

ASSESSMENT OF KNOWLEDGE OF LASSA FEVER AMONG SECONDARY SCHOOL STUDENTS IN AWGU LOCAL GOVERNMENT AREA, ENUGU STATE

Cylia N. Iweama,¹ Olive O. Ilo² & Mohammed Adamu³

Department of Human Kinetics and Health Education, University of Nigeria, Nsukka

Department of Physical and Health Education, Federal College of Education, Yola

Abstract

The study investigated knowledge of Lassa fever among secondary school students in Awgu LGA, Enugu State. Four specific objectives with four corresponding research questions and three null hypotheses guided the study. The study adopted cross-sectional survey research design. The population for the study consisted of 5,295 secondary school students in the 27 secondary schools in the study location. The sample size for the study consisted of 400 students. The multi-stage sampling procedure was used to select the sample for the study. The instrument for data collection was a researcher-designed instrument known as “Knowledge of Lassa Fever Questionnaire” (KLFAQ). The face validity of the instrument was established by five experts. Split-half method was used to separate the returned copies of the questionnaire into even and odd numbers and Spearman-Brown correlation coefficient was used to determine the internal consistency of the instrument. The internal consistencies obtained for knowledge was 0.79. Frequency and percentages were used to answer research questions while Chi-square (χ^2) statistics was used to test the null hypotheses at .05 level of significance. Results showed that more than two-thirds of secondary school students in Awgu LGA, possessed knowledge (76.6%) of Lassa fever. Additionally, there were no significant differences in the proportion of secondary school students that possessed knowledge of Lassa fever based on age ($\chi^2=0.685$, $p=0.71$), gender ($\chi^2=3.667$, $p=0.06$), class level ($\chi^2=0.214$, $p=0.64$). The study recommended among others that, public health educators should intensify Lassa fever awareness programmes in secondary schools through culturally sensitive and age-appropriate health education strategies which include peer-led initiatives, school health clubs, and drama or radio jingles.

Keywords: Lassa fever, knowledge, secondary school students, Enugu State

Introduction

Lassa fever remains a major public health concern in West Africa because of its endemic nature, epidemic potential, zoonotic transmission, and associated morbidity and mortality. The disease is caused by the Lassa virus and is primarily transmitted to humans through contact with food, household materials, or surfaces contaminated with the urine or faces of infected multimammate rats (*Mastomys* species). Human-to-human transmission can also occur through contact with the blood, urine, faces, and other body fluids of infected persons, particularly in healthcare settings where infection prevention and control measures are inadequate (World Health Organization [WHO], 2023). Although Lassa fever is preventable through improved environmental sanitation, rodent control, safe food storage, personal hygiene, early recognition of symptoms, and prompt medical attention, continued transmission indicates that knowledge and preventive practices remain important components of disease control.

Lassa fever is endemic in several West African countries, including Nigeria, Sierra Leone, Liberia, Guinea, Benin, Ghana, and Togo. Nigeria bears a substantial proportion of the regional burden and continues to report cases across several states. The Nigeria Centre for Disease Control and Prevention (NCDC, 2025) reported that by epidemiological week

9 of 2025, Nigeria had recorded 2,728 suspected cases, 535 confirmed cases, and 98 deaths across 14 states, representing a case-fatality rate of 18.3%. The persistence of cases across different parts of the country demonstrates that Lassa fever is not only an outbreak-related problem but a continuing public health threat requiring sustained surveillance, health education, community participation, and preventive interventions. The WHO (2023) has also emphasized the importance of strengthening public awareness, surveillance, laboratory diagnosis, infection prevention, and access to appropriate treatment in reducing the impact of the disease.

The situation is particularly relevant to southeastern Nigeria, where cases of Lassa fever have been reported and where environmental and social conditions may facilitate transmission. Enugu State has experienced confirmed cases of the disease, making awareness and preventive education important among its residents. Recent Nigerian studies have shown that although awareness of Lassa fever may be relatively high in some communities, important gaps remain in people's understanding of its symptoms, transmission, risk factors, and preventive measures. Ben-Enukora et al. (2022), for example, found that residents in highly affected Nigerian states had varying levels of knowledge concerning Lassa fever, with healthcare workers, radio, television, and family members serving as important sources of information. Similarly, Aromolaran et al. (2023) reported that awareness of Lassa fever among rural residents did not always translate into adequate knowledge and appropriate preventive practices. These findings suggest that exposure to information alone may not be sufficient and that health education must provide accurate, comprehensive, and practical knowledge.

Knowledge plays an important role in disease prevention because it can influence how individuals perceive health risks and respond to them. A person who understands the causes, mode of transmission, symptoms, and preventive measures of Lassa fever is more likely to recognize risky behaviours and adopt appropriate protective practices. Evidence from Nigeria indicates that knowledge of Lassa fever varies across different population groups. Umoke et al. (2021), in a study among undergraduate students in Ebonyi State, reported generally good knowledge of Lassa fever, particularly concerning its transmission and prevention, although gaps existed in knowledge of signs and symptoms. In another study involving university students in Enugu State, Bosah and Jones (2023) examined knowledge of Lassa fever prevention and highlighted the importance of health education among young people. These findings indicate that educational institutions can serve as important platforms for strengthening knowledge and preventive behaviours among students.

