Assessment of Knowledge and Sources of Information on Lassa Fever Infection Among the Undergraduate Students of Ebonyi State University, Nigeria

MaryJoy Umoke1, Prince Christian Ifeanachor Umoke2, Chioma Adaora Nwalieji1, Rosemary N. Onwe3, Ifeanyi Emmanuel Nwafor4, Samson Olaoaluwa Agbaje2, and Ignatius O. Nwimo3

Abstract
Lassa fever is a zoonotic disease characterized by acute viral hemorrhagic fever, endemic in West Africa including Nigeria. The study assessed the knowledge and sources of information on Lassa fever infection among the undergraduate students of Ebonyi State University, Nigeria. This was a descriptive cross-sectional survey conducted among a sample of 389 students (18 years above). A self-administered questionnaire was used to collect data. Data were analyzed with SPSS (Version 20), and hypotheses were tested at \( p < .05 \) level of significance. Results showed that the majority of the students had good knowledge of Lassa fever description, 232 (60.75%); the signs and symptoms, 221 (57.9%); mode of transmission, 261 (68.41%); and preventive measures, 291 (76.13%). Radio, 23 (84.6%), and television, 307 (80.4%), were their major sources of information. Age \( (p = .424) \), sex \( (p = .082) \), and academic level \( (p = .553) \) were not significant in the study, while faculty (social sciences; \( p = .000^* \)) was strongly associated with the knowledge of Lassa fever. In conclusion, the overall knowledge of Lassa fever was good among students, though knowledge gaps were observed in the signs and symptoms. We recommend that health education on endemic diseases in the state be made a compulsory course as a general study (GST) in the university. Also, the internet, social media, and campus campaign be further used to educate and sensitize students on the effect of Lassa fever.

Keywords
Lassa fever, knowledge, undergraduates, sources of information, Ebonyi State

Introduction
Lassa fever is an extremely virulent and highly infectious disease endemic in West Africa, including Nigeria (Akinwumi et al., 2016; Olayiwola & Bakarey, 2017; World Health Organization [WHO], 2017). Annually, Lassa virus infection in West Africa is estimated at 100,000 to 300,000, with approximately 5,000 deaths (Adeomi et al., 2017; Omeh et al., 2017). Regrettably, such estimates are underreported, because surveillance for cases of the disease is not evenly carried out. For instance, in some parts of Sierra Leone and Liberia, 10% to 16% of people admitted to hospitals every year showed signs of Lassa fever, which shows the serious effect of the disease on the residents of the region (Centers for Disease Control and Prevention [CDC], 2019).

Nigeria had an outbreak of Lassa fever in the year 2012 with 1,723 cases, 112 deaths, 201 laboratory-confirmed cases, and a case fatality rate of 6.50 (Nigeria Center for Disease Control [NCDC], 2018; WHO, 2018). Between January 1 and April 15, 2018, 1,849 suspected cases have been reported from 21 states (Abia, Adamawa, Anambra, Bauchi, Benue, Delta, Ebonyi, Edo, Ekiti, Federal Capital Territory, Gombe, Imo, Kaduna, Kogi, Lagos, Nasarawa, Ondo, Osun, Plateau, Rivers, and Taraba). Out of these, 413 patients were confirmed with Lassa fever, nine were

1Ebonyi State Ministry of Health Abakaliki, Nigeria
2University of Nigeria, Nsukka, Nigeria
3Ebonyi State University, Abakaliki, Nigeria
4Alex Ekwueme Federal University Teaching Hospital Abakaliki, Nigeria

Corresponding Author:
MaryJoy Umoke, School Health Programme Unit, Ebonyi State Ministry of Health Abakaliki, PMB, 053, Abakaliki 480214, Nigeria.
Email: maryjoy4umoke@gmail.com

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classified as suspected, 1,422 tested negative, and the remaining five laboratory results were pending. Of the 413 confirmed and the nine probable Lassa fever cases, 114 deaths were reported (case fatality rate for confirmed cases is 25.4% and for confirmed and probable cases combined is 27%). As of April, 27 health care workers in seven states (Abia, Benue, Ebonyi, Edo, Kogi, Nasarawa, and Ondo) have been infected since January 1, 2018, eight of whom have died (WHO, 2018).

