (CM02- Informant from Zamfara North zone).

Another Informant reveal that:

People attitudes towards meningitis vaccination are one of the leading causes of the disease. This is because we already know that meningitis comes almost every year and vaccines are provided but people refuse to take it. So if something happen what do you say is the cause? You see simply is their refusal to take that vaccines (CM02- Informant from Zamfara North zone).

It was also reported differently:

What do think can cause disease apart from Allah the Almighty? If you think in that direction you are very wrong. Nobody can cause any harm to anybody except Allah and He alone. So who ever stand before you telling you that this and this can cause A, B can lead to this type of disease and in short

something of that nature, the worst you can is just for you to look at him, period (CM02- Informant from Zamfara North zone).

Similarly another informant reported that:

All this kind of diseases you are hearing about is the hand work of witchcraft. Let me give you an example, do you see such kind of diseases during rainy season? Answer my question now..., so the reason is that many of our people has nothing to do when it is dry season. So they engage into such witchcraft and cult activities. You know some of them are ask to kill or to do whatever inhuman to have good harvest during the rainy season if they are farmers. It is also involve people doing different kind of business. So you see the issue here is that this period that people are more prone to various kind of disease are period that many of our people are doing nothing at home(CM02- Informant from Zamfara west zone).

Health care personal explain to this study that:

Yes it is exactly hot and harsh weather is among the causes of meningitis. But you there are more clinical factors involve also. But any way no doubt about hot environment, too much crowd in a place without proper ventilation can also serve as contributing factor for the causes and development of meningitis (CM02- Informant from Zamfara central zone).

Perception of Disease Severity

This study engages the respondents that participate in this study to investigate their perception about the severity of meningitis type C disease in their respective areas or location. Therefore, respondents of this study shade more light about how harsh and terrible meningitis disease is across the entire Zamfara state in the northern part of Nigeria

Interview with Informant from Zamfara central explain to this study that:

There is no disease that you can compare it severity with meningitis. This is what we usually called or term as annoba (disaster). Look it is not like malaria or common fever, look this one kills instantly. I mean it usually comes with death. So the moment you hard the breakout of meningitis so expect death everywhere. It is term as a period of disaster wallahi ko. It is very severe it is very sad it kill especially the young children (PDS03- Informant from Zamfara central zone).

Another Informant confirmed from his perception about meningitis disease severity and note that:

Meningitis is very worrisome. It is very terrible and worries us when there is break up. That is why you see government and partnership with community leaders and many stakeholders are joining hands together when it is a period of hot season to provide vaccination services against meningitis disease. Because this new type of the disease that is type C meningitis we experience is quite different with the one we usually know. This one is very severe and kills instantly. Its severity is what terrifies us and it is what makes a lot of casualty (PDS03- Informant from Zamfara central zone).

In a very similar way another Informant added that:

Meningitis is a serious disease. Due to the cases of meningitis we experience almost every dry or drought season many of our young children die. Yes because they

are mostly affected. Do you know something? If have a child that is less than five years of age you do not consider that you have a child till he passes through various meningitis struggle. Because meningitis kills a lot of them at that age circle. Some of them do not survive the disease episode due to its severe consequences among the children less than five years or yes it can be up to ten years they are all children (PDS03- Informant from Zamfara north zone).

Another Informant reported that:

Due to the severity of meningitis a lot of patients suffering from the disease lost their sight and hearing due to the damage the disease done to the organs performing such function. You know the disease is best at attacking such sense organs and in most cases if patient recover he or she begin to fell such kind of deformity. In cases among the children it easily results to the death of the child (PDS03- Informant from Zamfara central zone).

Interview results indicate that:

Honestly meningitis is very disturbing and causes a lot of suffering among the people. Many people taste the severity of the disease. It is a social problem causes a lot of social suffering and consequences. The severity of the disease is socially disturbing as you know it mostly affected by younger ones at their teen age. So it is disturbing (PDS03- Informant t from Zamfara west zone).

It is also confirmed that

Meningitis disease severity increases due to the harsh temperate condition. Anytime or each year that comes with extreme heat whether condition cases of meningitis would be worst. That is why you see this year that we experience extreme hot season the cases of meningitis are even worst if we compare with what we witness before. The severity of this type C meningitis is even worrisome and we attributed it to too much hot weather in the area. So you see the way the weather is very harsh the same way the disease would be so disturbing (PDS03- Informant from Zamfara central zone).