Secondary schools are particularly important settings for health education because adolescents are at a stage of development in which they acquire knowledge, attitudes, and behaviours that may influence their health throughout life. Students interact with teachers, peers, family members, health professionals, traditional sources of information, and mass media, all of which can influence their understanding of diseases. Schools can therefore provide an effective environment for communicating accurate information about Lassa fever, including its causes, transmission, symptoms, prevention, and appropriate health-seeking behaviour. Enemuoh and Obayi (2023), in their study among secondary school teachers in Enugu East Local Government Area, identified knowledge gaps concerning Lassa fever and its preventive measures. This finding is important because teachers are among the key persons expected to provide health-related information and guidance to students. Strengthening knowledge among both teachers and students could therefore improve school-based health promotion and community disease prevention.

International and African evidence also demonstrates the importance of knowledge and risk communication in controlling Lassa fever and other infectious diseases. The WHO (2023) has continued to emphasize community engagement, risk communication, surveillance, and early detection as important components of Lassa fever control. In affected African communities, environmental sanitation, rodent infestation, unsafe food storage, overcrowding, and limited access to accurate health information may increase exposure to infection. Consequently, preventive interventions need to go beyond clinical management to address the social and behavioural factors that contribute to transmission. Effective health education should enable individuals to recognize potential sources of infection, understand appropriate environmental and personal hygiene practices, and seek medical care promptly when symptoms occur. Recent studies have also shown that sources of health information influence people's knowledge of Lassa fever. Ben-Enukora et al. (2022) found that radio, television, healthcare workers, and interpersonal communication played important roles in disseminating Lassa fever information in Nigeria. The increasing use of digital and social media also provides opportunities for reaching young people with health information. However, information obtained from informal or unverified sources may sometimes be inaccurate or incomplete. Secondary school students may therefore benefit from structured school-based health education delivered by trained teachers and health professionals. Such education can complement information obtained from mass media and help students distinguish accurate health information from misconceptions.

Notwithstanding the increasing number of studies on Lassa fever knowledge in Nigeria, a gap remains in evidence concerning secondary school students in particular communities. Previous studies have focused on rural residents, university students, teachers, healthcare-related populations, and members of affected communities. While these studies provide useful evidence, their findings cannot automatically be generalised to secondary school students because knowledge may vary according to age, gender, educational level, access to information, and local environmental conditions. Furthermore, there is limited empirical evidence specifically addressing the knowledge of Lassa fever among secondary school students in Awgu Local Government Area of Enugu State. This represents an important contextual gap because understanding students' existing level of knowledge is necessary for designing appropriate school-based health education and disease-prevention interventions.

The knowledge of Lassa fever among secondary school students may also differ according to selected socio-demographic characteristics such as age, gender, and class level. Older students may have greater exposure to health information through formal education and mass media, while students in higher classes may have encountered more health-related subjects and discussions. Gender may also be associated with differences in exposure to health information and health-related behaviours. However, these relationships should be established empirically rather than assumed. Examining such characteristics can help determine whether health education interventions should be general or specifically targeted toward particular groups of students. The current state of Lassa fever prevention therefore emphasizes an integrated approach involving surveillance, early diagnosis, treatment, environmental sanitation, rodent control, infection prevention, community participation, and effective risk communication. Within this approach, schools provide an important opportunity for early and sustained health education. Equipping students with accurate knowledge about Lassa fever may help them recognise risk factors, avoid unsafe practices, maintain proper hygiene, improve environmental sanitation, and encourage appropriate health-seeking behaviour. Students

may also transfer the information acquired at school to their parents, siblings, and other members of their communities, thereby extending the benefits of school-based health education beyond the school environment.

Therefore, assessing the knowledge of Lassa fever among secondary school students in Awgu Local Government Area, Enugu State, is important for generating evidence that can guide health education and prevention programmes. The findings could assist teachers, school administrators, health educators, parents, public health practitioners, and relevant government agencies in identifying existing knowledge gaps and developing appropriate interventions. The study is consequently designed to assess the knowledge of Lassa fever among secondary school students in Awgu Local Government Area, Enugu State, with a view to providing evidence that can support effective health education, strengthen preventive practices, and contribute to the reduction of Lassa fever transmission within schools and the wider community.

Statement of the Problem

The effectiveness of Lassa fever prevention among secondary school students depends largely on their ability to obtain, understand, and apply accurate health information. Ideally, students should demonstrate sufficient knowledge of Lassa fever and be able to identify its major risk factors, recognise common symptoms, understand how transmission occurs, and apply appropriate preventive measures in their daily activities. Schools should also provide students with adequate health information that enables them to protect themselves and contribute to disease prevention within their families and communities. However, the situation may not correspond with this expectation. Some students may have incomplete or inaccurate information about Lassa fever, particularly regarding its mode of transmission, early symptoms, sources of infection, and appropriate preventive measures. Differences in access to health information, exposure to health education, age, gender, and class level may further contribute to variations in students' knowledge. Where such gaps exist, students may find it difficult to recognise risky situations or make appropriate decisions concerning prevention and health-seeking behaviour. Although health education is expected to equip students with knowledge necessary for protecting their health, there is insufficient empirical evidence establishing the level of knowledge of Lassa fever among secondary school students in Awgu Local Government Area, Enugu State. The absence of such local evidence makes it difficult to determine the specific areas of knowledge that require attention and to develop interventions that are appropriate for the students. Hence, the problem of this study, therefore, is the uncertain level of knowledge of Lassa fever among secondary school students in Awgu Local Government Area, Enugu State, particularly with respect to their understanding of the disease and its prevention. This gap in knowledge needs to be empirically established to provide evidence for strengthening school-based health education and preventive measures.