Ebonyi State is one of the three high burdened states with frequent occurrences of Lassa fever outbreaks (NCDC, 2019b). Abakaliki Local Government Area (LGA) had the highest proportion of confirmed Lassa fever cases during the 2018 and 2019 outbreaks in the State (Usuwu et al., 2020). Researches carried out in places around the country have revealed that knowledge of the disease is deficient among many and inadequate among quite a large population making it hard for people to prevent the incident of an outbreak (Aigbiremolen et al., 2012; Akinwumi et al., 2016; Akunne et al., 2018; Fidelis & Olajolumo, 2018; Igbedosa et al., 2017). In response to the poor knowledge of the public, the federal government put up various measures to prevent further spread of the diseases and treatment when it occurs. Such measures are the enhancement of disease surveillance, social health education through mass media, increased the number of diagnostic centers from 6 to 12, and also inaugurated a 15-member multisectoral Lassa fever Eradication Committee charged with fashioning and implementing the multifaceted response strategies against the outbreak (Anufofo, 2016; Reuben & Gyar, 2016; Wogu, 2018). In the same vein, Ebonyi state in its effort built a new Lassa fever diagnostic center and inaugurated a committee in the eradication of Lassa fever in the state (Nwankwo & Orji, 2017; Wogu, 2018). This study is of great importance to the Ministry of Health and the Government whose objectives of primary health care are mainly on preventive health and eradication of diseases. It created awareness to the general public on the health implications of Lassa fever in our society.

Literature Review

Lassa fever is an acute viral hemorrhagic disease with high morbidity and death rates, and endemic in so many countries in West Africa (Wilkinson, 2015). It was originally noticed in 1969 in a town called Lassa in Borno state, when two missionary nurses died in Nigeria (Akinwumi et al., 2016; Buchmeier et al., 2007). Its primary animal host is the Natal Multimammate Mouse (Mastomys natalensis), an animal native to mainly of Sub-Saharan Africa (Adewuyi et al., 2009; Buchmeier et al., 2007; NCDC, 2019a). The virus is most likely transmitted by contact with the feces and urine of animals accessing grain stores in residential areas (Koga & Nwadiaro, 2016; Mazzola & Kelly-Cirino, 2019; Nwonwu et al., 2018). In health care settings, transmission from person-to-person (nosocomial transmission) is common due to unavailability and improper use of proper personal protective equipment (PPE; Aigbiremolen et al., 2012). The virus may spread in infected medical tools, such as reused needles (Asogun et al., 2012; Isere et al., 2018; Nwonwu et al., 2018). Also aerosol or airborne transmission may occur during cleaning activities, such as sweeping, mopping, and washing (Amorosa et al., 2010; Tobin et al., 2013).

Within 1 to 3 weeks after an individual had come in contact with the virus, signs and symptoms usually occur. Approximately 80% of Lassa fever virus infection symptoms are mild and are undiagnosed. Such mild symptoms are slight fever, general malaise, weakness, and headache. However, in 20% of patients, the disease may advance to more severe symptoms such as hemorrhage (in gums, eyes, or nose), respiratory distress, repeated vomiting, shock, swelling in the face, and chest, back, and abdominal pain (Akhuemokhan et al., 2017; Reuben & Gyar, 2016). Case definition of suspected Lassa fever consists of known exposure to a person who has had Lassa fever (fever >38°C) for less than 3 weeks with the absence of signs of local inflammation (WHO, 2018). Neurological problems have also been observed, including hearing loss, tremors, and encephalitis (Ibekwe et al., 2011). However, only 1% of all Lassa virus infections result in death which is common among women in the third trimester of pregnancy. Spontaneous abortion is a severe complication of infection with an approximated 95% mortality in fetuses of infected pregnant mothers (Ogoina, 2013). Without treatment, mortality occurs by the 10th to 12th day of illness with case fatalities of 1% to 2% in the general population and 15% to 20% in hospitalized patients, rising as high as 50% during epidemics (Amoran & Onwube, 2013; Ekanem et al., 2018; WHO, 2018).

