Mass Media Health Promotion Campaign as Determinant of Behavioural Responses to the Prevention of Lassa Fever Epidemic in South-West, Nigeria

OKEYA, Adenike Omotayo, *PhD*
Department of Communication and Media Studies
Ajayi Crowther University, Oyo State
&
AKINWANDE, Anjuwon *PhD*
Department of Mass Communication
Babcock University, Ilisan Remo, Ogun State

Abstract
The study focused on mass media health promotion campaign as determinant of behavioural responses to the prevention of Lassa fever epidemic in South-West Nigeria. The study adopted survey design while questionnaire was used as instrument of data collection. The findings showed that there was a significant influence of health promotional messages on the prevention of Lassa fever infection (β =0.238, $t_{(854)}$=6.898, p<0.05). There was a weak significant influence of health promotional messages on the attitude of residents towards Lassa fever infection (β= 0.362, $t_{(854)}$=11.028, p<0.05). In addition, the combined adoption of television and radio (*Adjusted* R^2= 0.006, $F_{(2, 788)}$ = 3.409, p <0.05) influenced respondents behaviour towards Lassa fever infection. It was also discovered that radio is the most preferred channel for the Lassa fever media campaign. The study concluded that an increase in health promotional messages on Lassa fever resulted in improved behaviour of respondents towards the infection. In addition, residents adopted washing of hands more than other preventive measures against Lassa fever virus. It was recommended that an increase in mass media health promotional messages on Lassa fever by broadcast stations would create more awareness on Lassa fever preventive methods.

Keywords: Health Promotion Campaign, Lassa fever, Attitude, Behaviour, Mass Media, Television, Radio, Health Communication

Introduction
Health promotion as observed by the United State Department of Health, Education, and Welfare (1979) "is a combination of health education and related organizational, political and economic programs designed to support changes in behaviour and in the

environment that will improve health" (p.19). Health promotion is an applied field of knowledge and practice. Green (1980) says health promotion is any combination of health education and related organisational, political and economic interventions designed to facilitate behavioural and environmental changes that will improve health" (p. 20). That is, it is designed to support changes in behaviour and in the environment.

For health promotion, the target is to enable people to increase control over their health and its determinants, and thereby improve their personal and essentially public health in general (Participants at the sixth global conference on health promotion, 2005). Health promotion was defined in the Ottawa Charter as "the process of enabling people to increase control over, and to improve, their health. Therefore, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being" (World Health Organization 1986).

Research has indicated that effective promotion of health and communication creates an audience perspective which involves audience preferred channels to programmes, formats and context because it involves working with people to prevent, prepare for, and respond to disasters so as to reduce risk, increase resilience and mitigate the impact of disasters on health. In addition, health promotion is an integral component of health communication, health protection, disease prevention and treatment. It is recognised as a core competency in public health and health promotion practice and it plays a pivotal role in achieving public health objectives.

The mass media can be an effective means to deliver health messages. Akpobo (2015) explains that "the mass media comprise all technological or mechanical devices utilised by a source with the intent of reaching diversified and heterogeneous audience with the same messages simultaneously" (p. 2) while Okunna (1999) indicates that the mass media which include television, radio and print are a variety of channels through which mass communication takes place and they are also used to disseminate health information to the people in order to influence their decision in adopting recommended health practices. This is done by making the people participate in information, education and communication activities, thereby creating awareness of health issues that influence their health attitudes and behaviour.

The mass media can also be used to communicate and create interactive activities among large number of audiences in different languages. It can be in pictorial messages or the use of various types of social media, popular among them are Facebook, snapchat, Instagram so on. Mass media use different approaches such as advertising, group activities and entertainment to achieve effective dissemination of health information. Heiner and Jorg (2009) aver that "mass media are media which have their proper programme and constitute their own audience" (p. 1). That is, the term mass media refer to communication that operates on a large scale, reaching and involving virtually everyone in the society to a greater or lesser degree. Mass media are known to influence the social, cultural, economic, spiritual, political and religious aspects of society as well as personal thought, feeling and acting.

Mass media feed people with the latest information and create the need for change in contemporary society. They are still known to have both positive and negative roles in the society because of their pervasive nature which makes its functioning to be very subtle. The mass media play a vital role in dissemination of information which is one of the reasons why it is called the fourth pillar of democratic policy (Adern, Orhan & Enderhan, 2013, p. 5). Thus, it can be said that the media are part of the institutions of state, which inform the society, notify them, enable an individual to participate on public matters and inspect the management on behalf of public.

Radio, television, films and the printed word reach all of us in this age of information. Each one of these media strives to perfect its modes of communications to become more effective as a medium of information dissemination, to serve as a powerful source of knowledge. In other words, we are living in an age of information revolution where information plays an important role in each and every sphere of life and the newspapers, radio and television are all well-known resources for getting information. While it is true that the media provide information, with the view of influencing individual or community-based behaviour, it remains to be known the degree to which this function, among others, is effectively performed by the media. Precisely, to what extend have the mass media promotion campaigns on Lassa fever epidemic in Ekiti and Ondo State, Nigeria been effective in effecting behavioural change?

Lassa fever is an acute viral haemorrhagic fever (VHF) that is caused by the Lassa virus. The illness was discovered in 1969 when two missionary nurses died in Nigeria. The virus was named after the town of Lassa in Borno State, Nigeria where the first cases originated. According to the Public Health Muskegon County Lassa Fever Fact Sheet (2016), the virus, a member of the virus family *Arenaviridae*, is a single stranded RNA animal borne virus which spreads to man from the multi-mammate rat (*mastomys natalensis*). This is a common rodent in equatorial African, ubiquitous in human households and even eaten as a delicacy in some areas.

Signs and symptoms of Lassa fever typically occur one to three weeks after the patient is exposed to the virus. For the majority of Lassa fever virus infections (approximately 80%), symptoms are mild and remain undiagnosed. Mild symptoms include slight fever, general malaise and weakness, and headache. In 20% of infected individuals, however, disease may progress to more serious symptoms including haemorrhaging (in gums, eyes, or nose etc.), respiratory distress, repeated vomiting, facial swelling, pain in the chest, back, and abdomen, as well as shock. Neurological problems have also been described, including hearing loss, tremors, and encephalitis. Death may occur within two weeks after symptom onset due to multi-organ failure.

