

Knowledge and preventive practices of Lassa fever among residents of Ife-Odan Community, Osun State, South-West Nigeria

Elijah Igbinehi *, Israel Oluseyi Kolawole, Kolawole Jude Tominiyi, Adebayo Olaoluwa Ibukunoluwa, Akin-Adigun Oluwafemi Ibukunoluwa, Akinbami Rebecca Oluwakemi, Ademuyiwa Victory Oluwadara, Omidoyin Idowu Elijah, Ibitokun David and Oyelami Miracle

Department of Medicine and Surgery, College of Health Sciences, Bowen University Iwo, Nigeria.

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Abstract

Lassa fever is a disease of public health importance with high mortality and morbidity especially among rural dwellers. Lassa fever is an acute viral hemorrhagic fever caused by Lassa virus. The virus is a single-stranded RNA virus which belongs to the virus family Arenaviridae. It is an old-world arena virus, which is enveloped, single-stranded, and bi-segmented RNA. Lassa fever is a zoonotic disease, the animal reservoir of Lassa virus is a rodent of the genus *Mastomys*, commonly known as the “multimammate rat.” *Mastomys* rats infected with Lassa virus do not become ill, but they can shed the virus in their urine and faeces for the rest of their lifetime creating ample opportunity for exposure and transmission. The study is a cross-sectional study which was carried out in Ife-Odan community. Ife-Odan, It is a rural community, a town in Osun State which has its headquarters in Ejigbo local government area. The population of Ife-Odan was estimated to be 372,191 according to the national population census of the LGA according to the 2016 national population census. The Sampling technique that was used for this study is Multi-stage sampling technique. The sample size was calculated using the Leslie Kish formula for estimation of single proportions in a population with more than 10,000 inhabitants. The formula used: $N = \frac{Z^2 P Q}{d^2}$ It was observed that Sixty-seven percent of the respondents had heard about Lassa fever, another 58.4% of them knew that rat is the vector. More than half (58.6%), of the respondents knew that the disease is deadly, treatable (53.0%) and survivable (51.9%). Forty-three percent of them say it can be transmitted from one person to another, about half (50.5%) agreed that spreading food by the road side is a risk factor along with poor refuse disposal and dirty environment (50.9%), bush burning (34.9%) and exposing food stuff at home (53.0%). More individuals identified headache (55.3%) as the symptom of Lassa fever. As regards the preventive practices of the respondents, 63.7% eat rats and 36.7% spread food by the road side. Seventy-seven percent of the respondents clear the bush around their homes regularly. Most of the respondents (81.4%) store their food in covered containers and about half them practice bush burning. Two hundred and sixty-eight (62.3%) of the respondents practice unsanitary waste disposal method (open dumping) and large fraction of the population uses rodenticides (76.0%) to kill rats. Significant association was found between respondent's demographic characteristics, level of education and surprisingly, marital status. Respondents with categorized knowledge scores were assessed. Individuals who were less than 19 years of age were realized to have better knowledge about Lassa fever compared to those in other age groups. It was also recorded that Respondents with tertiary level of education have the best knowledge on Lassa fever. Surprisingly, respondents that are single were found to have better knowledge about Lassa fever compared to the married group. These findings are in contrast with studies assessing marital status and its implications on health shown in a previous study.

Keywords: Lassa Fever; Nigeria; VHF

* Corresponding author: Elijah Igbinehi.

1. Introduction

Lassa fever is a disease of public health importance with high mortality and morbidity especially among rural dwellers¹. Lassa fever is a zoonotic disease, the animal reservoir of Lassa virus is a rodent of the genus *Mastomys*, commonly known as the “multimammate rat.” *Mastomys* rats infected with Lassa virus do not become ill, but they can shed the virus in their urine and faeces for the rest of their lifetime creating ample opportunity for exposure and transmission¹.