Purpose of the Study

The study examined knowledge of Lassa fever among secondary school students in Awgu Local Government Area, Enugu State. Specifically, this study sought to determine the:

1. proportion of secondary school students that possessed knowledge of Lassa fever in Awgu LGA, Enugu State;
2. proportion of secondary school students that possessed knowledge of Lassa fever based on age;

3. proportion of secondary school students that possessed knowledge of Lassa fever based on gender;
4. proportion of secondary school students that possessed knowledge of Lassa fever based on class level;

Research Questions

The following research questions guided this study:

1. What is the proportion of secondary school students that possessed knowledge of Lassa fever in Awgu LGA, Enugu State?
2. What is the proportion of secondary school students that possessed knowledge of Lassa fever based on age?
3. What is the proportion of secondary school students that possessed knowledge of Lassa fever based on gender?
4. What is the proportion of secondary school students that possessed knowledge of Lassa fever based on class level?

Hypotheses

The following null hypotheses guided the study and were tested at 0.05 level of significance.

- Ho₁:** There is no significant difference in the proportion of secondary school students that possessed knowledge of Lassa fever based on age.
- Ho₂:** There is no significant difference in the proportion of secondary school students that possessed knowledge of Lassa fever based on gender.
- Ho₃:** There is no significant difference in the proportion of secondary school students that possessed knowledge of Lassa fever based on class level.

Methods

Cross-sectional survey research design was employed for this study. The study was conducted in Awgu LGA, Enugu State. The population for the study comprised secondary school students in the 27 secondary schools in the study location. Their population figure was 5,295 (Post-Primary School Management Board, Awgu Education Zone, 2025). The sample for the study consisted of 400 secondary school students. The sample size was computed based on Taro Yarmane's 1967 sample size determination formula. The multi-stage sampling procedure was used to draw the sample size for the study. Stage one involved using the simple random sampling technique of balloting without replacement to select ten secondary schools out of the 27 secondary schools. Stage two involved the use of purposive sampling technique to select JSS 1, JSS 2, SSS 1 and SSS 2 classes in each of the selected schools. JSS 3 and SSS 3 classes were exempted from the study because they are examination classes. This stage provided a total of 40 classes in the sampled secondary schools which was used for the study. Also, stage three involved the use of simple random sampling technique of balloting without replacement to select 10 students from each of the four classes in the ten sampled secondary schools (a total of 40 classes) drawn in stage two. This yielded a total of 400 students that was used for the study. The random selection was conducted using the class registers to ensure adequate representation of both male and female students.

This study utilized a researcher-designed instrument for data collection. The instrument is a 14-item questionnaire titled "Knowledge of Lassa Fever Questionnaire" (KLFQ). The questionnaire was divided into three sections: A and B. Section A contains three socio-demographic variables of age, gender and class level. Section B contains 10 items on knowledge of Lassa fever, with dichotomous response options of "True and

False". The respondents were requested to place a tick (✓) against the option(s) that best describes their knowledge of Lassa fever. The face validity of the instrument was established by giving copies of instrument, the purpose of the study with its specific objectives and research questions as well as hypotheses to five experts in the Department of Human Kinetics and Health Education, University of Nigeria, Nsukka. The research experts critically examined the items of the instrument to ascertain whether the items would elicit appropriate responses from the respondents based on the objectives of the study. Their constructive criticism, corrections and suggestions were used to modify and improve the instrument before it was used for the study. The reliability of the instrument was established by administering 20 copies of the instrument to twenty secondary school students in Nsukka LGA, Enugu State who do not constitute the study population but possess similar characteristics with the study population. Subsequently, Spearman-brown correlation coefficient was used to establish the reliability (internal consistency) of section B. The internal consistencies obtained for sections B was 0.79 hence the instrument was considered reliable to be used for the study. (Cohen et al. 2018).

A letter of introduction was collected from the Head, Department of Human Kinetics and Health Education, University of Nigeria, Nsukka seeking permission to carry out the study. The letter was presented to the principals of the sampled secondary schools who granted the researcher and her assistants access to the class teachers and their students. The researcher and the research assistants visited the selected secondary schools for the study on agreed days. Subsequently, 400 copies of the questionnaire were administered to students in their respective schools during the break periods. The students completed copies of the questionnaire on the spot where possible and return it to the researcher or research assistants. However, those who were unable to return theirs on the spot were required to give the class teachers later for onward collection by the researcher or the research assistants. After retrieval of copies of the instruments, the researcher screened the instruments for completeness of responses. Invalid or improperly filled copies were discarded. The duly filled copies of the instrument were coded into the Statistical Package for Social Sciences (SPSS version 22). Frequency and percentages were used to answer research questions. Percentages ranging from 0 to 44 per cent were interpreted as less than half, 45 to 49 per cent as nearly half, 50 per cent as half, 51 to 69 per cent as more than half, 70 per cent as two-third, 71 to 79 per cent as more than two-third, while 80 per cent and above were interpreted as majority (Nwagu & Agbaje, 2017). Chi-square statistics was used to test the null hypotheses at 0.05 level of significance and at appropriate degrees of freedom.

Results

Research Question One: What is the proportion of secondary school students that possessed knowledge of Lassa fever in Awgu LGA, Enugu State?