A health communication intervention strategy that can adequately address health attitude and behavioural change issues is mass media health promotion campaign. Previous work in health communication theory and message effects research has

shown that individuals who perceive campaign messages to be salient and personally relevant to their lives report greater attention to and comprehension of the message, which ultimately leads to greater change in the targeted attitudes and behaviour (Petty & Brinol, 2002; Petty & Cacioppo, 1986; Rimer & Kreuter, 2006).

Rogers & Storey (1987) further observe that "campaigns are intended to generate specific outcomes or effects in a relatively large number of individuals usually within a specified period of time and through an organised set of communication activities" (p. 821). This helps and empowers individuals and the population to have control over their health thereby making informed decisions about their health. Attitudes that are changed through this central route are predictive of behaviour and more persistent over time in comparison to attitudes altered through the peripheral route (Petty, Brinol, & Priester, 2009). Communication campaign remains an important way to prevent Lassa fever. It is in the light of this that the study examined the mass media health promotion campaign as determinant of behavioural responses to the prevention of Lassa fever epidemic in Ekiti and Ondo State, Nigeria.

Statement of the Problem

Worldwide, an estimated 2 million people are infected each year resulting in 5,000 to 10,000 deaths (McCormick, 1999). It has been estimated that 300,000 to 500,000 cases and 5000 deaths from Lassa fever occur yearly across West Africa (Ogbu, Ajaluchukwu & Uneke, 2007), However, health organisations and NGOs such as World Health Organisation (WHO) United Nations Children's Fund (UNICEF), the Federal Ministry of Health and Information have carried out health interventions and programmes on Lassa fever. The programmes were done through distributing posters, leaflets, holding seminars, conferences, workshops, and the use of radio and television programmes to sensitise the public on things to avoid. Investigation has also shown that there is low level of awareness about the existence, nature, prevention and cure of Lassa fever disease (Adebimpe, 2015).

Research has also indicated that after targeted health communications interventions, people with low education and income remain less knowledgeable and are less likely to change behaviour than the highly educated ones (Healthy People, 2010). The differences in this disparity have shown that people with low health literacy are more likely to report poor health, have an incomplete understanding of their health problems and treatment. The behaviour of the people in Ekiti and Ondo State to Lassa fever has a lot to do with its prevention and this is where the mass media comes in, the mass media provides an important link between the residents and vital health information. In addition, it is known to persuade the audience to adopt new behaviour by giving information on new diseases and where to seek help and keep the public updated about campaigns. Appollonio (2009) affirms that media campaigns are widely recognised as useful health tools because they can change health behaviours without the need for multiple channels of communication. The mass media can change

the people's behaviour through various campaigns done on air to alert them about the danger of this disease.

In spite of all these efforts, it remains to be seen what the behavioural responses of respondents in Ekiti and Ondo State is, to the mass media health promotion campaign on Lassa fever. Therefore, it became necessary to investigate the influence of the mass media health promotion campaign on the behaviour and attitude of the respondents to the prevention of Lassa fever in Ekiti and Ondo States, Nigeria. This study intends to establish if the mass media health promotion campaign in Ekiti and Ondo State, Nigeria influenced the behavioural responses of the people in terms of their knowledge, attitude and practice with respect to Lassa fever prevention. The question then arises: has the media campaign in the Ekiti and Ondo States helped in changing the orientation of the audience to the scourge of Lassa fever?

Hypotheses

Ho_1: Health promotion messages on Lassa fever do not significantly influence the prevention of Lassa fever infection.

Ho_2: Mass media health promotion campaign does not significantly influence the attitude of the respondents.

Ho_3: Mass media health promotion campaign does not significantly influence the behaviour of the respondents.

Ho_4: Mass media health promotion campaign and the public's behavioural responses does not significantly influence the prevention of Lassa fever in Ekiti and Ondo State, Nigeria.

Theoretical Framework

Like any other academic endeavour, this work is pegged on a theory, which is the Social Cognitive Theory. The Social Cognitive Theory is concerned with behavioural effects which have a strong impact which moves from a consideration of the often limited consequences of media depictions to the purposive development of media campaigns to change health-related behaviour (Anaeto *et al.,* 2008).

The Social Cognitive Theory is used in designing a campaign and is concerned with how individuals make sense of social situations. According to Fiske and Taylor (1991), the social cognitive approach focuses on individual cognitions or thoughts as processes which intervene between observable stimuli and responses in specific real world situations.

The Social Cognitive Theory is relevant to the study in that many of the people used are those that are seen, heard or read about in the mass media. They might be presenters of radio or television shows or programmes and it is believed that people change their behaviours based on the observation and what these models say or talk about. In addition, it is through these programmes that the people are aware of Lassa

fever, what causes it and ways of preventing its reoccurrence by promoting awareness through various programmes.

Literature Review

Concept of Mass Media

Mass media are communication devices utilised to disseminate the same message/ information to different people in different places simultaneously. It is also a means of spreading information and educating people about happenings around them. According to Shirley (2012), mass media are everywhere you are (p. 2). It further posits that today‟s adults spend more than half their waking lives with the media more than they spend sleeping (p. 5). The mass media are very powerful tools because they are the vehicles for educating, informing and entertaining people.

Asemah (2011) opines that the media reflect the events in the society, thus both the print and electronic media mirror reality. According to research, mass media are an inseparable part of the human life. In addition, mass media are effective means of communicating, spreading information, advertising, marketing and in general expressing and sharing views, opinions and ideas to people.

In the words of Akpobo (2015), the mass media comprise all technological or mechanical devices engaged by a source with the intent of reaching a diversified and heterogeneous audience with messages simultaneously (p. 2) while Okunna (1999) in Akpobo (2015) explains that mass media are a variety of channels through which mass communication take place (p. 2). This shows the importance of the mass media in our society. According to Littlejohn (1992), the mass media makes it possible for millions of people throughout the world to be in touch with nearly any spot on the globe (p. 341). Since the world is gradually turning into a global village.

McQuail (1994) further defines mass media as an organised means for communicating openly and at a distance to many receivers within a short period. This further buttresses the importance of the mass media and their useful in communicating to the public the message about Lassa fever; what it is, how it can be contacted and the preventive measures that can be taken. The idea is that since people are moved by what they see and hear, and then the mass media constitute useful tools of communicating information.