Lassa fever occurs in all age groups and both sexes. Persons at greatest risk are those living in rural areas where *Mastomys* are usually found, especially in communities with poor sanitation or crowded living conditions. The disease has an incubation period of 5 to 21 days and an insidious onset. Lassa fever presents with non-specific symptoms, It begins with prodromal symptoms of fever and malaise. As the disease progresses the fever intensifies with myalgia, severe prostration and signs of involvement of other organ systems¹. Gastrointestinal symptoms include diarrhea, nausea, vomiting, abdominal pains and sore throat which is usually accompanied by pharyngitis and small oropharyngeal ulcers¹.

The transmission of Lassa fever in rural communities represents a significant burden on the healthcare system². There is no known vaccine against Lassa fever but infection prevention in small communities has been documented to be an important factor in controlling potential outbreaks of Lassa fever³. The transmission of the virus can be interrupted with community-based health education on rodent control and hospital training programs to avoid nosocomial transmission. Specific measures to prevent Lassa fever include promoting good “community hygiene” to discourage rodents from entering homes, storage of grains and foodstuffs in rodent proof containers, disposing of garbage far from the homes, maintaining clean households, clearing of bushes around homes, trapping and killing of rodents with proper and safe disposal of their carcasses.¹

Objectives

- To assess the knowledge of Lassa fever among residents of Ife Odan, Osun State.
- To determine the preventive practices against Lassa fever among residents of Ife Odan, Osun State.
- To identify factors influencing the knowledge of Lassa fever among residents of Ife Odan, Osun State.

1.1. Justification

Due to the fact that human beings are highly mobile and because of the proximity of the state (Osun) to the outbreak region in the country, this study is worthwhile so as to create awareness of the disease among the rural dwellers in order to prevent further outbreak.

1.2. Research Problem

Lassa fever is endemic in parts of West Africa and persons at greater risk are those living in rural areas with poor sanitary conditions, proximity to animal reservoir, overcrowding, and the practice of drying grains by road side or outside homes and unprotected grain storage so there is therefore a need to know the level of knowledge, preventive practices and factors influencing the knowledge of Lassa fever about Lassa fever among residents of Ife Odan, Osun state.

1.3. Expected contribution to knowledge

Lassa fever is commonly found in rural communities where at least 40% of the population is found, the focus of research into awareness of Lassa fever has been till date population based and showing varying degrees of knowledge. There has been no published study on the knowledge and preventive practices among people in this area. This has much implication for limiting mortality from Lassa fever as the greater proportion of the people live in the rural communities where poverty prevails and standards of living are low. Information gathered from this study will serve as a basis for enlightenment of the community on the causes, modes of transmission and more importantly, prevention of the disease.

2. Literature review

Lassa fever is responsible for as high as 10%–16% of annual hospital admissions in some parts of Sierra Leone and Liberia, this clearly underscores the negative impact of the disease on the population in West African region²⁷. Lassa fever outbreak in Nigeria is a regular occurrence especially during the dry season every few years. However, it is gradually becoming perennial with high case fatalities⁴

With the outbreak confirmed WHO intensified its technical assistance to State and Federal authorities in investigation and response to the outbreak⁵. Lassa high risk areas are near the western and eastern extremes of West Africa. As of 2018, the Lassa belt includes Guinea, Nigeria, Sierra Leone and Liberia⁶.

Good knowledge of Lassa virus means and modes of infection as well as adequate prevention measures may reduce the infection rate¹⁰. The knowledge of Lassa virus was generally low among the populace in a descriptive cross-sectional study carried out among urban slum dwellers in South-western Nigeria. About 20.2% of the population had heard about Lassa fever out of which only 19.4%, 14.1%, 17.0% and 13.9% of respondents had good knowledge of occurrence, causes, disease transmission, and prevention of Lassa fever respectively³¹.

In a study done in Izzi Local Government Area of Ebonyi State, it showed that majority of the respondents had heard about Lassa fever; however most of them had poor knowledge about the disease¹⁰. These findings are similar to studies on knowledge of Lassa fever in communities in the South-West^{16, 17}. However, a study on the knowledge of Lassa fever in the North revealed good knowledge of Lassa fever¹⁸ which is in contrast to findings in the South of the country. The Healthcare professionals are not spared, when the knowledge of Lassa fever was assessed among Healthcare professionals in a study conducted in Ondo State, it showed that less than half, 41.6% of respondents had good overall knowledge of Lassa fever epidemiology, clinical features and precautions to be taken in caring for affected patients²⁴. The poor level of knowledge points towards a growing need to step up not just awareness of Lassa fever but also in-depth knowledge of the cause, mode of transmission and prevention of Lassa fever¹⁰.

