

# Assessment of Knowledge of Lassa fever Infection among the Undergraduate Students of University of Nigeria, Nsukka, Enugu State, Nigeria

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## Abstract—

**Background of study:** Lassa fever is an acute viral haemorrhagic disease endemic to several countries in West Africa and first described in Lassa Town in Borno state, Nigeria. The spread of Lassa fever in Nigeria has necessitated the need to study the level of knowledge of her citizens regarding this infection.

**Objective:** To assess the knowledge of Lassa fever among Undergraduates in University of Nigeria Nsukka.

**Method:** This was cross sectional survey conducted in University of Nigeria, Nsukka with students in three faculties (Pharmacy, Medicine and Health Sciences) between July and October, 2016. Self-administered questionnaire was used. Data was analysed using SPSS (Statistical package for social sciences) version 16 and level of statistical significance set at  $p < 0.05$ .

**Result:** The response rate was 83.3%. More than half of the population had poor knowledge of Lassa fever (64.7%). Gender, Faculty and academic level was strongly associated with knowledge of Lassa fever with  $p$ - value 0.013, 0.005, 0.001 respectively.

**Conclusion:** The overall knowledge of Lassa fever infection was poor among the students. This calls for an urgent need to increase knowledge level among students in higher institutions.

**Keywords—** Lassa fever, knowledge, undergraduate students.

## I. INTRODUCTION

Lassa fever is an acute viral haemorrhagic illness caused by Lassa virus, an arena virus, which is endemic to several countries in West Africa and a disease of global health concern. Lassa fever is a zoonotic disease, meaning that humans become infected from contact with infected animals. The animal reservoir, or host, of the Lassa virus is a rodent of the genus *Mastomys*, commonly known as the “multimammate rat” [1]. *Mastomys* infected with Lassa virus do not become ill, but they can spread the virus through their excreta (urine and faeces). The virus can also be spread from person-to-person, either within households during care for sick relatives or in health care settings [2]. The number of Lassa fever virus infections per year is estimated at 100,000 to 300,000 with approximately 5,000 deaths [3-6]. Lassa fever presents at its early stage with symptoms and signs indistinguishable from those of other viral, bacterial or parasitic infections common in the tropics such as malaria, typhoid and other viral haemorrhagic fevers [7]. It also causes general weakness, headache, sore throat, muscle pain, cough, chest pain, nausea, vomiting, diarrhoea, abdominal pain with or without bleeding and may cause deafness which has psychosocial impact on the victim as well as other multisystem complications [8]. Laboratory testing is required for confirmation. If Untreated, Initial flu-like and gastrointestinal symptoms give way to bleeding, organ failure and neurological complications [9]. There have been reported cases of suspected Lassa fever in Nasarawa, Edo, Ondo, Gombe, Taraba, Bauchi, Ebonyi, Anambra, Yobe, Rivers and

Plateau States of Nigeria [8], [10-11]. Outbreaks of Lassa fever in Nigeria are common in rural communities and in hospital settings, fuelled by socio-cultural practices, poor environmental and personal hygiene and poor practice of infection prevention and control [12]. The infection is extremely virulent and like ebola virus, often a fatal infectious disease. Effective teaching of Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) in school includes right attitudes to sex education among [13] and formal training of school teachers with self-efficacy and good school-community relations [14]. This strategy can be employed in the case of Lassa fever to prevent its transmission through education which may result in community behavioural change. To achieve this, there is need to ascertain base-knowledge of students on Lassa fever disease [15]. This study was carried out to assess the knowledge of Lassa fever among Undergraduates in University of Nigeria Nsukka.

## II. MATERIALS AND METHODS

### Study Design

This was a cross-sectional descriptive study carried out to assess the level of knowledge of Lassa fever among University of Nigeria Nsukka undergraduates from July to September, 2016. The study seeks to determine how much the students know of Lassa fever infection, its origin, the signs and symptoms of infection, how it can be transmitted, how it can be treated and most importantly how it can be prevented. Respondents were chosen from three different health related faculties: Pharmaceutical sciences, Medical sciences and Health sciences.