Another Informant of this study stated that:

Due to the severity meningitis type C disease there is evidence that a substantial number of people died as a result of the disease. There is also believe that this consequences and or suffering continue to increase due to the change may be as a result of global warming that introduces to us new kind of heat season that we don't know before. Anyone who witness or observe the level of heat this year most understand that something unusual with regard to the heat season related diseases may likely to occur. With this expectation we receive type C meningitis that is very different with usual one in terms of severity and social consequences (PDS03- Informant from Zamfara north zone).

Health Seeking Practices

This theme focus on the health care seeking practices among the participants of this study towards meningitis type C in Zamfara state North West Nigeria. Interview was conducted with several persons in the study area to find out how they respond, manage or treat meningitis. It is base on this

subject matter that those that participated in the study reveals and share information to the best of their knowledge.

Interview with the participant of this study informed that:

We first go to the clinic when we were very sick. Not only on meningitis alone includes all other disease that comes. So I use to it going to clinic for whatever kind of disease I and my family experience. But you know in case of this meningitis it is not even advisable to seek treatment somewhere before it is not everywhere that you find it. There is also awareness and public enlightenment when it is season for the disease for people to visit any nearby clinic. To my understand that is why I used to it that is visiting hospital any time I have any disease challenge including type C meningitis (HSP04- Informant t from Zamfara central zone).

Another Informant averred that

Hospital is the best option I use to patronize when there is meningitis case. Going to hospital when you are suffering from meningitis is not only the good option but also reliable. Because not everywhere you go that you find meningitis vaccines especially when it is not a hot season. Medicine vendors are not use to keep the vaccines all the time due low patronage. You know the vaccines are only available some time if there is outbreak of the disease. Sometime you have to wait for supply even in the hospital. That is one of the reason when there is outbreak before action taken a lot of people especially children die. You know, look for example when there is out break for this type C meningitis they said all the vaccine available in the world is not enough to treat the whole cases of Zamfara state. This is also another reason that leads to huge casualty across the affected states nationwide. For this reason if you go to hospital even if there is no vaccines available I think they may have some first aid treatment they provide or render to you pending the supply or provision of the said vaccines. So hospital is the safe place to me that is why I choose it as first treatment seeking option not only to meningitis but also to all other disease related cases (HSP04- Informant from Zamfara central zone).

But in a different opinion another Informant reveals that:

What I first do is to treat myself first in the home. When the disease persists after some time I than sought another alternative may be using drugs or some vaccines available. Going somewhere when I am sick or one of my family are sick is a big difficult for me. This is due to some reasons that I may not be able to reveal or inform to you. So that is why I may use the available option I have at home and treat whatever type of disease or illness my family is suffering from. This is because revealing the failure for me to report to somewhere else when we are sick seeking for treatment to my own understanding is like I am reporting my creator (Allah) to you which to my own believe most be avoided (HSP04- Informant from Zamfara central zone).

Another Informant also informed that:

I use drug shop to my medicine for me and my family when we are sick. There is a lot of medicine vendors stores here that if you report whatever type of illness or disease they have something very effective to you that will deal with

the disease. This is also to inform to you that with an affordable rate or price that someone at this or our level can pay for. That is why I choose and feel very comfortable on my own side to visit any medical vendor shop or store to report my case of whatever type of illness I have and they attentively look into my case and address it. That is all and that is the reason that I use going to that place as my first option or choose of health care treatment (HSP04- Informant from Zamfara north zone).

Another Informant said that:

There are some circumstances that I go to medicine shop to report for any disease or illness. Such circumstances include perceiving that the disease I am suffering from is not very severe or medicine store can handle it enough. But cases that are severe by their symptoms may refer to nearby clinic or hospital. Even if I am away or out of the town that when I travel, if my wife inform me about any illness one of the family member is suffering from I first ask the level or seriousness of the disease that is the perceive severity or dangerous nature of the disease. So it is from here that make me to decide where to go for treatment. In short case that I understand is very light I treat them at medicine store or even using self medication at home but those that are serious, the one like meningitis with serious signs of death treat I urgently for that case refer myself to hospital (HSP04- Informant from Zamfara north zone).