Health-care workers caring for patients with suspected or confirmed Lassa fever should apply extra infection control measures to prevent contact with the patient's blood and body fluids and contaminated surfaces or materials such as clothing and bedding. When in close contact (within 1 metre) of patients with Lassa fever, health-care workers should wear face protection (a face shield or a medical mask and goggles), a clean, non-sterile long-sleeved gown, and gloves (sterile gloves for some procedures)⁸.

3. Methodology

The study area is Ife-Odan community. Ife-Odan, It is a rural community, a town in Osun State which has its headquarters in Ejigbo local government area. The population of Ife-Odan was estimated to be 372,191 according to the national population census of the LGA according to the 2016 national population census. It is surrounded by Iwo in the south, Ogbomoso in the North, to the east by Ejigbo and to the west by Oyo town. Most of this rural inhabitant eats rats as a major delicacy. Most women in this community dry their food stuffs (e.g. cassava, grains, etc) by the road side or outside their houses. A sizable proportion of the residents are traders and civil servants. The predominant religions in Ife-Odan include Christianity, Islam and traditional religions²¹.

Only adults (age ≥ 18 yrs), who were permanent resident in the study area for at least 12 months who consented to participate in the study were included while adults (age ≥ 18 yrs), who were permanent resident in the study area for at least 12 months who refused to give consent or were adjudged to be too sick/mentally unfit to give valid answers to our questions were exempted from the study were left out of the study.

The sample size was calculated using the Leslie Kish formula for estimation of single proportions in a population with more than 10,000 inhabitants. The formula used:

$$N = \frac{Z\alpha^2 Pq}{d^2} + \frac{Z\alpha^2 Pq}{d^2}$$

Where:

N = Minimum sample size

Z α is the standard normal deviate at 95% confidence interval with 5% level of significance which equals 1.96.

P = (Prevalence): Based on results of similar study conducted in Izzi Community South-East Nigeria, the proportion of study participants that had excellent knowledge of Lassa fever was 21.4% according to the study conducted by Nwonwu et al in 2018¹⁰.

d is the level of precision which was set at 5%

$$q = 1 - p$$

$$N = \frac{1.96^2 \times 0.214 \times (1 - 0.214)}{0.05^2} = 258$$

A non-response rate of 10% was added to give 286 (required sample size = $N/(1-f)$ where f is 10%; $258/(1-0.1) = 286$).

Furthermore, to correct for possible cluster effect, our sample size was multiplied by cluster factor of 1.5. Hence, a minimum sample size of approximated **430** was estimated for our study.

The Sampling technique that was used for this study is Multi-stage sampling technique. The study made use of semi-structured, interviewer administered questionnaire developed by reviewing previous studies on our topic.

- The questionnaire collected information on the following:
- Section A: Socio-demographic Characteristics of respondents
- Section B: Knowledge about Lassa fever among respondents.
- Section C: Preventive practices against Lassa fever.

The questionnaire was translated to Yoruba, the predominant local language for ease of communication and to ensure proper understanding, it was back translated to English to ensure that the original meaning was retained. The questionnaire was administered to eligible respondents.

The questionnaire was pretested in Ejigbo town among 40 respondents selected using convenience sampling method. The community was not one of the communities that was used for the main study. Each questionnaire was filled and edited daily before entering the data into Statistical Package for Social Sciences (SPSS, Version 21) for analysis. Data were presented using tables and charts, mean and standard deviation were used as summary statistics for continuous data while Chi-square test was used to compare categorical data at $p < 0.05$.

4. Results

A total of 430 questionnaires were administered and all were completely filled and analyzed giving a response rate of 100%.