Table 1: Percentage Responses on the Proportion of Secondary School Students that Possessed Knowledge of Lassa Fever in Awgu LGA, Enugu State (n=393)

S/N	Lassa Fever Knowledge	Correct f(%)	Incorrect f(%)
1.	Lassa fever is caused by a virus	367(93.4)	26(6.6)
2.	Lassa fever is primarily found in West Africa	285(72.5)	108(27.5)
3.	Eating food contaminated by rat droppings can lead to Lassa fever infection	368(93.6)	25(6.4)

4.	Drinking water contaminated by rat droppings can lead to Lassa fever infection	330(84.0)	63(16.0)
5.	Lassa fever can be transmitted through contact with urine or feces	234(59.5)	159(40.5)
6.	Lassa fever is spread through mosquito bites	216(55.0)	177(45.0)
7.	Symptoms of Lassa fever include fever, headache and vomiting	317(80.7)	76(19.3)
8.	Lassa fever can be prevented by avoiding contact with rats	299(76.1)	94(23.9)
9.	There is no cure for Lassa fever	262(66.7)	131(33.3)
10.	Lassa fever can be treated with antiviral medications if detected early	345(87.8)	48(12.2)

Average Score**76.6****23.4**

Key: 0–44%=less than half; 45–49%=nearly half; 50%=half; 51–69%=more than half; 70%=two-third; 71–79%=more than two-third; and 80% & above=Majority.

Results in Table 1 show that overall, more than two-third (76.6%) of secondary school students possessed knowledge of Lassa fever. Specifically, majority maintained that eating food contaminated by rat droppings can lead to Lassa fever infection (93.6%), Lassa fever is caused by a virus (93.4%), Lassa fever can be treated with antiviral medications if detected early (87.8%), and that symptoms of Lassa fever include fever, headache and vomiting (80.7%).

Research Question Two: What is the proportion of secondary school students that possessed knowledge of Lassa fever in Awgu LGA, Enugu State based on age?

Table 2: Percentage Responses on the Proportion of Secondary School Students that Possessed Knowledge of Lassa Fever in Awgu LGA, Enugu State Based on Age (n=393)

S/N	Lassa Fever Knowledge	10–12 yrs (n=35)	13–15 yrs (n=211)	16 yrs + (n=147)
		Correct f(%)	Correct f(%)	Correct f(%)
1.	Lassa fever is caused by a virus	34(97.1)	198(93.8)	135(91.8)
2.	Lassa fever is primarily found in West Africa	20(57.1)	153(72.5)	112(76.2)
3.	Eating food contaminated by rat droppings can lead to Lassa fever infection	31(88.6)	200(94.8)	137(93.2)
4.	Drinking water contaminated by rat droppings can lead to Lassa fever infection	27(77.1)	174(82.5)	129(87.8)
5.	Lassa fever can be transmitted through contact with urine or feces	20(57.1)	136(64.5)	78(53.1)
6.	Lassa fever is spread through mosquito bites	16(45.7)	104(49.3)	96(65.3)
7.	Symptoms of Lassa fever include fever, headache and vomiting	30(85.7)	167(79.1)	120(81.6)
8.	Lassa fever can be prevented by avoiding contact with rats	21(60.0)	149(70.6)	129(87.8)
9.	There is no cure for Lassa fever	20(57.1)	147(69.7)	95(64.6)
10.	Lassa fever can be treated with antiviral medications if detected early	29(82.9)	186(88.2)	130(88.4)
Average Mean Percentage		71.4	77.7	76.2

Key: 0–44%=less than half; 45–49%=nearly half; 50%=half; 51–69%=more than half; 70%=two-third; 71–79%=more than two-third; and 80% & above=Majority.

Results in Table 2 show that overall, more than two-third of secondary school students possessed knowledge of Lassa fever irrespective of age (10–12 years = 71.4%; 13–15 years = 77.7%, 16 years + = 76.2%).

Research Question Three: What is the proportion of secondary school students that possessed knowledge of Lassa fever based on gender?

Table 3: Percentage Responses on the Proportion of Secondary School Students that Possessed Knowledge of Lassa Fever in Awgu LGA, Enugu State Based on Gender (n=393)

S/N	Lassa Fever Knowledge	Male (n=171) Correct f(%)	Female (n=222) Correct f(%)
1.	Lassa fever is caused by a virus	155(90.6)	212(95.5)
2.	Lassa fever is primarily found in West Africa	114(66.7)	171(77.0)
3.	Eating food contaminated by rat droppings can lead to Lassa fever infection	156(91.2)	212(95.5)
4.	Drinking water contaminated by rat droppings can lead to Lassa fever infection	136(79.5)	194(87.4)
5.	Lassa fever can be transmitted through contact with urine or feces	117(68.4)	117(52.7)
6.	Lassa fever is spread through mosquito bites	98(57.3)	118(53.2)
7.	Symptoms of Lassa fever include fever, headache and vomiting	138(80.7)	179(80.6)
8.	Lassa fever can be prevented by avoiding contact with rats	126(73.7)	173(77.9)
9.	There is no cure for Lassa fever	115(67.3)	147(66.2)
10.	Lassa fever can be treated with antiviral medications if detected early	142(83.0)	203(91.4)
Average Mean Percentage		71.9	80.2

Key: 0–44%=less than half; 45–49%=nearly half; 50%=half; 51–69%=more than half; 70%=two-third; 71–79%=more than two-third; and 80% & above=Majority.

Results in Table 3 show that overall, more than two-third (71.9%) of male and majority (80.2%) of female secondary school students possessed knowledge of Lassa fever.

Research Question Four: What is the proportion of secondary school students that possessed knowledge of Lassa fever in Awgu LGA, Enugu State based on class level?