Daramola (2003) opines that the mass media can be classified in terms of levels or degrees of impact (p. 96). The mass media are known to shape attitudes, perceptions and beliefs of the people and this is achieved by providing new and compelling information that they may not be familiar with. The mass media are powerful tools for health promotion campaigns because accurate information will be provided for people to know what is going on around them.

Health Promotion: A Conceptual Clarification

There are many definitions proffered by different scholars of health promotion over the past two decades. Lalonde (1974) defines "health promotion as a strategy aimed at informing, influencing and assisting both individuals and organisations so that they will accept more responsibility and be more active in matters affecting mental and physical health" (p. 3). To the United States Department of Health, Education and Welfare (1979) "it is a combination of health education and related organisational, political and economic programmes designed to support changes in behaviour and in the environment that will improve health" (p. 19) while Green (1980) sees it "as a combination of health education and related organisational, political and economic interventions designed to facilitate behavioural and environment changes that would improve health". All the definitions above have to do with strategies employed by health communicators to motivate people attention in health related matters.

To Lanbote and Little (1992), it is seen "as any activity or programme that is designed to improve social and environmental living conditions such that people's experience of wellbeing is increased" (p. 29). In order words, health promotion is very important in any society if the living conditions must improve health wise. O' Donnell (1989) further described it "as a science and act of helping people choose their lifestyle to move toward a state of optimal health".

From the above definitions, it could be deduced that health promotion techniques differ in goals, actions, objectives and processes. The researchers see it in different ways to suit their own understanding but at the same time it all boils down to the same conclusion of the importance of health promotion.

The term health promotion is often used as with health education. The definition of health promotion is more than just educational interventions for example, Leavell and Clark (1965) defined health promotions as:

> Any intervention directed to maintain the health status of individuals and groups. This implies that the promotion of health includes healthy and secure work conditions, education, adequate housing, nutrition, recreation etc. and not be disease specific (p. 14).

The American Public Health Association (1987) in Ajala (2005) stated in its background paper establishing criteria for the health promotion curricula stated that health promotion:

> Denotes a wide variety of individual and community efforts to encourage or support health behaviour and environmental improvement where these goals and objectives have been previously determined, usually on the basis of epidemiological data, to be important (p. 10).

From the above it can be concluded that health promotion is broader than health education and that health education is a part of health promotion. Health education are messages that serve as inputs to health promotion activities such as projects and

programmes. The Joint Committee on Health Education Terminology (1991/92) further defines health promotion as the aggregate of all purposeful activities designed to improve personal and public health through a combination of strategies including the competent implementation of behavioural change strategies, health education, health protection measures, risk factor detection, health enhancement and health maintenance. In essence, health education is usually used to influence health practices and the improvement in the quality of life of the people.

The World Health Organisation (WHO) have acknowledged the importance of health promotion and its preventive measures in improving health and wellbeing by addressing health and reducing chronic injuries and diseases thereby enhancing economic growth in the country. A large proportion of the disease that we have in Nigeria is attributed to lack of proper hygiene and lifestyle related behaviour such as physical inactivity, obesity, overweight and bringing spirituality into things when we are supposed to act otherwise. The other health challenges, we are facing today according to Northern Territory Department of Health Promotion Strategic Framework 2011-2015 in the Department of Health and Families Annual Report 2008-2009, A healthier future for all Australians final report and Lin, Fawkes and Hughes (2008) national prevention summit discussion paper are:

1. The gap between indigenous and non-indigenous health status and outcomes.
2. Increasing levels of chronic conditions, disability, injury and mental illness.
3. Growing inequities in health and other social factors between different population groups and between and within countries.
4. Increasing environmental degradation and climate with severe health consequences.

In Nigeria, where there are different ethnic groups and tribes, the challenges of passing information to the people may be difficult because of different beliefs and value systems. In line with these, the Ottawa Charter for Health Promotion (WHO, 1988, p. 2) outlined five areas for health promotion action to actually state what it is and its importance and these include:

1. Health promotion helps to build healthy public policy
2. It reorients health services
3. It creates supportive environment
4. It strengthens community action and
5. It develops personal skills

In addition to these, the Ottawa Charter (p. 2) further states that health promotion is about:

1. Empowering individuals and communities to assume more power over personal, socio-economic and environmental factors that affect their health
2. Providing supportive social, economic and physical environment through diverse but complementary strategies
3. Working in collaboration with a wide range of sectors
4. Enabling individuals to take control over the determinants of health

5. Equipping systems and sectors to address the social determinants of health
6. Sustaining initiatives that bring about changes in the people
7. Fostering spiritual, mental, social and spiritual health.

These further collaborate the essence of health promotion because it helps people make informed decisions when it comes to their health. Health promotion has also helped many people to change or modify their lifestyle by staying away from careless habits thereby preventing fatal diseases. Health promotion can be observed from the medical approach whereby, medical intervention is required to prevent ill-health or premature death and behaviour change approach whereby, experts use communication to educate, persuade and motivate the people.

From the educational approach information is given through interpersonal channels, small groups and mass media so that people can make informed decisions and choices while from the societal or social change approach, the focus is on shaping the health environment by creating supportive social and physical environment and from the empowerment approach, the role of health promoter as the facilitator and catalyst helps in promoting public involvement and participation in decision making by discussing health related issues whereby the people are counselled well.

Health Promotion Campaigns and Messages

Health promotion campaign are usually sponsored by the government or medical charities during which information is provided using various kinds of media to disseminate information to people on how to live healthy especially when there is an outbreak of disease. It is their responsibility to warn people and also encourage them to take practical steps towards a healthy lifestyle. According to design your health campaign 2009, a mass media campaign can get a message out to a wide audience, the big challenge is how to encourage people to act on these health messages. This is where the issue of individual differences comes in; because how people react to issues differ in so many ways.

The term health promotion campaign or mass media campaign refers to a form of advertising designed specifically for a target concept (Amanda, Bella, Michelle & Max, 2004, p.1). Rice & Atkins (1994) further observes that a campaign is "purposeful attempts to inform, persuade or motivate behaviour change in a larger audience within a given time period". This shows the importance of campaign because it informs, persuades and educate the general public.

The role and effectiveness of campaigns using mass media health promotion according to Health Development Agency in their briefing of 2004 are:

1) Mobilising and supporting local agencies and professionals who have direct access to individuals within the target population
2) Bringing together partnership of public, voluntary and private sector bodies and professional organisations

3) Informing and educating the public but also setting agenda for public debate about the health topic thereby, modifying the climate of opinion surrounding it.
4) Encouraging local and national policy changes so as to create a supportive environment within which people are more able to change their behaviour.