4.1. Socio-demographic characteristics of respondents

Table 1 below shows the socio-demographic characteristics of respondents. Most of the respondents (54%) are within the age group of 20-39 and the majority were female (57.2%) and of the Yoruba tribe (95.3%). More than half (60.9%) were married and majority were Christians (71.9%). About half the sampled population (52.1%) had secondary level of education leaving majority of the occupational groups in skilled (40.7%) and unskilled (39.5%) professions.

Table 1 Socio-demographic characteristics of respondents

Variable	Frequency N= 430	Percent (100%)
Age (Years)		
≤19	46	10.7
20-39	232	54.0
40-59	88	20.4
≥60	64	14.9
Mean age ± SD	36.4 ± 16.5	
Gender		
Male	184	42.8
Female	246	57.2

Marital status		
Single	125	29.1
Married	262	60.9
Widowed	36	8.3
Separated	5	1.2
Divorced	2	0.5
Tribe		
Yoruba	410	95.3
Igbo	6	1.4
Hausa	14	3.3
Religion		
Christianity	309	71.9
Islam	113	26.2
Traditional	8	1.9
Level of education		
No formal education	65	15.1
Primary	88	20.5
Secondary	224	52.1
Tertiary	53	12.3
Occupational type		
Professional	42	9.8
Skilled worker	175	40.7
Unskilled worker	170	39.5
Unemployed	43	10.0

4.2. Knowledge of respondents on Lassa fever

Table 2 shows the knowledge of respondents on Lassa fever. Sixty-seven percent of the respondents had heard about Lassa fever, another 58.4% of them knew that rat is the vector. More than half (58.6%), of the respondents knew that the disease is deadly, treatable (53.0%) and survivable (51.9%). Forty-three percent of them say it can be transmitted from one person to another, about half (50.5%) agreed that spreading food by the road side is a risk factor along with poor refuse disposal and dirty environment (50.9%), bush burning (34.9%) and exposing food stuff at home (53.0%). More individuals identified headache (55.3%) as the symptom of Lassa fever.

Table 2 Knowledge of Respondents' on Lassa Fever

Variable	Frequency N= 430	Percent (%)
Ever heard of Lassa Fever		
Yes	278	64.7
No	152	35.3
Lassa Fever can be prevented		
Yes	234	54.4
No	196	45.6
Rat is the vector of Lassa Fever		
Yes	251	58.4
No	179	41.6
Lassa Fever is a deadly disease		
Yes	252	58.6
No	178	41.4
Lassa Fever is treatable		
Yes	228	53.0
No	202	47.0
Lassa Fever patient can survive if treated early		
Yes	223	51.9
No	207	48.1
Rural dwellers are at higher risk of contacting Lassa fever infection.		
Yes	168	39.1
No	262	60.9
All age groups are at risk of Lassa fever		
Yes	241	56.0
No	189	44.0
Lassa Fever can be transmitted by eating poorly cooked infected rats.		
Yes	246	57.2
No	184	42.8
Lassa Fever can be transmitted by eating food contaminated with rat urine and faeces		
Yes	248	57.7
No	182	42.3
Lassa Fever can be transmitted from an infected person to another.		
Yes	186	43.3
No	244	56.7
Spreading food by the road side is a risk factor for Lassa fever.		
Yes	217	50.5

No	213	49.5
Poor refuse disposal predisposes to Lassa fever infection.		
Yes	219	50.9
No	211	49.1
Dirty home environment can predispose to Lassa fever infection.		
Yes	219	50.9
No	211	49.1
Bush burning can predispose to Lassa fever infection		
Yes	150	34.9
No	280	65.1
Not covering raw food stuffs can predispose to Lassa fever infection.		
Yes	228	53.0
No	202	47.0
Symptoms of Lassa fever		
Fever	135	31.4
Headache	238	55.3
Body pains	14	3.3
Sore throat	4	0.9
Diarrhoea	16	3.7
Vomiting	8	1.9
Bleeding from orifices	15	3.5

Table 3 shows an overall the knowledge score of the respondents. Fifty-nine percent of respondents had good knowledge while 40.7% had poor knowledge.

