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Tiamiyu, Kehinde A.

University of Jos, Nigeria

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CONSUMERS' KNOWLEDGE, ATTITUDE AND BEHAVIOUR ON LASSA FEVER IN AKINYELE OYO STATE, NIGERIA

Kehinde A. Tihamiyu

Department of Social Science Education,
University of Jos, Jos, Nigeria
ajaous@yahoo.com, ajaot@unijos.edu.ng
08039797929

ABSTRACT

The recent outbreak of Lassa fever in some parts of the country brings to the fore the need to examine the knowledge, attitude and behavior of citizens towards Lassa fever control/prevention. Lack of basic knowledge and awareness of its endemicity could constitute greater risk to the society. Descriptive Cross-sectional study using a developed validated questionnaire was conducted among 120 members (who are considered to be at risk) of possible endemic areas in four communities of Akinyele Local Government Area. The finding shows that the knowledge of the citizens is still very low as the results indicated that respondents don't know the cause of the disease; the attitude and behaviour of citizens towards lassa fever prevention/control is negative. The result further establishes that gender does not affect community citizens' knowledge, attitude and behaviour towards Lassa fever prevention/control. Lassa fever constitutes a health hazard in Nigeria, as the inhabitants of this area of Nigeria indulge in habits or activities that favour the spread of lassa fever. There is therefore a need for the development of strategic preventive methods that will stop the spread of the virus. The world is now a 'global village', and the previous geographical gap between developing and developed countries has been bridged by international travel disease. Hence, Community involvement and participation is necessary to provide sustainable Lassa fever control. Regular and professional seminars should be held for all healthcare providers on early diagnosis and treatment of Lassa fever, while diagnostic kits should be made available in hospitals.

Key words: Knowledge, attitude, behaviour, Lassa fever, citizens

INTRODUCTION

Lassa fever is an acute viral zoonotic illness caused by Lassa virus, an arenavirus known to be responsible for a severe haemorrhagic fever characterized by fever, muscle aches, sore throat, nausea, vomiting, chest and abdominal pain. The primary host of the Lassa virus is the Natal Multimammate mouse (*Mastomys natalensis*), an animal indigegeneous to most of sub-Saharan Africa. The virus is probably transmitted by contact with the faeces or urine of the infected rodents. Infected rodents remain carriers throughout their life and do not show clinical symptoms but

excrete the virus through the urine, saliva, respiratory secretion and exposed blood vessels through micro or macro trauma (Keenlyside et al., 1983). Lassa fever is commonly found in rural communities, where over 70% of the population resides (Kelly et al., 2003).

Lassa fever was first described in Sierra Leone in the 1950s but the virus responsible for the disease was not identified until 1969 when two missionary nurses died in Nigeria, west Africa and the cause of their illness was found to be Lassa virus, named after a town in Nigeria (Lassa in the Yedseran River valley Borno state) where the first case was isolated. Since then, a number of outbreaks of Lassa virus infection were reported in various parts of Nigeria including Jos, Onitsa, Zonkua, Abo Mbaise, Owerri, Epkoma and Laffiya. Epidemics of Lassa fever also documented in the west African countries including Liberia, Sierra Leone, Guinea, Mali and Senegal. A few cases of the importation of Lassa virus into other parts of the world for example by travelers were documented (Johnson and Monath, 1990). Outbreak of Lassa haemorrhagic fever can take place anytime of the year and it is possible to transport Lassa from an endemic area to a non endemic area during the incubation period. Person to person transmission of Lassa fever can occur through contaminated medical equipment, such as reused needles or when a person comes into contact with virus in blood, tissue, secretions or excretions of an infected individual but the virus cannot be spread through casual contact (including skin to skin contact without exchange of body fluids). Lassa fever occurs in all age groups and in both men and women. Persons at greatest risk are those living in rural areas where the multimammate rat is usually found, especially in areas of poor sanitation or crowded living condition (WHO, 2005). Individuals at risk are those who live or visit areas with a high population of mastery rodents infected with Lassa virus or are exposed to infected humans. Approximately 15% to 20% of patients hospitalized for Lassa fever die from the illness. The death rates are particularly high for women in the third trimester of pregnancy and for foetus, about 95% of which die in the uterus of infected pregnant mothers (CDC, 2004). This therefore calls for attention.