Furthermore, a campaign must be purposive because the outcomes may be extremely diverse ranging from individual level cognitive effects to societal or structural change. Secondly, a communication campaign or mass media health promotion campaign is aimed at a large audience. Rogers & Storey (1987) note that the word „large' is used to distinguish campaigns from interpersonal persuasive communications by one individual (or a few people) aiming to influence only a few others. Thirdly, it must have a specified time limit while the fourth point is that a communication campaign must comprise a designed set of organised activities which is most evident in message design and distribution. That is, the messages are organised in terms of both form and content, and responsibility is taken for selecting appropriate communication channels and media.

As Rogers & Storey (1987) point out, even those campaigns whose nature or goal is emancipation or participation involve organised message production and distribution. In summary, the term communication campaign according to research implies that it must be well planned to generate specific outcomes, must involve a relatively large number of individuals, must be within a specific time period and it must use an organised set of communication activities. Health promotion messages as stated by WHO must support people to adopt healthy lifestyles therefore the message must be attractive, interesting, entertaining and stimulating to the people for it to be effective.

Review of Empirical Studies

An exploratory study by Rachele and Andria (2010) in a simple methodology for piloting and evaluating mass media interventions noted that to develop effective mass media health campaigns it is important to explore the behaviour-change techniques that make campaigns more or less effective. The exploratory study observed the behaviour-change techniques employed in two current healthy eating television programmes, and mapped these techniques onto key theoretical frameworks. Interviews were then conducted with six participants who watched the programmes, to identify which techniques were perceived to be more and less effective and to identify any changes in the behaviour change techniques used in the programmes and factors perceived by the participants to be particularly influential upon their healthy eating.

The two programmes were found to use similar behaviour-change techniques, with a heavy reliance on providing general health motivation. Interviews revealed that participants perceived several specific barriers to eating healthy foods, felt the need for more specific guidance and emphasised the importance of identifying with the role models used in the programmes. Recommendations for future mass media health

campaigns include the need to educate individuals about how to overcome specific barriers that they might face when trying to eat a healthy diet and to include a wider range of role models to encourage the audience to identify with the programme participants.

Using meta-analysis, Ashley, Thomas, Bonnie and Carolyn (2016) measure the effectiveness of mass mediated health campaigns. The meta-analytic review was undertaken to examine the effects of mass communication campaigns on changes in behaviour, knowledge, and self-efficacy in the general public. A review of the academic literature was undertaken and identified 1,638 articles from 1966 through 2012. Using strict inclusion criteria, 63 studies were included for coding and analyses. Results from these efforts indicated that campaigns produced positive effects in behaviour change ($r = .05$, $k = 61$) and knowledge ($r = .10$, $k = 26$) but failed to produce significant increases in self-efficacy ($r = .02$, $k = 14$). Several moderators which include health topic and the theory underlying the campaign were also examined in relation to campaign principles that were prescribed to increase campaign effects. The study recommended that more effort should be put into mass media campaign as the results would always be positive if it was well planned.

Aigbiremolen, Duru, Awunor, Abejegah, Abah, Asogun and Eguavoen (2012) studied Knowledge and Application of Infectious Disease Control Measures among Primary Health Care Workers in Nigeria. The objective of the study was to investigate the knowledge and practice of Lassa fever control among primary care health workers. The study was a cross-sectional survey of health workers in 34 primary health care centres in Esan West and Esan Central Local Government Areas of Edo state. The Local Government Areas were selected from Lassa fever-endemic areas in the state and studied with 231 copies of a self-administered semi-structured questionnaire. The knowledge of respondents was assessed using a ten-question scoring system.

The finding showed that all respondents were aware of Lassa fever and 77.9% of them had good knowledge of the control of the disease while 9.1% had poor knowledge (There was 100% awareness of Lassa fever. The most common source of information about Lassa fever was from the mass media- television, radio and print media (58.8%); this was followed by continuing professional education (22.5%) while the least source (10.4%) was from colleagues). Majority of health workers interviewed in this survey had a good knowledge about Lassa fever infection (77.9%) while a small proportion (9.1%) of them had poor knowledge. There was no significant association between level of knowledge and designation of the health worker (χ 2=8.99, df =4, $p>0.05$). Only 13.0% and 16.9% of them regularly practiced barrier-nursing and hand washing, respectively, as means of containing the spread of the infection. The study concluded that the level of general knowledge about Lassa fever was high. However, there was poor compliance with standard preventive practices. The study therefore recommended that there should be sustained education and re-training of Health

workers at the primary care level so as to curtail nosocomial transmission of the disease.

In another study titled, "awareness of Lassa fever in a rural community in South-West Nigeria", Ilesanmi, Omotoso, Alele and Adewuyi (2015) note that Lassa fever is an acute, virulent viral haemorrhagic illness with high morbidity and mortality rates. The study was carried out to assess the awareness of Lassa fever of a rural community in the south western part of Nigeria. The method used was a descriptive cross sectional survey of 122 respondents prior to a sensitisation seminar on Lassa fever and it was carried out at Ijebu–Owo, Owo in Ondo State. Descriptive statistics were done and frequencies and proportions were used to summarise variables of interest. Association between socio-demographic characteristics and awareness were explored using chi square. The Level of significance was set at 5%. The result shows that the mean age of the respondents was 54.5±19.2years. Of the 122 respondents, 50.8% were males, three out of four (73.8%) were married, and 87.7% had secondary education and below. Those who had previously heard about Lassa fever were 17.2%. In all 7(46.7%) who had tertiary education experience had previously heard about Lassa fever compared to 14(13.1%) respondents who attended secondary education and below ($p=0.001$). The study concluded that there was poor awareness of Lassa fever among members of the community. The study recommended that efforts should be made to increase the awareness of the populace through health campaigns, and to reduce the spread of both the vector and the virus.