**Study Setting**

University of Nigeria, Nsukka, located about 70km North of Enugu town. It has an area of 505km<sup>2</sup> and it is located in Enugu state in South-Eastern part of Nigeria.

**Sample Size**

The population of students in the three faculties as compiled by the academic planning unit of the university for 2015/2016 session was 1,816 (999 for pharmacy, 639 for health science and 178 for medical science).

**Sample Selection and Technique**

The sample area was randomly drawn from 55.1% of the total student's population, which amounted to 1000 students. Both males and females were included in the study.

**Study Instrument and Data collection**

Self-administered questionnaires were used to obtain data from consenting respondents. The questionnaires captured information on socio-demographic variables and knowledge on Lassa fever.

**Data Analysis**

Data were coded, entered and analysed using SPSS version 16(SPSS, Inc., Chicago, IL, USA). Descriptive statistics such frequency and percentage were used to describe socio-demographics. Chi –square was used to determine the association between socio-demographics and knowledge on Lassa fever.

**Eligibility Criteria**

Inclusion criteria – Students of the selected faculties for the study

Exclusion criteria - Students of other faculties were excluded from the study.

**Ethical Clearance**

Ethical approval was obtained from the University of Nigeria Teaching Hospital Health Research and Ethical Committee and oral consent was obtained from all the respondents and confidentiality was ensured.

**III. RESULTS**

**Demographic Data of the Respondents**

Out of a total of 1000 questionnaires distributed, 833 questionnaires were completed and returned, giving a response rate of 83.3%. Most of the respondents were 21to 25 years of age (56.4%), were male (60.9%), were in 500 level (19.3%) and from faculty of Pharmaceutical Sciences (78.6%) [Table1].

TABLE 1. Socio-demographic characteristics of respondents

Variables	Frequency	Percentages (%)
<b>Age</b>		
16-20	258	31.0
21-25	470	56.4
26-35	96	11.5
>35	9	1.1
<b>Gender</b>		
Male	507	60.9
Female	326	39.1
<b>Faculty</b>		

Pharmaceutical Sciences	655	78.6
Health Sciences	76	9.1
Medical Sciences	102	12.2
<b>Level</b>		
100L	279	33.5
200L	135	16.2
300L	116	13.9
400L	142	17.0
500L	161	19.3
<b>Residence</b>		
Quarter in campus	86	10.3
Hostel	448	53.7
Off campus	297	35.7

**Knowledge about Lassa fever**

The study reveals that most of the respondents had poor Knowledge about Lassa fever (67.4%) [Table2].

TABLE 2. Knowledge about Lassa fever

Variables	Frequency	Percentage
<b>Level of knowledge about Lassa fever</b>		
Poor Knowledge	539	64.7
Fair knowledge	291	34.9
Excellent knowledge	3	0.4
Total	833	100

Criteria for knowledge score: Poor knowledge - 0-49%, Fair Knowledge- 50-74%, Excellent knowledge above 75%

**The relationship between knowledge about Lassa fever and socio-demographic characteristics**

Table 3 shows the relationship between knowledge about Lassa fever and socio-demographic characteristics' (gender, academic level and faculty) of respondents' and it showed statistically significant p-value <0.05(0.013, 0.005, 0.001 respectively).