Table 4: Percentage Responses on the Proportion of Secondary School Students that Possessed Knowledge of Lassa Fever in Awgu LGA, Enugu State Based on Class Level (n=393)

S/N	Lassa Fever Knowledge	JSS 1–2 (n=243) Correct f(%)	SSS 1–2 (n=150) Correct f(%)
1.	Lassa fever is caused by a virus	233(95.9)	134(89.3)
2.	Lassa fever is primarily found in West Africa	160(65.8)	125(83.3)

3.	Eating food contaminated by rat droppings can lead to Lassa fever infection	224(92.2)	144(96.0)
4.	Drinking water contaminated by rat droppings can lead to Lassa fever infection	195(80.2)	135(90.0)
5.	Lassa fever can be transmitted through contact with urine or feces	154(63.4)	80(53.3)
6.	Lassa fever is spread through mosquito bites	108(44.4)	108(72.0)
7.	Symptoms of Lassa fever include fever, headache and vomiting	194(79.8)	123(82.0)
8.	Lassa fever can be prevented by avoiding contact with rats	171(70.4)	128(85.3)
9.	There is no cure for Lassa fever	154(63.4)	108(72.0)
10.	Lassa fever can be treated with antiviral medications if detected early	212(87.2)	133(88.7)
Average Mean Percentage		77.4	75.3

Key: 0–44%=less than half; 45–49%=nearly half; 50%=half; 51–69%=more than half; 70%=two-third; 71–79%=more than two-third; and 80% & above=Majority.

Results in Table 4 show that overall, more than two-third of secondary school students possessed knowledge of Lassa fever irrespective of class level (JSS 1–2 = 77.4%; SSS 1–2 = 75.3%).

Hypothesis One

There is no significant difference in the proportion of secondary school students that possessed knowledge of Lassa fever in Awgu LGA, Enugu State based on age.

Table 5: Summary of Chi-square Test of No Significant Difference in the Proportion of Secondary School Students that Possessed Knowledge of Lassa Fever in Awgu LGA, Enugu State Based on Age (n=393)

Variable	N	Correct O(E)	Incorrect O(E)	χ^2	df	p-value
Age						
10 – 12 years	35	25 (26.8)	10 (8.2)	0.685	2	0.71
13 – 15 years	211	164 (161.6)	47 (49.4)			
16 years +	147	112 (112.6)	35 (34.4)			

* Significant at $p \leq 0.05$

Key: O = Observed frequencies; E = Expected frequencies

Results in Table 5 show that there is no significant difference in the proportion of secondary school students that possessed knowledge of Lassa fever based on age ($\chi^2 = 0.685$, $p = 0.71$). Since the p-value of 0.71 is greater than 0.05 level of significance, the null hypothesis was not rejected. This implies that secondary school students did not differ in their knowledge of Lassa fever based on age.

Hypothesis Two

There is no significant difference in the proportion of secondary school students that possessed knowledge of Lassa fever in Awgu LGA, Enugu State based on gender.

Table 6: Summary of Chi-square Test of No Significant Difference in the Proportion of Secondary School Students that Possessed Knowledge of Lassa Fever in Awgu LGA, Enugu State Based on Gender (n=393)

Variable	N	Correct	Incorrect	χ^2	df	p-value
----------	---	---------	-----------	----------	----	---------

		O(E)	O(E)			
Gender						
Male	171	123 (131.0)	48 (40.0)	3.667	1	0.06
Female	222	178 (170.0)	44 (52.0)			

* Significant at $p \leq 0.05$

Key: O = Observed frequencies; E = Expected frequencies

Results in Table 6 show that there is no significant difference in the proportion of secondary school students that possessed knowledge of Lassa fever based on gender ($\chi^2 = 3.667$, $p = 0.06$). Since the p-value of 0.06 is greater than 0.05 level of significance, the null hypothesis was not rejected. This implies that secondary school students did not differ in their knowledge of Lassa fever based on gender.

Hypothesis Three

There is no significant difference in the proportion of secondary school students that possessed knowledge of Lassa fever in Awgu LGA, Enugu State based on class level.

Table 7: Summary of Chi-square Test of No Significant Difference in the Proportion of Secondary School Students that Possessed Knowledge of Lassa Fever in Awgu LGA, Enugu State Based on Class Level (n=393)

Variable	N	Correct O(E)	Incorrect O(E)	χ^2	df	p-value
Class Level						
JSS 1 – 2	243	188 (186.1)	55 (56.9)	0.214	1	0.64
SSS 1 – 2	150	113 (114.9)	37 (35.1)			

* Significant at $p \leq 0.05$

Key: O = Observed frequencies; E = Expected frequencies

Results in Table 7 show that, among students in JSS 1–2, 188 students had correct knowledge of Lassa fever compared with an expected frequency of 186.1, while 55 students had incorrect knowledge compared with an expected frequency of 56.9. Among students in SSS 1–2, 113 students had correct knowledge compared with an expected frequency of 114.9, while 37 students had incorrect knowledge compared with an expected frequency of 35.1. The chi-square test yielded a value of 0.214 with 1 degree of freedom and a p-value of 0.64. Since the p-value of 0.64 is greater than the 0.05 level of significance, the null hypothesis is not rejected. This indicates that there is no significant difference in the proportion of secondary school students who possessed knowledge of Lassa fever based on class level in Awgu Local Government Area, Enugu State. Therefore, class level did not significantly influence the students' knowledge of Lassa fever.