Tobin, Asogun, Isah and Ebhodaghe (2013) carried out a research on assessment of knowledge and attitude towards Lassa fever among primary care providers in an endemic suburban community of Edo State. The aim of the study was to assess the knowledge and attitude to Lassa fever among primary care providers. Structured copies of the questionnaire were administered to consenting primary care workers in Private and Primary health centres in Ekpoma. One hundred and thirty-five (135) health workers participated in the study. One hundred and thirty-one (97.0%) respondents had previously heard of Lassa fever. Overall knowledge of Lassa fever was poor for 51 (38.9%), and fair for 54 (41.2%) and good for 260 (19.8%). Hand gloves were stated as the most useful personal protective gear when dealing with a patient with Lassa fever. Fifty-six (42.7 %) felt their level of knowledge was sufficient for them to safely and effectively handle a patient while 126 (96.4%) expressed their desire to know more about Lassa fever. In conclusion it was discovered that the primary care health worker in a rural area is the one most likely to be the first point of call for persons seeking orthodox medicine. Based on the findings, it was recommended that it is essential that people are adequately informed about the disease, its presentation and prevention.

Research Method

The research design adopted was the survey. The study areas comprised the six states in South-West Nigeria and according to the National Population Census (NPC, 2006), these states include: Lagos (9,013,534), Ogun (3,658,098), Osun (3,423,535), Oyo (5,591,589), Ondo (3,441,024) and Ekiti (2,284,212). The total population of South-West is 27,511,992. The sampling technique adopted for this study was the multi-stage probability sampling. The first step was the simple random sampling technique in which all the six states in the South-West were written in a paper, wrapped and put in a bowl, this was done to give each state equal chance of representation thereby eliminating bias. The researcher picked two slips out of the six that were in the bowl. The justification for the decision was because the resources and time required for the completion of the study could only allow for the adequate coverage of two states. From the above procedure, Ondo and Ekiti States were selected and therefore represent, South-West States.

The size of the two states selected for this study further made the researcher to randomly select two local governments each per state through simple random sampling technique; Ado local government and Ikere local government for Ekiti State and for Ondo State, Akure South Local Government and Akure North Local Government were selected. The fishbowl method was used to select the local governments in order to avoid bias. The justification for the selection was based on the resources and time for completion of the study.

Furthermore, it was from the selected local government areas that wards and streets were drawn to get the residents who formed the study respondents for this study. Subsequently, 10 wards were selected across Ekiti and Ondo State from the 57 wards. Proportional representation was used for all the wards because it was discovered that some local governments have more wards than others. The wards were selected using simple random sampling technique. The selected wards in each of the selected local government were further broken into streets.

The sample size for Ekiti State was calculated first using Saunders, Lewis and Thornhill (2009) formula. The first stage of the formula was used to obtain the estimation of respondents. It is as follows:

1st Stage: $p\% \times q\% \times \left[\frac{1.96}{5}\right]^2$

P% in this formula indicates the estimated proportion of respondents that have the characteristics under study; while q% represents the proportion of respondents that may not have the characteristics being investigated. Hence, p% is estimated to be 50%, while q% is estimated to be 50%. This is because it is estimated that about an average proportion of the population under study may have been exposed to the Lassa fever mass media promotion campaign.

$50\% \times 50\% \times \left[\frac{1.96}{5}\right]^2 = 2500 \text{ X } 0.153664 = 384$

2nd Stage: This stage factors in the earlier calculated value of *n* (384) into the next equation considering the population of Ekiti State.

$$n = \frac{n}{1+(\frac{n}{population})} \text{ where } n \text{ is } 384$$

$$n = \frac{384}{1+(\frac{384}{2384212})} = 384$$

3rd Stage: This stage ensures that the response rate is considered in order to adjust the sample size accordingly. The response rate for this study is envisaged to be 90%, this is because it is envisaged that

3rd Stage: $n^{a} = \frac{n \text{ X } 100}{re\%}$

$$n^{a} = \frac{384 \text{ X } 100}{90} = 427$$

Therefore, the sample size for Ekiti State is 427. Calculating the sample size for Ondo State following the earlier stated formula; the same first stage estimation which is 384 were adopted

2nd Stage: This stage factors in the earlier calculated value of *n* (384) into the next equation considering the population of Ondo State.

$$n = \frac{n}{1+(\frac{n}{population})} \text{ where } n \text{ is } 384$$

$$n = \frac{384}{1+(\frac{384}{344102})} = 384$$

3rd Stage: This stage ensures that the response rate is considered in order to adjust the sample size accordingly. The response rate for this study is envisaged to be 90%, this is because it is envisaged that

$$\textbf{3rd Stage: } n^{a} = \frac{n \text{ X } 100}{re\%}$$

$$n^{a} = \frac{384 \text{ X } 100}{90} = 427$$

Therefore, the sample size for Ondo State is 427.

Data Presentation and Discussion of Findings

Decision Rule

The pre-set level of significance for this study is 0.05. The hypotheses presume that there is no significant influence between the variables under consideration. If the p-value which indicates the significance or the probability value exceeds the pre-set level of significance ($p>0.05$), the hypothesis stated in null form will be accepted, however, if the p-value is less than or equal to 0.05 ($p\leq0.05$), the hypothesis will be rejected.

H_1: Health promotional messages on Lassa fever do not significantly influence the prevention of Lassa fever infection

Table 1a: Model Summary for the Influence of Lassa Fever Health Promotional Messages on the Prevention of Lassa Fever Infection

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.238[a]	0.057	0.056	2.42285

a. **Predictors: (Constant), Health Promotional Messages on Lassa fever**

Table 1b: Simple Linear Regression for the Influence of Lassa Fever Health Promotional Messages on the Prevention of Lassa Fever Infection

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.349	0.840		8.749	0.000
	Health Promotional Messages on Lassa fever	0.149	0.022	0.238	6.898	**0.000**

a. **Dependent Variable: Prevention of Lassa Fever Infection**

Table 1b shows that health promotional messages on Lassa fever significantly influences the prevention of Lassa fever infection ($p<0.05$). Furthermore, health promotional messages on Lassa fever had a weak, positive significant influence on prevention of Lassa fever infection ($\beta=0.238$, $p<0.05$). Furthermore, Table 1b indicates a weak positive significant correlation coefficient ($\beta=0.238$) and positive slope ($B=0.149$) which are statistically significantly different from zero ($p<0.05$, $T=6.898$). The implication of this is that an increase in health promotional messages on Lassa fever will increase the prevention of Lassa fever infection and a reduction in health promotional messages on Lassa fever will reduce the prevention of Lassa fever infection.