As noted by WHO (2005), the signs and symptoms of Lassa fever may be difficult to distinguish from diseases that are common in the tropics such as severe malaria, typhoid fever, yellow fever and other viral hemorrhagic fevers such as Ebola and Marburg. These signs and symptoms occur 1-3 weeks after the patient comes into contact with the virus. These include fever, retrosternal pain (pain behind the chest wall), sore throat, back pain, cough, abdominal pain,

vomiting, diarrhea, conjunctivitis, facial swelling, proteinuria (protein in the urine) and mucosal bleeding. The most common complication of this fever is deafness.

Also, following McCormick et al (1986), Ribavirin, the antiviral drug, is effective in the treatment of Lassa fever only if administered early in the course of illness. In a similar view, a study conducted by Jahling, Hesse, Eddy, Johnson, Calis and Stephen (1980) as cited in Ogbu, Ajuluuchukwu and Unehe (2007) confirmed the efficacy of ribavirin in the treatment of Lassa fever and that it should be used at any point in the illness, as well as for post exposure prophylaxis. As also noted by Holmes, McCormick, Trock, Chese, Lewis and Mason (1990), supportive treatment is often necessary and includes fluid replacement, blood transfusion, administration of paracetamol, phylometadone, ringer lactate, haemocoel quinine and broad spectrum antibiotics.

Moreover, examining the trends of reported outbreak in Nigeria over time, it is discovered that since the onset of the 2019 outbreak, there have been 145 deaths in confirmed cases. Case fatality ratio in confirmed cases is 22.3%. From 1st January to 4th August, 2019, a total of 3303 suspected cases have been reported from 22 states. Of these, 651 were confirmed positive, 18 probable and 2634 negative. Twenty-two (22) States (Edo, Ondo, Bauchi, Nasarawa, Ebonyi, Plateau, Taraba, FCT, Adamawa, Gombe, Kaduna, Kwara, Benue, Rivers, Kogi, Enugu, Imo, Delta, Oyo, Kebbi, Cross River and Zamfara) have recorded at least one confirmed case across 83 Local Government Areas. Over the months of 2018, a total of 3441 suspected cases reported. Of these, 611 were confirmed positive, 19 probable, 2811 negative. During the 2018 outbreak, there were 166 deaths in confirmed cases and 19 in probable cases. Case Fatality Rate in confirmed cases is 27.2% (NCDC, 2019). No doubt, Lassa fever is endemic in Nigeria but the question still remains whether the awareness of the endemicity of this disease is still enough or not given the fresh outbreak this year.

Furthermore, the next strand of reasoning is that in African traditional society, people see the leftover of food and fruits from birds and rodents as a medicine for protection and long life. Therefore, they take delight in eating such food and fruits. It is also observed that rural dwellers spread and dry their semi raw foods like 'Elubo', 'Lafun', 'Garri'. Vegetables etc on rock and roadsides where infected rodents can have access. Many householders store water in clay pots inside their houses. These are covered with plates but sometimes they forgot to keep the water containers covered. It is then possible for rats to drink from the pot and get drowned thereby leaving the water contaminated. This age-long negative attitude must be checked and proper re-

orientation established. To this end, a study is required to confirm the knowledge, attitude, and behaviour of citizen towards Lassa fever control/prevention in Akinyele area of Oyo state.

The recent outbreak of Lassa fever couple with age-long African practices in some parts of the country brings to the fore the need for the study as lack of its basic knowledge and awareness of its endemicity could constitute greater risk to the society. It is hoped that the findings of the study would provide ways of improving the health of the populace by reducing the incidence, prevalence and mortality rates of Lassa fever in Oyo state and Nigeria as whole. To this end, the present study seeks to provide answers to the following research questions: (i) what is the level of knowledge of citizens towards Lassa fever prevention/control in Oyo state? (ii) What is the attitude of citizens towards Lassa fever prevention/control in Oyo state? (iii) What is the behaviour of citizens towards Lassa fever prevention/control in Oyo state? (iv) Has gender any influence on the knowledge, attitude and behaviour of citizens towards Lassa fever prevention/control in Oyo state? The rest of the paper proceeds as follows: section 2 highlights the stylized facts about Lassa fever. Section 3 and 4 entail the underlying method and analysis, respectively. Section 5 concludes the paper.