Discussions

The findings of this study revealed that more than two-thirds (76.6%) of secondary school students in Awgu Local Government Area possessed knowledge of Lassa fever. This finding indicates that a substantial proportion of the students had a reasonable understanding of the disease. Specifically, the majority of the students correctly identified Lassa fever as a viral disease (93.4%), recognised that eating food contaminated by rat

droppings could result in infection (93.6%), knew that the disease could be treated with antiviral medication when detected early (87.8%), and recognised fever, headache and vomiting as symptoms of Lassa fever (80.7%). The finding suggests that the students had particularly strong knowledge of the basic cause, some major routes of exposure, symptoms, and availability of treatment. This may be attributed to the increasing dissemination of Lassa fever information through schools, health workers, radio, television and other information channels. This finding is consistent with Umoke et al. (2021), who reported generally good knowledge of Lassa fever among undergraduate students in Ebonyi State, particularly regarding its transmission and prevention. It is also in agreement with Ben-Enukora et al. (2022), who found relatively good knowledge of Lassa fever among residents of highly affected Nigerian states.

However, the finding also revealed important areas of inadequate knowledge among the students. Only 59.5% correctly recognised that Lassa fever could be transmitted through contact with urine or faeces, while 55.0% correctly responded to the item concerning mosquito bites. Similarly, only 66.7% correctly indicated that there is no cure for Lassa fever, while 76.1% knew that avoiding contact with rats could help prevent infection. These findings suggest that although the overall level of knowledge was relatively high, some specific misconceptions and knowledge deficiencies remain. The relatively low proportion of students who correctly understood transmission through urine or faeces is of concern because contact with contaminated materials is an important route of Lassa virus transmission. The finding agrees with evidence from Nigerian studies indicating that knowledge of specific transmission routes and symptoms may remain inadequate even where general awareness of Lassa fever is high. Ben-Enukora et al. (2022), for instance, reported gaps in particular aspects of Lassa fever knowledge among residents of affected Nigerian states. Similarly, Umoke et al. (2021) observed that although students demonstrated good general knowledge, weaknesses existed in their knowledge of some signs and symptoms. The present finding therefore suggests that general awareness may not necessarily translate into comprehensive knowledge of all important aspects of Lassa fever.

The finding that more than two-thirds of students possessed knowledge of Lassa fever across all age groups is noteworthy. Students aged 10–12 years recorded 71.4% knowledge, those aged 13–15 years recorded 77.7%, while those aged 16 years and above recorded 76.2%. Although the 13–15-year age group had the highest proportion, the differences were relatively small. The chi-square analysis further showed that there was no significant difference in knowledge based on age ($\chi^2 = 0.685$, $p = .71$). The null hypothesis was therefore not rejected. This finding implies that age did not significantly influence the students' knowledge of Lassa fever in the study area. The result may be explained by the fact that students across the different age groups are exposed to similar sources of health information within the school and community. School health education, mass media, family communication, and community awareness activities may provide students of different ages with relatively similar information. The finding differs somewhat from studies suggesting that age can influence exposure to and understanding of health information. However, the present result demonstrates that such an association cannot be assumed across all populations and settings. In Awgu LGA, the relatively similar levels of knowledge across the age categories suggest that Lassa fever information may be reaching students irrespective of age.

With respect to gender, the findings showed that more than two-thirds (71.9%) of male students and a majority (80.2%) of female students possessed knowledge of Lassa

fever. Although female students recorded a higher proportion of knowledge than male students, the chi-square test showed that the difference was not statistically significant ($\chi^2 = 3.667$, $p = .06$). The null hypothesis was therefore not rejected. This means that gender did not significantly influence the students' knowledge of Lassa fever. The slightly higher proportion observed among female students may indicate greater exposure to or interest in health-related information, but the statistical result shows that the difference was not sufficiently large to establish a meaningful association in this study. This finding is important because it indicates that health education interventions in the study area should be directed toward both male and female students rather than being designed exclusively for one gender. The finding is consistent with the broader evidence that access to appropriate health information can influence knowledge across population groups and that differences based on gender may vary according to the context and population studied (Ben-Enukora et al., 2022).

The findings based on class level revealed that more than two-thirds of students possessed knowledge of Lassa fever in both JSS 1–2 (77.4%) and SSS 1–2 (75.3%). Although students in JSS 1–2 recorded a slightly higher proportion than those in SSS 1–2, the difference was not statistically significant ($\chi^2 = 0.214$, $p = .64$). Consequently, the null hypothesis was not rejected. This indicates that class level did not significantly influence knowledge of Lassa fever among the students. The finding is particularly interesting because students in higher classes might ordinarily be expected to demonstrate greater knowledge because of their increased educational exposure. However, the relatively similar knowledge levels observed across the two class groups may indicate that information about Lassa fever is obtained from sources outside formal classroom instruction, including television, radio, healthcare workers, family members, and other media. Ben-Enukora et al. (2022) identified several of these channels as important sources of Lassa fever information. Thus, students in different classes may have comparable opportunities to acquire knowledge about the disease.

The overall findings of the study suggest that secondary school students in Awgu LGA possess a relatively satisfactory level of knowledge of Lassa fever, but their knowledge is not comprehensive. The high level of knowledge regarding the viral cause of the disease, contamination of food by rodent droppings, symptoms, and early treatment is encouraging. However, the weaker knowledge demonstrated regarding transmission through urine or faeces, mosquito bites, cure, and some preventive measures indicates the presence of specific misconceptions that require attention. This observation is consistent with the findings of Aromolaran et al. (2023), who noted that awareness of Lassa fever does not necessarily translate into complete knowledge or appropriate preventive practices among rural residents. It therefore becomes important for health education programmes to move beyond simply informing students that Lassa fever exists and instead provide clear and practical information about all major aspects of the disease. The absence of significant differences based on age, gender, and class level further suggests that Lassa fever health education should be implemented broadly across secondary school students in Awgu LGA. Rather than concentrating interventions on a particular age group, gender, or class, schools and health educators should provide comprehensive information to all students while giving particular attention to the specific areas where knowledge gaps were identified. Such interventions should emphasise the actual routes of transmission, the role of rodents in transmission, safe food and water practices, environmental sanitation, early recognition of symptoms, and the importance of seeking medical care promptly. This

approach is supported by the evidence that effective risk communication remains an important component of Lassa fever prevention and control (Ben-Enukora et al., 2022).