The World Health Organisation (WHO) have acknowledged the importance of health promotion and its preventive measures in improving health and wellbeing by addressing health and reducing chronic injuries and diseases thereby enhancing economic growth in the country. Furthermore, the model indicates that health promotional messages could explain 5.7 percent ($R^2=0.057$) variation in prevention of Lassa fever infection. The model accounts for a significant amount of prevention of Lassa fever infection ($F_{(1, 790)} =47.581$, $p<0.05$). Therefore, the hypothesis that health promotional messages on Lassa fever do not significantly influence the prevention of Lassa fever infection was rejected.

H_2: Mass media health promotion campaign does not significantly influence the attitude of the respondents towards Lassa fever infection.

It should be noted that mass media was excluded from the analysis because of collinearity concerns.

Table 2a: Model Summary for the Influence of Mass Media Health Promotion Campaign on Attitude towards Lassa Fever Infection

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.433[a]	0.188	0.177	2.70736

a. **Predictors: (Constant), Preference for Radio, Health Promotional Messages on Lassa fever, Television, Interpersonal Communication, Conferences/seminars/workshop, Leaflets, Radio, Rallies, Posters, Preference for Television**

Table 2b: Multiple Linear Regression Showing the Influence of Mass Media Health Promotion Campaign on Attitude towards Lassa Fever Infection

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.929	1.134		5.228	0.000
	Health Promotional Messages on Lassa fever	0.271	.025	**0.362**	11.028	**0.000**
	Conferences/seminars/workshops	0.077	0.240	0.012	.322	0.747
	Rallies	-0.221	0.270	-0.037	-.819	0.413
	Posters	0.045	0.397	0.007	.112	0.911
	Leaflets	0.476	0.388	0.075	1.227	0.220
	Interpersonal Communication	0.513	0.276	0.063	1.861	0.063
	Television	0.928	0.256	0.137	3.631	**0.000**
	Radio	0.994	0.283	0.148	3.513	**0.000**
	Preference for Television	-0.771	0.574	-0.126	-1.343	0.180
	Preference for Radio	-0.865	0.569	-0.143	-1.519	0.129

a. Dependent Variable: Attitude towards Lassa Fever Infection

Table 2b depicts that mass media health promotion campaign significantly influences the attitude of respondents towards Lassa fever infection ($F_{(10, 776)} = 17.918$, $p<0.05$). This implies that when media health promotion campaign elements such as health promotional messages on Lassa fever, conferences/seminars/workshops, rallies, posters, leaflets, interpersonal communication, television, radio, preference for television and preference for radio are considered, they have the propensity to influence the attitude of respondents towards Lassa fever infection.

From the individual perspective, health promotional messages on Lassa fever had a weak positive significant influence on the attitude of respondents towards Lassa fever infection ($\beta = 0.362$, $p<0.05$). This suggests that an increase in health promotional

messages on Lassa fever will result in improved attitude of respondents towards Lassa fever infection. In addition, television (β =0.137, p<0.05) and radio (β =0.148, p<0.05) being media channels that had a weak positive significant influence on the attitude of respondents towards Lassa fever infection; which implies that an increased adoption of television and radio as a media channel will lead to improved attitude of respondents towards Lassa fever infection.

This collaborates with Nwabueze (2014) who describes television as the medium that impacts most on the audience and notes that the combination of audio and visual signals in getting messages to the audience is a basic characteristic of the medium. In addition, the model could explain 18.8 percent (R^2=0.188) variation in respondents' attitude towards Lassa fever infection. Consequently, the hypothesis that mass media health promotion campaign does not significantly influence the attitude of the respondents towards Lassa fever infection is rejected.

H_3: Mass media health promotion campaign does not significantly influence the behaviour of the respondents towards Lassa fever infection.

Table 3a: Model Summary for the Influence of Mass Media Health Promotion Campaign on Behaviour towards Lassa Fever Infection

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.321[a]	0.103	0.091	2.75690

a. **Predictors: (Constant), Preference for Radio, Health Promotional Messages on Lassa fever, Television, Interpersonal Communication, Conferences/seminars/workshop, Leaflets, Radio, Rallies, Posters, Preference for Television**

Table 3b: Multiple Linear Regression Showing the Influence of Mass Media Health Promotion Campaign on Behaviour towards Lassa Fever Infection

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.779	1.200		8.152	0.000
	Health Promotional Messages on Lassa fever	.194	.026	0.260	7.501	**0.000**
	Conferences/seminars/ workshop	.265	.247	0.042	1.074	0.283
	Rallies	-.253	.275	-0.044	-.920	0.358
	Posters	-.782	.416	-0.125	-1.882	0.060
	Leaflets	1.523	.405	0.249	3.763	**0.000**
	Interpersonal Communication	.216	.283	0.027	.764	0.445
	Television	.407	.261	0.062	1.560	0.119
	Radio	.204	.289	0.031	.704	0.482
	Audience Preference for Television	-1.212	.603	-0.204	-2.011	**0.045**
	Preference for Radio	-.949	.597	-0.161	-1.589	0.113

a. **Dependent Variable: Behaviour towards Lassa Fever Infection**

Table 3b depicts that mass media health promotion campaign significantly influences the behaviour of respondents towards Lassa fever infection ($F_{(10, 771)}$ =8.848, p<0.05). This implies that when media health promotion campaign elements such as health promotional messages on Lassa fever, conferences/seminars/workshops, rallies, posters, leaflets, interpersonal communication, television, radio, preference for television and preference for radio are considered, they have the inclination to influence the behaviour of respondents towards Lassa fever infection.

From the individual perspective, health promotional messages on Lassa fever had a weak positive significant influence on the behaviour of respondents towards Lassa fever infection (β =0.260, p<0.05). This suggests that an increase in health promotional messages on Lassa fever will result in improved behaviour of respondents towards Lassa fever infection. In addition, leaflets (β =0.249, p<0.05) being a media support material had a weak positive significant influence on the behaviour of respondents towards Lassa fever infection; which implies that an increased adoption of leaflets as a media support material will lead to improved behaviour of respondents towards Lassa fever infection. In addition, audience preference for television (β = -0.204, p<0.05) had a weak negative significant influence on the behaviour of respondents towards Lassa fever infection.

This collaborates with Daramola (2003) when he noted that the weaknesses of television lies in the fact that only a limited set of people can afford a television set because of its cost. This suggests that an increase in audience preference of television as a medium channel has the propensity to weaken their behaviour towards Lassa fever infection. Furthermore, the model could explain 10.3 percent (R^2=0.103) variation in respondents' behaviour towards Lassa fever infection. Consequently, the hypothesis that mass media health promotion campaign does not significantly influence the behaviour of the respondents towards Lassa fever infection is rejected.