There is no vaccine for the prevention of Lassa fever, though development is underway (Adewuyi et al., 2009; Ehlkes et al., 2017; Ogoina, 2013). The main prevention is by avoiding contact with Mastomys rodents, putting food away in rodent-proof containers, and keeping the environment clean to discourage rodents from entering homes; however, the wide distribution of Mastomys in Africa makes complete control of this rodent reservoir impractical (Adewuyi et al., 2009; Kelly et al., 2013). Currently, an antiviral drug known as Ribavirin has been used with success in Lassa fever patients and is most effective when given early in the course of the illness. Also, the use of ethnomedicinal remedies in the treatment of people and animals infected with viral infections has been documented (Ighedosa et al., 2016; Inegbenebor et al., 2010; Ireye et al., 2018; Iroezindu et al., 2015).

Several studies have been conducted among students on the knowledge of Lassa fever in different regions of the country, for instance: Akinwumi et al. (2016) conducted a descriptive, cross-sectional study to determine the level of knowledge of Lassa fever among students of Adeyemi College of Education, Ondo State, Southwest Nigeria using semistructured, self-administered questionnaires for data
collection, and they reported poor knowledge among the respondents.

In the same vein, Ighedosa et al. (2017) conducted a cross-sectional epidemiological study to assess the knowledge, attitude, and practice of prevention of Lassa fever, among students’ resident in two campuses of the University of Benin, Edo State, Nigeria, with a sample of 300 students using a pretested structured questionnaire for data collection, but found that they had poor knowledge of Lassa fever. Similarly, Akunne et al. (2018) conducted a cross-sectional survey to assess the knowledge of Lassa fever among undergraduates in the University of Nigeria, Nsukka (UNN) with students in three faculties (Pharmacy, Medicine, and Health Sciences) between July and October 2016 using a self-administered questionnaire. Results showed that the overall knowledge of Lassa fever infection was poor among the students.

Also, Ekuma and Akpan (2017) determined the knowledge attitudes, and practices toward Lassa fever and infection control among medical doctors and students in Uyo, Akwa Ibom, Nigeria, using a questionnaire for data collection. Good knowledge of Lassa fever was found among the respondents. Similarly, Osahon and Oaikhena (2018) assessed the knowledge and perception of Lassa fever among clinical students of the University of Benin, Benin City, Nigeria, using a cross-sectional descriptive study with a self-administered questionnaire to obtain data, which revealed a good knowledge of Lassa fever among the students. Usifoh et al. (2019) conducted a descriptive study to assess Lassa fever stigmatization among staff and students of the University of Benin on a sample of 300 respondents. They reported that stigmatization was significantly associated with poor knowledge of Lassa fever transmission and prevention.

The sources of information on Lassa fever were television, radio, newspaper, health workers, church, social media, internet, family and friends, and campus campaign (Akunne et al., 2018; Ekanem et al., 2018; Ilesanmi et al., 2015; Nwonwu et al., 2018; Osahon & Oaikhena, 2018; Ossai et al., 2020; Uduak, 2018; Usuwa et al., 2020; Wogu, 2018).

However, studies have been conducted on knowledge of Lassa fever in communities in Ebonyi State (Nwonwu et al., 2018; Ossai et al., 2020; Usuwa et al., 2020; Wogu, 2018), though we did not come across any among undergraduates in the state, the gap which this current study tends to fill. Thus, the study investigated knowledge of Lassa fever and sources of information among undergraduates in Ebonyi State University (EBSU) using demographic variables of age, sex, faculty, and academic year of study.

Hypotheses

There is no significant difference in knowledge of Lassa fever based on age, sex, year of study, and faculty at $p < .05$ level of significance.

Materials and Methods

Research Design

The study used a descriptive cross-sectional survey, which is a type of design where the researcher does not alter the exposure status but measures the outcome and the exposure(s) in the population under observation. This design was successfully used in related studies of Akunne et al. (2018), Nwonwu et al. (2018), and Umoke et al. (2020).

Area of Study

This study was carried out in EBSU Abakaliki, which is an urban community with a four-campus structure, namely, Ishieke (Education Faculty), Permanent site (Faculty of Social Sciences), the Campus of Agricultural Science (CAS), and Presco (Clinical and Health Science [CHS]).

Population of the Study

The population of the study comprised of 13,917 undergraduate students of EBSU. Based on the available records, Ishieke campus (Education Faculty) has a total population of 2,112; permanent site (Faculty of Social Sciences) 3,793; CAS 2,116; and Presco campus (CHS 5896; EBSU, 2019).