Generally, the findings indicate that the students have a relatively good foundation of knowledge about Lassa fever, but important gaps remain that could affect their ability to prevent infection effectively. The fact that knowledge did not differ significantly according to age, gender, or class level suggests that the identified knowledge deficiencies are not restricted to a particular subgroup of students. Consequently, school-based health education should adopt an inclusive approach that reaches all students and uses clear, age-appropriate, and practical messages. Strengthening health education in schools, supported by healthcare professionals, teachers, parents, and reliable media sources, could help correct misconceptions and improve students' capacity to participate actively in the prevention and control of Lassa fever within their schools, homes, and communities.

Educational Implications of the Study

The study indicates that secondary school students in Awgu LGA possess a relatively good level of knowledge of Lassa fever. However, gaps in specific areas of transmission and prevention suggest the need for strengthened school-based health education. Teachers and health educators should provide accurate, practical, and continuous information on Lassa fever to promote appropriate preventive practices among students.

Contribution to Knowledge

This study contributes to knowledge by providing empirical evidence on the level of knowledge of Lassa fever among secondary school students in Awgu Local Government Area, Enugu State. The study established that 76.6% of the students possessed knowledge of Lassa fever, indicating a relatively satisfactory level of knowledge. However, specific gaps were identified in areas such as transmission through urine or faeces and misconceptions concerning mosquito transmission. The study further established that students' knowledge did not differ significantly based on age, gender, or class level. These findings provide useful baseline information for teachers, health educators, school administrators, and public health practitioners in developing targeted school-based interventions for Lassa fever prevention.

Conclusion

Based on the findings of the study, it was concluded that more than two-thirds (76.6%) of secondary school students in Awgu Local Government Area possessed knowledge of Lassa fever. The students demonstrated particularly good knowledge of the viral cause of Lassa fever, infection through food contaminated by rat droppings, symptoms of the disease, and the availability of antiviral treatment when detected early. However, some gaps were observed in their knowledge of certain transmission routes and preventive measures. The study also established that there was no significant difference in students' knowledge of Lassa fever based on age, gender, or class level. Therefore, although the general level of knowledge was satisfactory, continuous and comprehensive health education remains necessary to address specific knowledge gaps and strengthen Lassa fever prevention among secondary school students.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Secondary schools should strengthen health education programmes by providing students with accurate and comprehensive information on the causes, transmission, symptoms, treatment, and prevention of Lassa fever.

2. Teachers should place greater emphasis on correcting misconceptions about Lassa fever, particularly those relating to its modes of transmission and the role of rodents in spreading the disease.
3. School authorities should organise periodic Lassa fever awareness programmes in collaboration with health professionals to reinforce students' knowledge and preventive practices.
4. The government and relevant health agencies should provide schools with appropriate educational materials on Lassa fever for use by teachers and students.
5. Health education programmes on Lassa fever should be provided to all students irrespective of age, gender, or class level, since the study found no significant difference in knowledge based on these characteristics.
6. Parents and teachers should encourage students to practise proper environmental sanitation, safe food storage, rodent control, and appropriate health-seeking behaviour as part of Lassa fever prevention.

REFERENCES

- Agu, B. N., Agbaje, O. S., & Nnamdi, O. C. (2020). Knowledge of effects of maternal nutrition on birth outcomes among pregnant women attending antenatal care services in Owerri Municipal LGA, Imo State. *Nigerian Journal of Health Promotion*, 13, 113–122.
- Ajibade, B. O. (2019). Knowledge and certificate-based system: A critical analysis of Nigeria's educational system. *Global Journal of Human-Social Science: Linguistics & Education*, 19(8), 121–133.
- Akunne, M. O., Isah, A., Anene-Okeke, C. G., & Oguejiofor, F. A. (2018). Assessment of knowledge of Lassa fever infection among the undergraduate students of University of Nigeria, Nsukka, Enugu State, Nigeria. *International Research Journal of Pharmacy and Medical Sciences (IRJPMS)*, 1(6), 6–9. <https://doi.org/10.5281/zenodo.2538556>
- Aromolaran, O., Samson, T. K., & Falodun, O. I. (2023). Knowledge and practices associated with Lassa fever in rural Nigeria: Implications for prevention and control. *Journal of Public Health in Africa*, 14(9), 2001. <https://doi.org/10.4081/jphia.2023.2001>
- Centers for Disease Control and Prevention. (2022). *Lassa fever*. Retrieved from <https://www.cdc.gov/vhf/lassa/index.html>
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research methods in education* (8th ed.). London, England: Routledge.
- Denwigwe, C. P., & Ngwu, M. E. (2022). Personal variables and attitude of youths to Lassa fever preventive practices in Bwari Area Council, Abuja, Nigeria: Counselling implications. *Global Journal of Educational Research*, 21(1), 17–25. <https://doi.org/10.4314/gjedr.v21i1.3>
- Egenti, N. B., Adelaiye, R. S., Sani, I. M., & Adogu, P. O. U. (2019). Knowledge, attitude and preventive measures regarding Lassa fever among residents of University of Abuja Staff Quarters, Giri, Gwagwalada, Abuja. *American Journal of Medicine and Medical Sciences*, 9(3), 90–95. <https://doi.org/10.5923/j.ajmms.20190903.05>
- Ekanem, A. M., Ekwere, T. A., Akwaowo, C. D., Akpanekpo, E. I., Mbaba, E. M., Anietie, M. H., & Akwaowo, U. S. (2018). Knowledge and prevention of Lassa fever among adults in a rural community in Southern Nigeria. *Saudi Journal of Medicine*, 3(7), 393–399.