H_4: Mass media health promotion campaign and the public's behavioral responses do not significantly influence the prevention of Lassa fever in Ekiti and Ondo State, Nigeria.

Table 4a: Model Summary for the Influence of Mass Media Health Promotion Campaign and Public's Behavioural Responses on Prevention of Lassa Fever Infection

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.794[a]	.630	.624	1.48969

a. **Predictors: (Constant), Behaviour, Interpersonal Communication, Rallies, Audience Preference for Radio, Health Promotional Messages on Lassa fever, Television, Conferences/seminars/workshop, Posters, Atttude, Radio, Leaflets, Audience Preference for Television**

Table 4b: Multiple Linear Regression Showing the Influence of Mass Media Health Promotion Campaign and Public's Behavioral Responses on Prevention of Lassa Fever Infection

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.383	.681		2.032	0.042
Health Promotional Messages on Lassa fever		.017	.015	0.027	1.108	0.268
Conferences/seminars/workshop		.051	.134	0.009	.380	0.704
Rallies		.203	.149	0.042	1.364	0.173
Posters		-.137	.225	-0.026	-.609	0.543
Leaflets		-.167	.221	-0.032	-.754	0.451
Interpersonal Communication		-.304	.154	-0.045	-1.975	**0.049**
Television		-.423	.142	-0.077	-2.973	**0.003**
Radio		.404	.158	0.074	2.558	**0.011**
Audience Preference for Television		-.671	.327	-0.134	-2.053	**0.040**
Audience Preference for Radio		-.546	.324	-0.110	-1.686	0.092
Attitude towards Lassa Fever Infection		.081	.022	0.097	3.632	**0.000**
Behaviour towards Lassa Fever Infection		.616	.022	0.726	28.237	**0.000**

a. **Dependent Variable: Prevention Lassa Fever Infection**

Table 4b illustrates that mass media health promotion campaign and the public's behavioural responses significantly influenced the prevention of Lassa fever in Ekiti and Ondo State ($F_{(12, 766)} = 108.759$, $p<0.05$). This implies that when mass media health promotion campaign elements such as health promotional messages on Lassa fever, conferences/seminars/workshops, rallies, posters, leaflets, interpersonal communication, television, radio, preference for television and preference for radio and behavioral responses are considered, there is the likelihood that Lassa fever infection can be prevented from residents of Ekiti and Ondo State. From the individual perspective, interpersonal communication ($\beta = -0.045$, $p<0.05$), television ($\beta = -0.077$, $p<0.05$), audience preference for television ($\beta = -0.134$, $p<0.05$) and audience preference for radio ($\beta = -0.110$, $p<0.05$) had weak negative significant influence on prevention of Lassa fever.

This suggests that an increase in interpersonal communication, choice of television as a media channel, audience preference for television and audience preference for radio would result in reduction in the prevention of Lassa fever infection. However, behaviour towards Lassa fever infection ($\beta = 0.726$, $p<0.05$) had a

strong positive significant influence on prevention of Lassa fever infection; while radio as a media channel ($\beta = 0.074$, $p<0.05$) and attitude towards Lassa fever infection ($\beta = 0.097$, $p<0.05$) had weak positive significant influence on prevention of Lassa fever infection.

This implies that an improvement in behaviour towards Lassa fever infection, choice of radio as media channel and attitude towards Lassa fever infection would result in improved prevention of Lassa fever infection. For health promotion, the target is to enable people to increase control over their health and its determinants, and thereby improve their personal and essentially public health in general (Participants at the sixth global conference on health promotion, 2005).

This collaborates with the Social Cognitive Theory which is concerned with behavioural effects which have a strong impact and moves from a consideration of the often limited consequences of media depictions to the purposive development of media campaigns to change health-related Behaviour. According to Anaeto *et al* (2008) the Social Cognitive Theory is used in designing a campaign and is concerned with how individuals make sense of social situations. The model could explain 63 percent ($R^2=0.630$) variation in prevention of Lassa fever in Ekiti and Ondo State.

Consequently, the hypothesis that mass media health promotion campaign and the public‟s behavioural responses do not significantly influence the prevention of Lassa fever in Ekiti and Ondo State, Nigeria is rejected.

Conclusion and Recommendations

Health promotion plays a pivotal role in achieving public health objectives thereby making communication campaign an important way to prevent Lassa fever since campaigns are intended to generate specific outcomes or effects on people within a specified period of time. The study concluded that an increase in health promotional messages on Lassa fever resulted in improved behaviour of respondents towards the infection. In addition, residents adopted washing of hands more than other preventive measures against Lassa fever virus. It was recommended that an increase in mass media health promotional messages on Lassa fever by broadcast stations would create more awareness on Lassa fever preventive methods. In addition, an increased adoption of leaflets prepared in local dialect as a media support material will lead to improved behaviour of respondents towards Lassa fever infection.

References

Adebimpe, W. O (2015). Community awareness and perception towards rodent control: Implications for prevention and control of Lassa fever in urban slums of south western nigeria. *Malta Journal of Health Science, 1*(21), 26-32.

Adebimpe, W. O. (2015). Knowledge and preventive against lassa fever among primary health care workers in Oshogbo. *University of Mauritius Research Journal, 1*(21), 5-10

Adem, D., Orhan, D. & Enderhan, K. (2013). Axes concept of democratic rethinking the local media. *Journal of International Scientific Publications*, *Mass and Mass Communication*, 2(3), 17-20. Accessed from journal http://www.scientific-published.net.

Aigbiremolen, A. O., Duru, C. B., Awunor, N. S., Abejegah, C. Abah, S. O., Asogun, A. D. & Eguavoen, O. L. (2012). Knowledge & application of infectious disease control measures among primary care workers in Nigeria: The Lassa fever example. *International Journal of Basic, Applied and Innovative Research*. IJBAIR,2012, *1*(4), 122-129. Retrieved from www.antrescentpub.com

Ajala, J. A. (2005) Health education in wellness and sickness: This day, this age. Inaugural Lecture 2005 delivered at the University of Ibadan. Print marks Ventures Limited.

Akpobo, O. (2015). Mass media health communication: imperative for sustainable health development in Nigeria. *Journal of African Studies, 4*(1), 20-25.