Sample Size Determination

The sample size for the study was determined using the Taro Yamane formula for single proportions (Yamane, 1967). A sample size of 389 undergraduate students was included in the study (Appendix A).

Sampling Technique

A multistage sampling technique was used to select the students. In the first stage, there was a selection of the four campuses of EBSU Abakaliki, which are Presco (CHS), Ishieke (Education), CAS, and Permanent Site (Social Sciences). In the second stage, a purposive sampling technique was used to select the faculties in each campus. In the third stage, a total of 389 students were proportionately allocated to each of the campuses based on their population using proportional affixation criterion to determine the sample size for each faculty: Ishieke 59, Permanent site 106, CAS 59, and CHS 165 (Appendix B). In the fourth stage, a simple random-sampling technique of balloting was used to select the students at each level that answered the questionnaire.

Ethical Approval

Ethical approval for the study was obtained from the Research and Ethics Committee of Ebonyi State Ministry of Health Abakaliki, Nigeria (Ref. No. EBS/MOH/ERC/V.53/032).
**Informed Consent**

Written informed consents were obtained from the participants.

**Instrument for Data Collection**

A pretested semistructured questionnaire designed by the researchers was used for the study. It has three sections—A: demographic variables, B: knowledge, and C: sources of information.

**Validation of Instrument**

Two experts in the field of human kinetics and health education from UNN and two experts from EBSU validated the instrument. Correction made was used to finalize the instrument.

**Reliability of the Instrument**

Test–retest reliability of the research instrument was established by pretesting on 30 students not included in the study. The reliability coefficient was .76; therefore, the questionnaire was considered reliable.

**Method of Data Collection**

Three research assistants with at least a degree were trained and recruited for the study. Out of 389 questionnaires distributed, 382 (98.2%) were retrieved.

**Method of Data Analysis**

Data analysis was done using IBM SPSS for Windows (Version 20; IBM Corp., Armonk, NY, USA). Descriptive statistics such as frequencies, percentages, and inferential statistics ($\chi^2$) were used in the analysis, and the level of statistical significance determined at $p$ value $<.05$. The outcome measures of the study were either good or poor knowledge. A good knowledge was determined by the proportion of respondents who scored $\geq50\%$ while poor knowledge was determined by the proportion of respondents who scored $<50\%$ which is in line with the study of Ossai et al. (2020).

**Results**

The results of Table 1 showed that out of 382 undergraduates, females were 214 (56.0%) and males 168 (44.0%) with their ages as follows: 18 to 21 years, 191 (50.0%); 22 to 25 years, 141 (36.9%); 26 to 30 years, 35 (9.2%); and 31 years and above, 15 (3.9%). The academic levels were as follows: 100 level, 189 (49.5%); 200 level, 71 (18.6%); 300 level, 56 (14.7%); 400 level, 64 (16.8%); and 500 level, 2 (0.5%), and their distributions based on campuses were as follows: CHS, 16 (42.9%); Education (Ishieke campus), 57 (14.9%); CAS, 58 (15.2%); and Permanent Site, 103 (27.0%).

In Table 2, overall description knowledge of Lassa fever among students was good, 232 (60.75%). Good knowledge on the signs and symptoms, 221 (57.9%); mode of transmission, 261 (68.41%); and preventive measures, 291 (76.13%) were observed (see Tables 3, 4, and 5).

Good knowledge of Lassa fever was observed more among males, 58.9%; older age (26 years and above), 57.1%; 300L students, 58.9%; and students in social sciences, 68.9%. There was no significant difference in knowledge based on sex ($p = .082$), age ($p = .424$), and academic level ($p = .553$), while faculty (social sciences; $p = .000^*$) was significant (Table 6). Sources of information of Lassa fever among the students were as follows: radio, 23 (84.6%); television, 307 (80.4%); newspaper, 251 (65.7%); religious houses, 157 (41.1%); health workers, 304 (79.6%); internet, 296 (77.5%); family/friends, 252 (66.06); and campus campaign, 167 (43.7%) (Table 7).