- Enugu State Ministry of Health. (2020, February 1). Enugu confirms second death. *ThisDay*. Retrieved from <https://www.thisdaylive.com/index.php/2020/02/01/lassa-fever-enugu-confirms-second-death/>
- Gonzales, S. G. (2020). *Lassa fever*. World Health Organization.
- Ighedosa, S. U., Odigie, A. E., Usifoh, S. F., Asemota, O., Asemota, D. O., & Aighewi, I. T. (2016). Knowledge, attitude and practice of Lassa fever prevention by students of the University of Benin. *Journal of Science and Practice of Pharmacy*, 3(1), 75–83.
- Ikwueze, I. A. (2023). Influence of media campaigns on the level of attitude and practice of Lassa fever risk factors, prevention and treatment behaviour of Enugu State residents. *Interdisciplinary Journal of Linguistics, Marketing and Communication*, 10(3), 102–116. <https://doi.org/10.5281/zenodo.8362626>
- Leaticia, I., Cic, E., Sno, I., Og, U., & Wu, D. (2023). Socio-economic factors influencing knowledge and practice of Lassa fever prevention among residents of Owerri-North L.G.A., Imo State. *International Journal of Advanced Multidisciplinary Research and Studies*, 3(2), 1134–1140. Retrieved from <https://www.multiresearchjournal.com/admin/uploads/archives/archive-1682790540.pdf>
- Masino, S., & Niño-Zarazúa, N. (2016). What works to improve the quality of student learning in developing countries? *International Journal of Educational Development*, 48, 53–65.
- Nigeria Centre for Disease Control and Prevention. (2020). *An update of Lassa fever outbreak in Nigeria for week 33*. Retrieved from <https://ncdc.gov.ng/diseases/sitreps/?cat=5&name=An%20update%20of%20Lassa%20fever%20outbreak%20in%20Nigeria>
- Nigeria Centre for Disease Control and Prevention. (2024). *An update of Lassa fever situation report in Nigeria for week 42, 2024*. Retrieved from <https://ncdc.gov.ng/diseases/sitreps/?cat=5&name=An%20update%20of%20Lassa%20fever%20outbreak%20in%20Nigeria>
- Nwagu, E. N., & Agbaje, O. S. (2017). *Demographic and statistical methods in health, education and the social sciences*. Nsukka, Nigeria: Zion Press.
- Odionye, C. M., Anorue, L. I., & Ekwe, O. (2019). Knowledge, attitude and practice (KAP) analysis of Lassa fever media campaigns among residents of South-East Nigeria. *African Population Studies*, 33(1), 4738–4749. Retrieved from <http://www.bioline.org.br/abstract?id=ep19011>
- Oparah, J. S., Fidelis, N. M., & Nwankwo, C. U. (2019). Knowledge of causes and preventive measures of maternal and infant mortality among mothers in Onuimo Local Government Area, Imo State. *Nigerian Journal of Health Promotion*, 12, 105–112.
- Samruayruen, K., & Kitreerawutiwong, N. (2022). Exploration of the definition and components of food and nutrition literacy among junior secondary school students: A qualitative study. *BMC Nutrition*, 8, 1–10. <https://doi.org/10.1186/s40795-022-00519-6>
- Tobin, E. A., Asogun, D. A., Isah, E. C., Ugege, O. G., & 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.
- Umoke, M. J., Umoke, P. C. I., Nwalieji, C. A., Onwe, R. N., Nwafor, I. E., Agbaje, S. O., & Nwimo, I. O. (2021). Assessment of knowledge and sources of information on

- Lassa fever infection among the undergraduate students of Ebonyi State University, Nigeria. *SAGE Open*, 11(1), 215824402110063. <https://doi.org/10.1177/21582440211006382>
- Uswa, I. S., Akpa, C. O., Umeokonkwo, C. D., Umoke, M., Oguanuo, C. S., Olorukooba, A. A., Bamgboye, E., & Balogun, M. S. (2020). Knowledge and risk perception towards Lassa fever infection among residents of affected communities in Ebonyi State, Nigeria: Implications for risk communication. *BMC Public Health*, 20(1), 217. <https://doi.org/10.1186/s12889-020-8299-3>
- Wild, S., Roglic, G., Green, A., Sicree, R., & King, H. (2014). Global prevalence of diabetes: Estimates for the year 2000 and projections for 2030. *Diabetes Care*, 27(5), 1047–1053.
- World Health Organization. (2017). *Lassa fever*. Retrieved from <https://www.who.int/en/news-room/fact-sheets/detail/lassa-fever>
- World Health Organization. (2019). *Lassa fever research and development (R&D) roadmap*. Retrieved from [https://www.who.int/publications/m/item/lassa-fever-research-and-development-\(r-d\)-roadmap](https://www.who.int/publications/m/item/lassa-fever-research-and-development-(r-d)-roadmap)
- World Health Organization. (2023). *Lassa fever – Nigeria*. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/lassa-fever-nigeria>