Table 3 Knowledge score of Respondents

Knowledge score	Frequency N= 430	Percent (%)
Good Knowledge	255	59.3
Poor Knowledge	175	40.7

The figure 1 shows the sources of information of the respondents on Lassa fever. Their major sources of information on Lassa fever were radio/television (48.1%) followed by parents (35.8%) and friends (6.7%), very few reported that their sources of information on Lassa fever was the internet (0.4%)

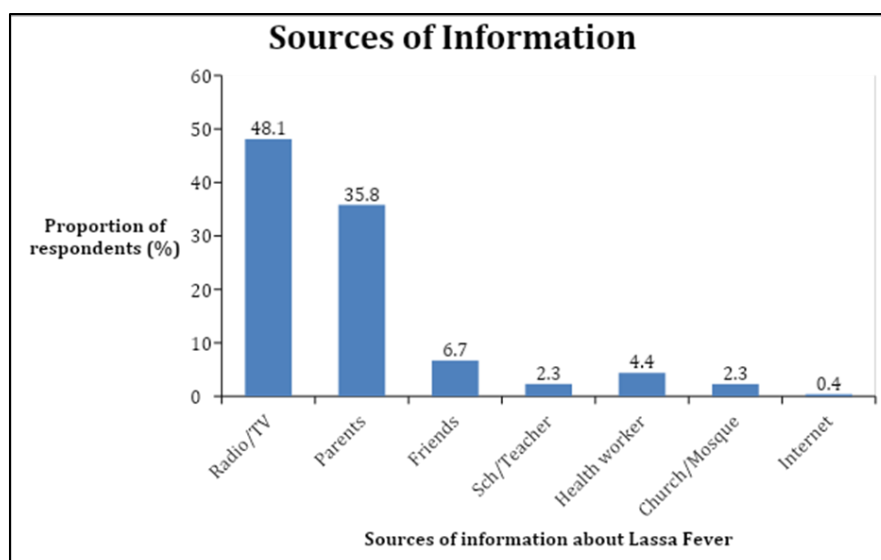


Figure 1 Sources of Information of Respondents on Lassa Fever

4.3. Preventive practices against Lassa fever

The table 4 shows the preventive practices of the respondents on Lassa fever. 63.7% eat rats and 36.7% spread food by the road side. Seventy-seven percent of the respondents clear the bush around their homes regularly. Most of the respondents (81.4%) store their food in covered containers and about half them practice bush burning. Two hundred and sixty-eight (62.3%) of the respondents practice unsanitary waste disposal method (open dumping) and large fraction of the population uses rodenticides (76.0%) to kill rats.

Table 4 Respondents' Preventive Practices against Lassa Fever

Variable	Frequency N= 430	Percent (100%)
Do you eat rats?		
Yes	274	63.7
No	156	36.3
Do you spread food by the road side?		
Yes	158	36.7
No	272	63.3
Do you clear the bush around your house regularly?		
Yes	331	77.0
No	99	23.0
If yes, how frequent?		
Weekly	192	44.7
Monthly	209	48.6
Others	29	6.7
How do you store your food stuffs in the house?		
In a container with cover	350	81.4
In a container without cover	49	11.4
In a sack	30	7.0

Others	1	0.2
Do you practice bush burning?		
Yes	219	50.9
No	211	49.1
Where do you dispose your refuse?		
Sanitary	162	37.7
Unsanitary	268	62.3
How do you kill rats in your house?		
Use rodenticides		
Yes	327	76.0
No	103	24.0
Use rat gum		
Yes	228	53.0
No	202	47.0
Physically kill rats		
Yes	237	55.1
No	193	44.9
Use cats to kill rats		
Yes	119	27.7
No	311	72.3
Fumigation of house		
Yes	59	13.7
No	371	86.3

4.4. Bivariate analysis

The association between some of the respondents' demographic characteristics and their knowledge is shown in table 4. Respondents ≤ 19 years (71.7%) significantly ($p=0.001$) had good knowledge on Lassa fever than those within other age groups. The respondents who were single, 88 (70.4%) significantly ($p=0.000$) had good knowledge compared to their other counterparts. Respondents with tertiary education, 46 (86.8%) showed significantly ($p=0.000$) good knowledge compared to the other categories of educational level, while those who are professionals, 33 (76.6%) showed significantly ($p=0.03$) good knowledge compared to those in other types of occupation.