Amanda, D.; Bella, L.; Michelle, W. & Max, C. (2004). A review of mass media campaigns in road safety. Monash University Accident Research Centre Report Documentation Page Report No 220, ISBN 0732617308. Retrieved on 13/10/2019 from http://www.researchcenter.org

American Public Health Association (1987). Criteria for the development of health promotion and educational programs. *American Journal of Public Health*, 77(1), 89-92. Retrieved on 20/12/2019 from http://www.journalofpublichealth.org

Anaeto, S.; Onabanjo, O. & Osifeso, J. (2008*). Models and theories of communication*. US: Africa Renaissance Books Incorporated,

Asemah, E. (2011). *Selected media themes*. Jos: Great Future Press.

Asemah, E. (2011). *Mass media in the contemporary society*. Jos: Jos University Press.

Ashley, E. A.; Thomas, H. F.; Bonnie, M. & Carolyn, A. L. (2016). Measuring the effectiveness of mass mediated health campaigns through meta-analysis. *Journal of health communication,* 10(8), 1-18. Retrieved on 23.12/2019 from http://www.tandfonline.com/101/uhcm20

Center for Disease Control and Prevention (2003). Infection control for viral haemorrhagic fevers in the African health care setting. Retrieved on 01/12/2019/ from www.cdc.gov

Center for Disease Control and Prevention (1994). Listening to your audience: using focus groups to plan breast and cervical cancer public education programs. Denver: AMC Cancer Research Center. Retrieved on 11/10/2019 from CDC Publication No. PDF-245K.

Center for Disease Control and Prevention (1994). The prevention marketing initiative community kit: it‟s your move, prevent aids (CDC Publication No. D738). Atlanta. Retrieved on 09/4/2019 from http://www.cdc.publications.org

Center for Disease Control and Prevention. (1996). The prevention marketing initiative: Applying prevention marketing (CDC Publication No. D905). Atlanta.

Daramola, I. (2003). *Introduction to mass communication,* 2nd edition. Lagos; Rothan Press Ltd.

Fiske, S.T. &Taylor, S. E. (1991). *Social cognition* (second edition) New York: McGraw-Hill

Green, L.W. (1980). National policy in the promotion of health. *International Journal of Health Education, 1*(22), 161-168.

Heiner, M. & Jorg, M. (2009). Mass media research. Federal Ministry of Education and Research Working Paper No 111. Working Paper Series.

Ilesanmi, O. S.; Omotoso, B.; Alele, F. O. & Adewuyi, P. (2015). Awareness of Lassa fever in a rural community in southwest Nigeria. *Journal of Community Health Research,* 4(1), 1-10.

Kerneis, S., Koivogui, L., Magassouba, N., Koulemou, K., Lewis, R., Aplogan, A., Grais, R. F., Guerin, P. J., & Fichet, C. E. (2009). Prevalence and risk factors of Lassa seropositivity in inhabitants of the forest region of guinea: A Cross-Sectional Study. *Journal of Health Communication*, *9*(1), 20-25.

Labonte, R. & Little, S. (1992). *Determinants of health: Empowering strategies for nurses*. Van couver Registered Nurses Association of British. Columbia.

Lalonde, M. A. (1994). A new perspective on the health of Canadians: A working document. Ottawa: Canada Information. Retrieved from E73455pdf

Lin, V.; Fawkes, S. & Hughes, A. (2008). National prevention summit. investing in Australia‟s health and wellbeing. a vision for prevention in Australia. Discussion paper. Australian Institute of Health Policy Studies and the Victorian Health Promotion Foundation 2008.

McQuail, D. (2005). *Mass communication theory, Fifth Edition*. London: Sage Publication.

O‟Donnell, M. P. (1989). Definition of health promotion. Part iii expanding the definition. *American Journal of Health Promotion*, 3(3), 5-23.

Ogbu, O.; Ajaluchukwu, E. & Uneke, C. J. (2007). Lassa fever in west African sub-region: An overview. Retrieved from *J.Vect Borne Dis,* 1(44), 1-11.

Okunna, C. (1999). *Introduction to mass communication*. Enugu: Abic Publishers

Ottawa Charter for Health Promotion (1986). *Health promotion, 1*(4), 111-V.

Petly R. E. & Brinol, P. (2002). Attitude change: the elaboration likelihood model of persuasion. In G. Bartel and W. Nielissen (Eds) *Marketing for Sustainability: Towards Transactional Policy Making* (pp.176-190). Amsterdam, the Netherlands: IOS Press.

Petly, R. E. & Cacioppo, J. T. (1986). *The elaboration likelihood model of persuasion. advances in experimental social psychology*. New York: Routledge.

Petly, R. E, Brinol, P. & Priester, J. R. (2009). Implications of the elaboration likelihood model of persuasion. In J. Bryant and M. Oliver (Eds) *Media effects: advances in theory and research* (3rd ed) New York: Routledge.

Rice, R. E. & Atkins, C. (1994). Principles of successful public communication campaigns in J. Bryant and D. Zillmann (eds), *Media effects: Advance in theory and research*. Retrieved from http://www.mediaeffects

Rimmer, B. K. & Kreuter, M. W. (2006). Advancing tailored health communication: a persuasion and message effect perspective. *Journal of Communication*, 56(1), 184-201 Retrieved DOI:10.111/J.1460-2466.2006

Rachele, D & Andria H (2010). A simple methodology for piloting and evaluating mass media intervention: An exploratory study. *Psychology, Health & Medicine,* 15(2), 231-242.

Rogers, E. M. & Storey, J. D. (1987). Communication campaign. In C.R Berger & S.H Chafee (Eds) (pp.817-846). *Handbook of communication science*. London: Sage.

Tobin, E. A., Asogun, D. A., Isah, E. C. & Ebhodaghe, P. (2013). Assessment of knowledge and attitude towards Lassa fever among primary care providers in an endemic suburban community of Edo state: Implications for control. *Journal of Medicine and Medical Sciences, 4*(8), 311-318.

Tomori, O.; Fabiyi, A.; Sorungbe, A.; Smith, A. & McCormick, J. B. (1998). Viral haemorrhagic fever antibodies in Nigerian populations. *AM J. Trop. Med. Hyg*: 38; 407-410.

United States of America Department of Health Education and Welfare (1979) Retrieved on 12/06/2019 from https://www.health