METHOD

Descriptive Cross-sectional study using a developed validated questionnaire was conducted among 120 members of possible endemic areas in four communities (Ajibode, Orogun, Ojoo, and Moniya) of Akinyele Local Government Area Ibadan Nigeria. A questionnaire on the knowledge, attitude and behaviour of citizens towards Lassa fever control was designed by the researcher. A closed ended question was used to elicit responses that are within the scope of the study. The Likert scale was used, a set of attitude statements were presented, where subjects of the study were asked to express agreement or disagreement using a 4-point Likert scale: Strongly Agree, Agree, Disagree, and Strongly Disagree. Data collected included demographic information, knowledge, attitude and behaviour of citizens towards Lassa fever control/prevention. The questionnaire was validated by experts. The reliability of the instruments was also ascertained using a test-retest method. The reliability coefficient of 0.972 and 0.928 were obtained respectively for the instruments using Pearson-product-moment correlation coefficient in a pilot study conducted.

The main objective of the study was to assess the knowledge, attitude and behavior of citizens towards Lassa fever control/prevention. The data were analyzed using SPSS version 22 for Windows. Descriptive statistics were used to analyze the data including numbers, percentages, and means (\pm standard deviation).

RESULTS AND DISCUSSION

PARTICIPANTS

A total of 120 members of study area participated. Most of the participants (60.0%, n=72) were females, and 65% (n=78) were between 20 and 49 years of age. Nearly two-thirds of the participants had married. Out of 120 participants, 29.2% (n=35) were farmers, 10.8% (n=13) traders, 27.5% (n=33) civil servants, 13.3% (n=16) Artisans and 19.2% (n=23) unemployed. 37.5% (n=45) of the participants had secondary school education, 19.2% (n=23) had primary school, 16.6% (n=20) had no formal education, 14.2% (n=17) had HND/B.Sc, while 12.5% (n=15) had NCE/OND. Demographic data of the participants are shown in table 1.

MEASURES

Knowledge of citizens on Lassa fever

Table 2 represents the responses of community citizens/consumers to various questions regarding their knowledge toward Lassa fever prevention/control. More than half of the respondent (55.0%, n=66) were of view that Lassa fever is caused by mosquito while (45.0%, n=54) were of contrary view, 79(65.8%) respondent agree that Lassa fever is just ordinary fever while 41(32.4%) respondent disagreed, 40(33.3%) respondents were of view that Lassa fever is caused by eating food or drinking water contaminated by infected rats or rodent while 80(66.7%) respondents disagreed, 34(28.3%) respondents were of the believe that untidy, bushy and overcrowded environment can cause Lassa fever while 86(71.6%) respondents disagreed, 44(36.7%) rodent were of view that Lassa fever is caused by a virus while 76(63.3%) respondents disagreed. 67(55.8%) respondents agreed that Lassa fever does not kill while 53(44.2%) respondents disagreed, 61(50.8%) respondents agreed that Lassa fever is caused by sexual transmission from an infected person while 59(49.2%) respondents disagreed. The findings shows that the knowledge

of citizens towards Lassa fever is still very low as the results indicated that respondents don't know the cause of the disease