In a very similar case one Informant also confirmed that:

My decision on health care seeking practices is solely motivated and driving by the severity of the disease. You know there is cases that are not even handle at medicine shop, pharmacy or chemist. You know this kind of meningitis type comes with some unusual symptoms that is difficulty in breathing. So in that case what a vendor medicine store can do to you. That case you see has to be refer to hospital and has may be oxygen assistance to the patient, you know, but as I have said some minor disease with little severe signs you can handle it even at home. There is even meningitis case that is not severe before the breakup of this type. So you see that type you can handle it here without much difficulty (HSP04- Informant from Zamfara central zone).

Informant from Zamfara west zone indicated that:

Cost of the treatment decide in most cases which treatment option I may likely look upon to. If the treatment is too cost that I cannot afford than I have to use the one available to me. As I am now I don't have any treatment option until after the disease or illness arrived. If disease comes to me or my family members I use the financial ability I have at disposal to manage the disease and leave or allow the Almighty God (Allah) to the rest. Because you know you cannot go beyond what you can't and you cannot pass the limit of Allah. Allah himself stated in his holy book that he cannot put upon you the responsibility that you cannot afford or take care of. So as our basic responsibility to look into our family we do the best within our limit to treat them with best option of health seeking practices when they are sick (HSP04- Informant from Zamfara north zone).

It is also revealed by another Informant that:

Distance of the health care centres where treatment and management of the disease are provided is the driving factor for the choice of health care seeking practices. There is a case for example that needs urgent attention even at home. So when you decide to travel for a long distance looking for another treatment option may likely to put yourself or the patient in trouble. For example the case of meningitis which the major case is as a result heat season and you decide to take the meningitis patient let say to Gusau the state capital going through all those hot and sunny situation it means what, it means you are putting the patient into the way of causing his life especially if the patient is a small child. But if you are lucky enough the vaccination are within your area than you can you it. As it is in the case of meningitis they use to provide sometimes with vaccines in our area especially when it is a hot season. I have no problem of what kind of health seeking behaviour I adopt but my problem those factors that I just mention to be sincere is what determine my decision of health care seeking practices (HSP04- Informant from Zamfara west zone).

Health care personnel in the state informed that:

Many people patronage modern health care services especially when it's involve the case of meningitis. But some people do not accept any idea that come from western countries that they believe it as anti Muslim and it is a plot to destroy Muslim community. That is the only reason for those whose do not patronage the modern medicine or meningitis vaccination. So we are facing with this misperception of people about this vaccination. So we are making effort to enlighten people about the importance of using meningitis vaccination especially the one provided at various health care centres. You know it is worrisome for the people to you know when there is outbreak of the disease and means available to manage or take care of the said disease people refuse to patronise or honour it. Most of those people with this habit usually prefer to keep the patient at home if necessary to provide or go into home management of disease control (HSP04- Health personnel Informant).

It is for this reason that some of the respondents disclose their preparedness to rely on home management of the disease. Interview conducted with some of the respondents informed that:

You see this meningitis vaccination you are talking about is supply and provided by western countries. So how to do believe with those countries that supported the killing of people across the world insulting the religion of Islam to provide you with vaccine, medicine or drugs that manage your disease. If you believe in this and go into it to my own believe that is the major mistake one can make in his entire life time. So you see that is why I solely rely to what remedies we have and provide locally for whatever kind of disease we are facing in the family. So think is better to manage it at home than take myself and family to something that causes my death (HSP04- Informant from Zamfara west zone).

In a very similar instance this study found out that:

I believe totally in prayer when I am sick. Or do think there is anything or something that are wonderful in managing the disease of whatever type than prayer and total surrender to God Allah the Almighty. The answer, you know is big no. Or there is tell me I am listening. So as you see us here we just pray when one of us is sick and Allah in his mercy intervened and solve whatever disease it is. And we are seeing the result as Allah says when you rely on him He will give you the way out at any difficult moment you find yourself (HSP04- Informant from Zamfara central zone).

Discussion

The main objective of this paper is to explore the knowledge, attitudes, and practices towards type C meningitis in Zamfara State to identify social and behavioural factors that may contribute to the spread of the meningitis disease and likely belief attitudes and people's practices that might improve health outcomes. It was based on this that this study was conducted. Interview was carried out and the results show people knowledge, attitude and practices towards meningitis.