5. Discussion

The high virulence, significant mortality and morbidity and non-specific mode of presentation of Lassa fever has made it to become a disease of public health significance not just at the community level but also at the international/global level. It is therefore important that campaigns and counseling should be carried out to create awareness about the disease^{22, 23}.

More than half of the respondents were between the ages of 20-39 and a mean age of 36.4 ± 16.5 . This is similar to findings in a study done on a rural community in Southern Nigeria which had a mean age of 33.4 ± 12.8 ¹⁵, and findings from a study done in South-East Nigeria which showed that age group 21-30 had the greatest proportion and mean age of 29.6 ± 10.4 ¹⁰. This is in contrast to studies in a rural community in Ondo State where most were between ages 45 – 64 with mean age of 54.5 ± 19.2 ¹⁹. More than half of the respondents had secondary level of education and most were skilled workers. These results are similar to the findings of studies done on rural communities in Akwa Ibom⁷, Ebonyi¹⁰, Ondo

State¹⁹, Kaduna¹⁸. These findings are in contrast with findings of studies done in Ile-Ife, Osun State where most of the respondents had tertiary level of education²⁰.

In this study, most of the population (64.7%) had heard of Lassa fever and a little above average knew that the disease could be prevented. This finding is lower than 93.1% reported in a similar study among households in Irrua, an endemic area for Lassa fever in Edo state, reports of 87% in Nasarawa state and 90.8% in a rural community in Akwa Ibom, but higher than reports of 59% in Ile-Ife, Osun State^{15,22,20,14,15}. A higher level of awareness (95%) was reported in a study in Edo state probably because this was amongst health workers who are have more information to actually manage the disease²². These findings are in contrast to those by a study done at Ijebu Owo, Ondo State where most of them (82.8%) had not heard about Lassa fever before¹⁹. 57.7% of the respondents knew that Lassa fever can be transmitted by eating food contaminated with faeces or urine from an infected rat, similar to studies carried out in Owo, Ondo State¹⁹.

On the knowledge of transmission of Lassa fever, the majority of respondents knew that food contaminated with rats and eating poorly cooked rats could transmit the infection to others. Most respondents also knew that though Lassa fever kills, it is a treatable condition and infected patients who seek early treatment do survive the infection. This agrees with a similar study¹⁵.

Although, consumption of poorly cooked infected rodents was recognized this as a risk factor for the transmission of the disease, however this would not reduce the consumption of rodents as most of the participants were convinced that the rats they ate could not infect them with Lassa fever and also because it is considered as a source of cheap meat. This finding is similar with results that were gotten in a study done in Republic of Guinea where rodent consumption was much higher¹¹. Only 43.3% of the population knew that Lassa fever could be transmitted from one person to another, this could be due to the shallow knowledge that the residents of Ife Odan had as regards Lassa fever. Most of the population who knew of Lassa fever were able to identify fever (31.4%) and headache (55.3%) as symptoms of the disease, other symptoms that were identified include body pains (3.3%), diarrhea (3.7%) and bleeding from orifices (3.5%), a study conducted in Edo State also yielded similar results¹².

The level of knowledge on the preventive practices against Lassa fever was not really encouraging, only a little above average recognized spreading food by the road side, poor refuse disposal, improper covering of food and dirty home environment as risk factors for Lassa fever. These findings are lower than those gotten from a similar study, where a greater proportion of the respondents had a better knowledge of the preventive practices¹⁵.

Most of the respondents did not see bush burning as a risk factor for transmission of Lassa fever. Bush burning which is being practiced by majority of the study population was seen by only 34.9% as a risk factor for Lassa fever infection. This should be strongly dissuaded as bush burning displaces the rats from their natural habitat into homes. Collaboration between the health ministry, the media and extension workers of the ministry of agriculture may be useful in this regard.