**Discussion**

The result of our study showed that the overall knowledge of Lassa fever was good among the students. This is in line with the findings of Adebayo et al. (2015), Adebinpe (2015), Adeomi et al. (2017), Ekanem et al. (2018); Idris et al. (2015), Omotowo et al. (2016), and Osahon and Oaikhena

### Table 1. Sociodemographic Variables of Respondents ($N = 382$).

| Variables          | Frequency | %     |
|--------------------|-----------|-------|
| Sex                |           |       |
| Male               | 168       | 44.0  |
| Female             | 214       | 56.0  |
| Age in years       |           |       |
| 18–21              | 191       | 50.0  |
| 22–25              | 141       | 36.9  |
| 26–30              | 35        | 9.2   |
| 31 years above     | 15        | 3.9   |
| Academic level     |           |       |
| 100                | 189       | 49.5  |
| 200                | 71        | 18.6  |
| 300                | 56        | 14.7  |
| 400                | 64        | 16.8  |
| 500                | 2         | 0.5   |
| Campuses/faculty   |           |       |
| CHS                | 164       | 42.9  |
| Education (Ishieke)| 57        | 14.9  |
| CAS                | 58        | 15.2  |
| Social Sciences (Permanent site) | 103 | 27.0 |
| Total              | 382       | 100.0 |

Note. CHS = Clinical and Health Science; CAS = Campus of Agricultural Science.
Umoke et al. (2018) who reported good knowledge. In contrast, Abdulkadir and Mohammed (2019), Adesoji et al. (2016), Akinwumi et al. (2016), Akunne et al. (2018), Akinwumi et al. (2016), Ihesanmi et al. (2015), Ighedosa et al. (2016), Nwonwu et al. (2018), Olowookere et al. (2017), and Usifoh et al. (2018) reported poor knowledge among respondents in their studies, while Tobin et al. (2013) revealed overall fair knowledge. However, there were no discernable possible reasons for the differences in the overall knowledge of Lassa fever across institutions in the various studies.

Also, in this present study, males (58.9%) had more knowledge than the female respondents. But no significant difference was found in knowledge based on sex \((p = .082)\). This is in agreement with the reports of Abdulkadir and Mohammed (2019), Adeomi et al. (2017), and Olowookere et al. (2014), but at variance with the works of Adebimpe (2015), Adesoji et al. (2016), Akunne et al. (2018), Nwonwu et al. (2018), and Oladeinde et al. (2014) that stated that sex was strongly associated with Lassa fever knowledge. Based on age, older students (26 years and above; 57.1%) had more knowledge but not significant \((p = .424)\). This is in line with Adesoji et al. (2016) reported that age was not significant. At variance, Ekanem et al. (2018) and Tobin et al. (2015) revealed that age was significant. Students who were in 300 level (58.9%) were more knowledgeable on Lassa fever; however, it was not significant \((p = .553)\). This is at variance with the results of Abdulkadir and Mohammed (2019), Adesoji et al. (2016), Akunne et al. (2018), Nwonwu et al. (2018), and Oladeinde et al. (2014), who stated that academic level was strongly associated with Lassa fever. Students in social sciences (68.9%) were more knowledgeable. However, faculty was significant with knowledge \((p = .000^*)\). This is in line with Akunne et al. (2018) who reported that faculty was significantly associated with knowledge of Lassa fever, and at

### Table 2. Description Knowledge of Lassa Fever Among Student of EBSU \((N = 382)\) on the Naming, Animal Reservoir, Causative Organism, and Curability of Lassa Fever.

| S. No. | Description of Lassa fever | Frequency | %  |
|--------|-----------------------------|-----------|----|
| 1.     | Origin of the name          |           |    |
| i.     | Man                         | 73        | 19.1 |
| ii.    | Woman                       | 18        | 4.7 |
| iii.   | Village (correct response)   | 48        | 12.6 |
| iv.    | Animal                      | 243       | 63.6 |
| 2.     | Reservoir                   |           |    |
| i.     | Dog                         | 25        | 6.5 |
| ii.    | Chicken                     | 11        | 2.9 |
| iii.   | Cat                         | 18        | 4.7 |
| iv.    | Rat (correct response)       | 328       | 85.9 |
| 3.     | Causative organism          |           |    |
| i.     | Bacteria                    | 88        | 23.0 |
| ii.    | Virus (correct response)     | 256       | 67.0 |
| iii.   | Spirochete                  | 22        | 5.8 |
| iv.    | Fungi                       | 16        | 4.2 |
| 4.     | Is Lassa fever curable       |           |    |
| i.     | Yes (correct response)       | 296       | 77.5 |
| ii.    | No                          | 86        | 22.5 |
| 5.     | Good knowledge               | 232       | 60.75 |
| Poor knowledge |                    | 168       | 39.25 |