Attitude and Behaviour of Citizens towards Lassa fever Prevention/Control

Table 3 represents the responses of community citizens/consumers to various questions regarding their attitude toward Lassa fever prevention/control. Most of the respondents (65.8%, n=79) agreed that there is no need for environmental sanitation and bush burning for Lassa fever control while few (34.2% , n=41) were of contrary view, 45.8% (55) of the respondents agreed that unclean environment has nothing to do Lassa virus infection while 65 or 54.2% respondents were of different view, 96 or 79.7% respondents agree that Lassa fever is not concerned with avoidance of rodents consumption while 24 or 20.0 % respondents disagreed, 67 or 55.8 % respondents agree that I do not need to cover my food because I cannot contact the diseases while 53 or 44.2% respondents disagree, 59 or 49.2% respondents agree that they can eat any food even if eaten by rodents while 61 or 50.8% respondents disagreed, 55 or 45.8 % respondents agreed that they do not have good housing standard while 65 or 54.2 % respondents disagreed, 65 or 54.2 % respondents were of the view that even if they contact it, it can be cured locally with herbs while 55 or 45.8% did not agree. Most of the respondents (65.8%, n=79) agreed that there is no need for environmental sanitation and bush burning for Lassa fever control while few (34.2% , n=41) were of contrary view, 45.8% (55) of the respondents agreed that unclean environment has nothing to do Lassa virus infection while 65 or 54.2% respondents were of different view, 96 or 79.7% respondents agree that Lassa fever is not concerned with avoidance of rodents consumption while 24 or 20.0 % respondents disagreed, 67 or 55.8 % respondents agree that I do not need to cover my food because I cannot contact the diseases while 53 or 44.2% respondents disagree, 59 or 49.2% respondents agree that they can eat any food even if eaten by rodents while 61 or 50.8% respondents disagreed, 55 or 45.8 % respondents agreed that they do not have good housing standard while 65 or 54.2 % respondents disagreed, 65 or 54.2 % respondents were of the view that even if they contact it, it can be cured locally with herbs while 55 or 45.8% did not agree. The findings show that attitude of the citizens towards Lassa fever prevention/control in Oyo state is negative.

Table 3 also shows that majority of the respondents have negative behaviour towards Lassa fever prevention/control in Oyo state. The results from table 4 indicate that gender does not affect community citizens' knowledge, attitude and behaviour towards Lassa fever prevention/control.

Table 1. Demographic Characteristics of the participants

Characteristics	n (percentage)
Age	
20-29	23 (19.2%)
30-39	43 (35.8%)
40-49	35 (29.2%)
50-59	19 (15.8%)
Gender	
Male	48 (40.0%)
Female	72 (60.0%)
Married Status	
Single	35 (29.2%)
Married	77 (64.1%)
Divorced	8 (6.7%)
Occupation Status	
Unemployed	23 (19.2%)
Farming	35 (29.2%)
Trading	13 (10.8%)
Artisans	16 (13.3%)
Civil Servants	33 (27.5%)
Educational Status	
No Formal Education	20 (16.6%)
Primary	23 (19.2%)
Secondary	45 (37.5%)
NCE/OND	15 (12.5%)
HND/B.Sc	17 (14.2%)

Religious Status	
Islam	58 (48.3%)
Christianity	60 (50.0%)
Traditional	2 (1.7%)

Table 2. Knowledge of citizens on Lassa fever

Measures	Strongly Agree n (%)	Agree n (%)	Disagree n (%)	Strongly Disagree n (%)
Lassa fever is caused by mosquito	30 (25.0%)	36 (30.0%)	20 (16.7%)	34 (28.3%)
Lassa fever is just ordinary fever	39 (32.5%)	40 (33.3%)	41 (34.2%)	-
Lassa fever is caused by eating food or drinking water contaminated by infected rats or rodents	20 (16.7%)	20 (16.7%)	40 (33.3%)	40 (33.3%)
Lassa fever is caused by a virus	20 (16.7%)	24 (20.0%)	30 (25.0%)	46 (38.3%)
Untidy, bushy and overcrowded environment can cause Lassa fever	20 (16.7%)	14 (11.6%)	40 (33.3%)	46 (38.3%)
Lassa fever does not kill	30 (25.0%)	37 (30.8%)	20 (16.7%)	33 (27.5%)
Lassa fever is caused by sexual transmission from infected person	30 (25.0%)	31 (25.8%)	20 (16.7%)	39 (32.5%)

Table 3. Attitude of Citizens towards Lassa fever Prevention/Control

Measures	Strongly Agree n (%)	Agree n (%)	Disagree n (%)	Strongly Disagree n (%)
There is no need for environmental sanitation and bush	30 (25.0%)	49 (40.8%)	20 (16.7%)	21 (17.5%)

burning for Lassa fever control				
Unclean environment has nothing to do with Lassa virus infection	30 (25.0%)	25 (20.8%)	30 (25.0%)	35 (29.2%)
Lassa fever is not concerned with avoidance of rodent consumption	33 (27.5%)	63 (52.5%)	24 (20.0%)	-
I can still eat food partly eaten by rodents	40 (33.3%)	19 (15.8%)	30 (25.0%)	31 (25.8%)
I donot have good housing standards it does not prevent rodents entering into my home	10 (8.3%)	45 (37.5%)	30 (25.0%)	35 (29.2%)
Even if I contact it, it can be cured locally with herbs	30 (25.0%)	35 (29.2%)	21 (17.5%)	34 (28.3%)