Results from the interview conducted during this study shows that people are well informed about the major signs and symptom of meningitis. Though some of the responses from those that participated in the study reveal some symptoms that are contrary to the clinical side, however, a substantial major of the respondents indicated the correct sign and symptom of meningitis. Those symptoms include; hot body, waist pain, severe neck stiffness, severe headache, serious body pain, loss of appetite, and in some cases difficulty in breathing. This study observed that due to the knowledge of respondents about meningitis symptoms it greatly assists in seeking health care for the prevention, treatment and management of the disease. Knowledge about sign and symptoms of meningitis is very essential because it is the assumption of this paper that, it is only through such understanding of the symptoms that people define and understand meningitis. People across different senatorial zones reveals signs and symptoms of meningitis and it is of our believed that only through such understanding that people can take proper or provide necessary measures for meningitis control, elimination and prevention (Ranasinghe et al., 2015; Mayala et al., 2015). This finding adds more value to health belief model.

Further finding from the research indicate that respondents of the study disclose several causes of meningitis. Some of those causes include; hot season, sleeping in a congested room without proper ventilation and contact with infected person, attitudes among several others. Some of the causes slightly different with medical domain include dirty environment, religious believe and witchcraft. But considerable number of the respondents was clearly understand and stated exactly the causes of meningitis as informed by scientific and medical experts. Results from the interview demonstrate that people's attitude of refuse to take vaccination despite knowing the danger of meningitis is the major cause of the disease. This is consistent with finding of Courtenay (1998) that perception of disease risk among college student is not linked to healthier behaviours even when the perception of risk is high. Although his finding shows that, those students consider themselves at risk for HIV because of their unsafe sex behaviours, they still do not practice safer sex behaviour.

This paper found out that meningitis is a very severe disease as mentioned by those that participated in the study. The disease severe was also observed by this research as a driving factor for seeking health intervention. This finding is also similar to the concept of perceive susceptibility of health believe model. According to the concept the greater the household perceived risk, the greater the likelihood of household engaging in health behaviours to decrease the risk of the disease. According to people

perception about the vulnerability is what prompts men who have sex to use condoms. Similarly stated that it is what prompts people to vaccinate against hepatitis B to decrease the risk of the disease. Correspondingly

Finding from this study shows that people in the study area engage into several practices to manage and treat meningitis. Some of those practices includes; going to hospital, clinic and medicine stores or chemist. Other practices employ for the treatment of meningitis consist of self medication using both local and modern medicine and in some cases define as home management of disease. Other respondent reported that they do not employ any method for disease control apart from prayer and total submission to God the Almighty.

Recommendation and Conclusion

Meningitis disease is a major treats to health in parts of sub Saharan Africa. It is a serious viral or bacterial disease in which an outside layer of the brain or spinal cord becomes affected and swollen, and can lead to death of the patient. This study was conducted to explore knowledge, attitudes, and practices of people in Zamfara State with main purpose of identify social and behavioural factors that may contribute to the spread of the disease and likely belief, attitudes and peoples practices that might improve health outcomes.

Base on the findings of this study, there is enough knowledge about sign and symptoms of meningitis. Though there is some element of mentioning symptoms that does not correspond to clinical realm but there is significant improvement about respondent's knowledge of the disease. This study shows that there is still misunderstanding about the causes of meningitis. This study recommends public enlightenment campaign to sufficiently inform people about correct causes of meningitis. There is also urgent need for the authority concern to make critical response to address the severe nature of meningitis type C as informed by those that participated in the study. On the treatment practices to manage meningitis, part of the results indicate that lack of resources to treat meningitis and distance location of health facilities is the motivating factor for their treatment choose. It is also recommended to authority concerns that adequate provision of vaccination is needed across the state. There is also a need to reserve those vaccines on standby in case of any breakup. In conclusion

Furthermore, the findings indicate that people in the area does not engage into proper health preventive practices such as vaccination services against meningitis. This study find out that still people in the area use options like home management of disease and some of them does not engage any treatment option. It is in view of the above that this paper recommends a comprehensive awareness campaign to educate and enlighten people about taken proper treatment option for the treatment and management of meningitis. This awareness should involved enlighten people about susceptibility and vulnerability of meningitis. Possible social consequences of the disease which include morbidity and mortality should also be informed.

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