### Table 3. Knowledge of Signs and Symptoms.

| S. No. | Signs and symptoms | Yes \((f)\) | %  |
|--------|---------------------|-------------|----|
| 1.     | Fever               | 334         | 87.4 |
| 2.     | Bloody stool        | 221         | 57.9 |
| 3.     | Sore throat         | 195         | 51.0 |
| 4.     | Diarrhea            | 200         | 52.4 |
| 5.     | Vomiting            | 263         | 68.8 |
| 6.     | Bleeding from eyes, nose, ears, and other body orifices | 229 | 59.9 |
| 7.     | Body weakness       | 305         | 79.8 |
| 8.     | Cough               | 222         | 58.1 |
| 9.     | Chest pain          | 204         | 53.4 |
| 10.    | Facial swelling     | 170         | 44.5 |
| 11.    | Abortion/miscarriage in pregnant women | 93 | 24.5 |
| 12.    | Abdominal pain      | 202         | 52.9 |
| 13.    | Nausea              | 187         | 49.0 |
| 14.    | Dizziness           | 237         | 62.0 |
| 15.    | Myalgia (muscle pain)| 206        | 53.9 |
| 16.    | Restlessness        | 265         | 69.4 |
| Good   |                      | 221         | 57.79 |
| Poor   |                      | 179         | 42.21 |

### Table 4. Knowledge of Mode of Transmission \((N = 382)\).

| S. No. | Mode of transmission | Yes \((f)\) | %  |
|--------|----------------------|-------------|----|
| 1.     | Eating of rats       | 341         | 89.3 |
| 2.     | Eating food contamined by rat’s feces and urine | 364 | 95.3 |
| 3.     | By being bitten by rats | 263        | 68.8 |
| 4.     | Contact with rats, their feces, blood, or urine | 312 | 81.7 |
| 5.     | Improper refuse disposal | 202        | 52.9 |
| 6.     | Dirty environment   | 219         | 57.3 |
| 7.     | Eating of uncovered/unprotected stored food (cooked/uncooked) | 270 | 70.7 |
| 8.     | Eating of poorly cooked food | 110 | 28.8 |
| 9.     | Contact with someone sick of Lassa fever | 305 | 79.8 |
| 10.    | Contact with dead body of someone who died from Lassa fever | 283 | 74.1 |
| 11.    | Food product spread by the road side | 139 | 36.4 |
| 12.    | Contact with blood, vomit, stool, urine, or semen of the person who is suffering from Lassa fever | 328 | 85.9 |
| Good knowledge |                     | 261         | 68.41 |
| Poor knowledge |                    | 139         | 31.59 |
The main sources of information were radio (84.6%) and television (80.4%), while the proportion of source of Lassa fever information from campus campaign and religious houses was low (43.7% and 41.1%, respectively). This is in agreement with Abdulkadir and Mohammed (2019), Adeomi et al. (2017), Awosanya (2018), Ekanem et al. (2018), Nwonwu et al. (2018), Oladeinde et al. (2014), Olowookere et al. (2017), Omotowo et al. (2016), Osahon and Oaikhena (2018), Usuwa et al. (2020), and Wogu (2018) who reported that social media, radio, and television were their main sources of information on Lassa fever. In line with the result of this present study, Ossai et al. (2020) also revealed that the proportion of source of Lassa fever information from campus campaign and religious houses was low in their study.

### Limitation

The study is limited to undergraduate students of EBSU. The different locations of the faculties made it cumbersome for the researchers.
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Conclusion

Conclusively, the knowledge of Lassa fever among students in higher institutions in Ebonyi State where the disease is endemic is imperative because students who are adequately informed about the disease, its signs and symptoms, mode of transmission, and prevention can protect themselves and curb the spread of the illness. Our study revealed good knowledge of Lassa fever among the undergraduate students of EBSU with gaps in the knowledge of the signs and symptoms of Lassa fever, and radio was their major source of information.