Table 3. Behaviour of Citizens towards Lassa fever Prevention/Control

Behaviour	Frequency	Percentage
Negative	77	64.2
Positive	43	35.8

Table 4. Correlation Matrix showing the relationship between gender, knowledge, attitude and behaviour of citizens towards Lassa fever prevention/control

	Lassa fever prevention/control	Gender	Knowledge	Attitude	Behaviour
Lassa fever prevention/control	1				
Gender	.397**	1			
Knowledge	.481**	.407**	1		
Attitude	.185**	.089	.343	1	
Behaviour	.462**	.277**	.203**	-.004	1
Mean	22.5016	4.9934	4.1213	8.2590	32.5115

S.D	3.3167	3.6527	4.2506	2.2859	5.0823
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**Sig. at .05 levels

So far, the study was carried out to assess the knowledge, attitude and behaviour of citizens towards Lassa fever prevention/control in Akinyele Local Government of Oyo State. Akinyele was chosen because of its endemic tendencies. A total of 120 members of the study area participated. Descriptive Cross Sectional study adopted. The study established that the knowledge of the citizens is still very low as the results indicated that respondents don't know the cause of the disease; the attitude and behaviour of citizens towards Lassa fever prevention/control is negative. This could be attributed to the fact that some households might be ill-informed, apathetic or cavalier about the true existence of the virus. It was further established that gender does not affect community citizens' knowledge, attitude and behaviour towards Lassa fever prevention/control. It was therefore recommended that Government should create more awareness on the causes of Lassa fever for increased knowledge for its prevention particularly through the mass media. Community involvement and participation is necessary to provide sustainable Lassa fever control as the public should be made aware of the mode of contact of Lassa fever and its high case-fatality rate using print and electronic media among others

RECOMMENDATIONS

- Government should create more awareness on the causes of Lassa fever for increased knowledge for its prevention particularly through the mass media.
- The public should be made aware of the mode of contact of Lassa fever and its high case-fatality rate using print and electronic media.
- Community involvement and participation is necessary to provide sustainable Lassa fever control.
- Food vendors should be educated on the need to prevent food contamination with Lassa fever virus.
- Rodenticides should be used for the destruction of rats in home, and development of Lassa fever vaccine should be facilitated.

- Regular and professional seminars should be held for all healthcare providers on early diagnosis and treatment of Lassa fever, while diagnostic kits should be made available in hospitals.

CONCLUSIONS

The paper has so far examined the knowledge, attitude and knowledge of community citizens/consumers on Lassa fever. Lassa fever constitutes a health hazard in Nigeria, as the inhabitants of this area of Nigeria indulge in habits or activities that favour the spread of lassa fever. The study established that the knowledge of the citizens is still very low as the results indicated that respondents don't know the cause of the disease; the attitude and behaviour of citizens towards Lassa fever prevention/control is negative. This could be attributed to the fact that some households might be ill-informed, apathetic or cavalier about the true existence of the virus. It was further established that gender does not affect community citizens' knowledge, attitude and behaviour towards Lassa fever prevention/control.

There is therefore a need for the development of strategic preventive methods that will stop the spread of the virus. The world is now a 'global village', and the previous geographical gap between developing and developed countries has been bridged by international travel disease. Hence, Community involvement and participation is necessary to provide sustainable Lassa fever control. Regular and professional seminars should be held for all healthcare providers on early diagnosis and treatment of Lassa fever, while diagnostic kits should be made available in hospitals.