The mass media stands out as a veritable tool for awareness creation in this study as majority (64.9%) of respondents, just as the study in Ondo state¹⁹ and Osun State²⁰ became aware of Lassa fever through the mass media. The internet was the least source of information for the respondents and this could be due the expensive costs of phones that can assess the internet or the rising cost of buying data from service providers.

The overall knowledge score calculated revealed that out of the 430 people that were assessed, 255(59.3%) have good knowledge about the disease, while 175(40.7%) have poor knowledge. These findings are in contrast to those found in a study where 31% of the population had correct knowledge about Lassa fever¹². This might be due to the different parameters used to assess knowledge in the different populations. The associations of demographic characteristic of respondents with categorized knowledge scores were assessed. Individuals who were less than 19 years of age were realized to have better knowledge about Lassa fever compared to those in other age groups. This could be due to the extra time spent by individuals in this age group with mass media, and unlike individuals in other age groups they are burdened with jobs and taking care of a family. This finding is somewhat similar to finding by Morgan *et al.*, in 2018⁷. Significant relationship was found between respondents' level of education and their knowledge on Lassa fever (p-value = 0.000). Respondents with tertiary level of education have the best knowledge on Lassa fever. These findings are similar to findings from similar studies in Osun State, Edo State and Kaduna, where it was also identified that the higher the level of education, the better the knowledge on Lassa fever^{18,20,12}. Significant association was also found between respondents marital status and knowledge of Lassa fever. Respondents that are single were found to have better knowledge about Lassa fever compared to the married group. These findings are in contrast with studies assessing marital status and its implications on health¹³. This could be due to the challenges associated with marriage including

time spent on building a family in this part of the world. No significant relationships were found between the gender, tribe or religion of respondents' and their knowledge on Lassa fever.

As regards the preventive practices against the disease, more than half of the population took preventive steps against Lassa fever as 63.3% of the population did not spread food by the road side 77% of the population cleared their bushes regularly and 81.4% kept their raw food in containers with covers. However, 62.3% of the population disposed of their refuse in unsanitary ways, this could be due to the unavailability of a functioning incinerator, and this is in keeping with a similar study that was carried out in Ondo State²⁴. Poor refuse disposal and dirty home environment were recognized as risk factors for Lassa fever. Similar studies carried out in Sierra Leone have shown a relationship between poor housing and external hygiene and rodent burrows^{9,11}.

Recommendations

- Education of the citizens up to the tertiary level should be encouraged so as to have better health seeking behavior.
- Encourage the citizens to practice sanitary ways of waste disposal such as burying, manure pit, composting etc.
- Abolition of practices (e.g. spreading food by the roadside) that might enhance contact with the Lassa fever virus should be encouraged.
- At the grass root, continuing education of the populace on the dangers of the disease, its modes of presentation and the need to seek medical treatment early should be intensified.
- Awareness (campaigns) and advocacy on clean and safe environment to promote prevention especially within the endemic areas are necessary.
- The Local Government and State Government should ensure to provide sanitary ways of waste disposal and ensure enforcement of preventive practices.
- Health education and community education resource development and policy development at the state level for coordination, surveillance, case management, communication and social mobilization is expedient.
- The Federal Government should make education a priority for its citizen up to the tertiary level.

6. Conclusion

The findings of this study show that the level of knowledge of Lassa fever among the studied population was slightly above average. Their major sources of information were mass media (Television/radio). However, in spite of this, the people still embark on some practices that could predispose to the outbreak of Lassa fever.

Factors identified to influence knowledge of Lassa fever among respondents include respondents' age, level of education, marital status and occupation.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declared that there are no conflicts of interest in this research work.

Statement of ethical approval

This research work was conducted in compliance with ethical standard because clearance was obtained from the ethical committee of the College of Health Sciences, Bowen University, Iwo, Nigeria.

Statement of informed consent

informed consent was obtained from the study population.

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