Recommendation

We recommend that health education on endemic diseases in the state should be a compulsory course as a general study (GST) in the university. Internet, campus campaign, social media, and churches are recommended to further educate and sensitize the students on Lassa fever.

Appendix A

Taro Yamen Formula for Determining Sample Size

The formula is stated thus:

\[ n = \frac{N}{1 + Ne^2}, \]

where \( n \) is sample size; \( N \) is the total population size, which is 13,917; \( e \) is the allowable error of 5% (0.05); and 1 is constant. Thus, our sample size (\( n \)) can be computed thus:

\[ n = 13,917 / 1 + 13,917(0.05)^2, \]

\[ n = 13,917 / 1 + 13,917(0.0025) \]

Table 6. Association Between Knowledge of Lassa Fever and Sociodemographic Variables of Respondents (\( N = 382 \)).

| Variables                      | Lassa fever knowledge | \( \chi^2 \) | \( p \) |
|--------------------------------|-----------------------|-------------|--------|
|                                | Good, \( f \) (%)     | Poor, \( f \) (%) |
| Sex                            |                       |             |        |
| Male                           | 99 (58.9)             | 69 (41.1)   | 3.020  | .082  |
| Female                         | 107 (50.0)            | 107 (50.0)  |        |       |
| Age in years                   |                       |             |        |
| 18–21                          | 109 (57.1)            | 82 (41.9)   | 2.799  | .424  |
| 22–25                          | 71 (50.4)             | 70 (49.6)   |        |       |
| 26–30                          | 20 (57.1)             | 15 (9.2)    |        |       |
| 31 years and above             | 9 (60.0)              | 6 (40.0)    |        |       |
| Academic level                 |                       |             |        |
| 100                            | 100 (52.9)            | 89 (47.1)   | 3.029  | .553  |
| 200                            | 39 (54.9)             | 32 (45.1)   |        |       |
| 300                            | 33 (58.9)             | 23 (41.1)   |        |       |
| 400                            | 34 (53.1)             | 30 (46.9)   |        |       |
| 500                            | 2 (100.0)             | 0 (0.0)     |        |       |
| Campuses                       |                       |             |        |
| CHS                            | 94 (57.3)             | 70 (42.7)   | 20.481 | .000* |
| Education (Ishieke)            | 29 (50.9)             | 28 (49.1)   |        |       |
| CAS                            | 37 (63.8)             | 21 (36.2)   |        |       |
| Social Sciences (Permanent site)| 71 (68.9)            | 32 (31.0)   |        |       |

Note. CHS = Clinical and Health Science; CAS = Campus of Agricultural Science.

*significant.

Table 7. Sources of Information of Lassa Fever Knowledge Among Students of EBSU.

| S. No. | Sources of information | Yes (\( f \)) | %   |
|--------|------------------------|--------------|-----|
| 1.     | Radio                  | 323          | 84.6|
| 2.     | Television             | 307          | 80.4|
| 3.     | Newspaper              | 251          | 65.7|
| 4.     | Religious houses       | 157          | 41.1|
| 5.     | Health workers         | 304          | 79.6|
| 6.     | Internet               | 296          | 77.5|
| 7.     | Family/friends         | 252          | 66.0|
| 8.     | Campus campaign        | 167          | 43.7|

Note. EBSU = Ebonyi State University.
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Author Contributions

M.U. and P.C.I.U. conceived and designed the study. M.U., S.O.A., I.E.N., R.N.O., and I.O.N. conducted the literature searches and supervised data collection. M.U., C.A.N., and S.O.A. undertook the data analysis and wrote the initial draft. All authors reviewed and approved the final draft of the manuscript.

Availability of data and materials

The data sets generated and analyzed during this study are available from the corresponding author on reasonable request.

Declaration of Conflicting Interests

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ORCID iDs

MaryJoy Umore [https://orcid.org/0000-0002-8697-8514]
Chioma Adaora Nwalieji [https://orcid.org/0000-0003-2124-6088]
Samson Oladuwa Aghaje [https://orcid.org/0000-0003-4332-3451]
Ignatius O. Nwimo [https://orcid.org/0000-0002-5998-8282]

Supplemental Material

Supplemental material for this article is available online.

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