REFERENCES

- Aranoff S.A., Lacy M.A. and Smego R.A.(1997). Viral hemorrhagic fevers In: AranoffSA, editor. *Advances in pediatric infectious diseases*. St. Louis: Mosby Year Book. p.21-53
- Borchet M, Mulangu S, Lefevre P, Tshomba A, Libande ML, Kulidiri A, Muyembe-TamfumJJ, Van der Stuyft P (2007). Use of protective gear and the occurrence occupational Marburg hemorrhagic fever in health workers from Watsa health zone, democratic republic of the congo. *Journal of Infectious Diseases* 196:S168-75
- Bowen M.D., Rollin P.E., Ksiazek T.G., Hustad H.L., Bausch D.G., Demby A.H., Bajani M.P., Peters C.J. and Nichol S.T. (2000). Genetic diversity among Lassa virus strains. *Journal of Virology*. 74:6992-7004
- Fisher-Hoch S.P. (2005). Lessons from nosocomial Viral hemorrhagic fever outbreaks. *Br Med Bull*. 73-74(1):123-137.
- Haas W.H., Breuer T, Pfaff G, Schmitz H, Kohler P, Asper M, Emmerich P, Drosten C, Golnitz U Fleischer K, Gunther S (2003). Imported Lassa fever in Germany: surveillance and management of contact persons. *Clin. Infect. Dis*. 36:1254-1258
- Health Protection Agency (2004). The infection hazards of human cadavers. Guidelines on precautions to be taken with cadavers of those who died with a known or suspected infections. (cited 2013 May 27). Available from ; www.hpa-nw.org.uk

- Hewlett B.L., Hewlett B.S. (2005). Providing care and facing death: Nursing during Ebola outbreaks in central Africa. *J Transcult Nurs.* 16;289-97
- Hidiroglu S.O., Muhammad F.T., Ahmet K.M. (2012). Knowledge and attitude of health care workers in Umraniye, Turkey regarding Crimean Congo haemorrhagic fever. *Erclyes Medical Journal.* 34(2):73
- Kakade N.R. (2012). Study to determine the knowledge and practices regarding prevention of dengue fever among the junior health workers (jhw's) working in the primary health centers of Belgan Taluka. *IOSR-JPBS.* 3(6):19-24
- Kelly J.D., Barrie M.B., Ross R.A., Temple B.A., Moses L.M. and Bausch D.G. (2003). Housing equity for health equity: a right based approach to the control of Lassa fever in post war Sierra Leone. *BMC International Health and Human Rights.* 13:2 doi:10.1186/1472-698X-13-2
- Keenlyside RA, McCormick JB, Webb PA, Smith E, Elliot L, Johnson KM(1983). Case-control study of *Mastomys natalensis* and humans in Lassa virus-infected households in Sierra Leone. *AmJ Trop Med Hyg.* 32:829-37
- Kongsap S (2016). Performances of village health volunteers in Dengue haemorrhagic fever prevention and control in Thali districts, Loei Province, Thailand. Thesis submitted in partial fulfillment of requirement for the degree of Master of Primary health care management, Mahidol university. (cited 2013 May 28). Available from : www.li.mahidol.ac.th/ethesis/483799
- McCormick J.B., King I.J., Webb P.A., Scribner C.L., Craven R.B., Johnson K.M., Elliott L.H., Belmont-Williams R (1986). Lassa fever. Effective therapy with ribavirin. *N. Engl. J. Med.* 314, 20-26
- Monath T.P., Newhouse V.F., Kemp G.E., Setzer H.W. and Cacciapuoti A (1974). Lassa virus isolation from *Mastomys natalensis* rodents during an epidemic in Sierra Leone. *Science.* 185: 263-5.
- National population commission (2006). Population and Housing Census Facts and Figures. Available from: <http://www.population.gov.ng/factsandfigures2006>. [Cited 2012 April 6].
- Nigerian Centre for Diseases Control (2019). Lassa fever. NCDC situation Report, Nigeria
- Rollin P.E. (2001). Lassa fever in Guinea: I. Epidemiology of human diseases and clinical observations. *Vector Borne Zoonotic Diseases.* 1(4):269-281
- Weber D.J. and Rutula W.A. (2001). Risks and prevention of nosocomial transmission of rare zoonotic diseases [review]. *Clin Infect Dis.* 32:446-56
- World Health Organisation. (2005). Lassa fever. WHO Newsletter, Geneva
- World Health Organisation. (2000). Lassa fever. WHO Fact Sheet, No. 179, April 2000. WHO Newsletter Geneva
- World Health Organisation. (1998). Infection and Control for Viral Haemorrhagic Fevers an African Health Care Setting. Atlanta: Centers for Disease Control and Prevention. Center for Diseases Control and Prevention and World Health Organisation.
- Tobin E.A., Asogun D.A., Isah E.C., Ugege O.G. and Ehbodaghe 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 J. Med. Med. Sci.* 4(8):311-318