TABLE 3. Association between knowledge of Lassa fever and socio-demographic variables

Variables	Level of knowledge				P-value
	poor	Fair	Excellent	Total	
<b>Age</b>					<b>0.227</b>
16-20	173(67.1)	83(32.2)	2(0.8)	258(100.0)	
21-25	304(64.7)	165(35.1)	1(0.2)	470(100.0)	
26-35	54(56.3)	42(43.8)	0(0.0)	96(100.0)	
>35	8(88.9)	1(11.1)	0(0.0)	9(100.0)	
<b>Gender</b>					<b>0.013</b>
Male	310(61.1)	196(38.7)	1(0.2)	507(100.0)	
Female	229(70.7)	95(29.3)	100.0	324(100.0)	
<b>Faculty</b>					<b>0.005</b>
Pharmaceutical Sciences	429(65.5)	224(34.2)	2(3.1)	655(100.0)	
Health Sciences	36(47.4)	40(52.6)	0(0.0)	76(100.0)	
Medical Sciences	74(72.5)	27(26.5)	1(1.0)	102(100.0)	
<b>Level</b>					<b>0.001</b>
100L	179(64.2)	99(35.5)	1(0.4)	279(100.0)	
200L	97(71.9)	37(27.4)	1(0.7)	135(100.0)	
300L	98(84.5)	18(15.5)	0(0.0)	116(100.0)	
400L	80(56.3)	62(43.7)	0(0.0)	142(100.0)	
500L	85(52.8)	75(46.6)	1(0.6)	161(100.0)	
<b>Residence</b>					<b>0.956</b>
Quarter in campus	56(65.1)	30(34.9)	0(0.0)	86(100.0)	
Hostel	294(65.6)	152(33.9)	2(0.4)	448(100.0)	
Off campus	187(63.0)	109(36.7)	1(0.3)	297(100.0)	

## IV. DISCUSSION

The study assessed the knowledge about Lassa fever among undergraduate students in University of Nigeria Nsukka.

The study revealed that majority (78.6%) of the respondents were in the faculty of pharmaceutical sciences, 500 academic level (19.3%), and are males (60.9%). The greater number of male to female respondents is as a result of higher number of males in most of the faculties especially in pharmaceutical sciences. The faculty of pharmaceutical sciences consisted of students from 100 levels to 500 levels while that of medicine and health sciences were only 100 level students. This is due to the fact that respondents of other levels in faculty of medicine and health sciences are at different (Enugu) campus and hence were not included in the study.

Our study showed that 64.7% of the respondents had poor knowledge about Lassa fever. A study carried out by Akinbodewa *et al* [15] among Students of a College of Education in Ondo State reported poor knowledge about Lassa fever. Another study conducted in 2016, revealed that 8% of the target population of one thousand four hundred and ten (1410) residents has knowledge of Lassa fever and its prevention [1]. In contrast, a study carried out in Irrua Specialist Teaching Hospital, Irrua, Edo state among primary care workers reported that 77.9% of the respondents had good knowledge of Lassa fever [16]. The disparity in knowledge is that Lassa fever is not included in students' curriculum while health workers have gained knowledge about Lassa fever through experiences.

The overall knowledge of Lassa fever was categorized into poor knowledge 539 (64.7%), fair knowledge 291 (34.9%) and excellent knowledge 3 (0.4%). This finding is similar to another study carried out by the Department of Community Health, University of Benin Teaching Hospital, Benin City, Edo state among primary care providers in which the overall knowledge of Lassa fever was poor for 51 (38.9%), fair for 54 (41.2%) and good for 260 (19.8%) [17]. This disparity between the number of persons who are aware of the disease and those having in-depth knowledge is common among students, and makes it imperative that the focus should not just be on awareness of the disease, but ensuring that the depth of knowledge is such that the students can effectively disseminate the information to others.

Association between faculty, level of study and gender and the level of knowledge of Lassa fever, was statistically significant ( $P < 0.05$ ), Faculty of pharmaceutical sciences ( $p = 0.005$ ) had the highest proportion of respondents with good knowledge of Lassa fever. This may be due to the fact that the pharmaceutical sciences had highest proportion of respondents because it constituted knowledge from different classes unlike the medical and health sciences that had basically first year students as respondents. From our study, male (0.013) students had more knowledge of Lassa fever than the females, this could be because majority of the respondents were male students

However, there was no statistically significant ( $P > 0.05$ ) association between age and residence and the level of

knowledge of Lassa fever, though between 16-20 years had the highest proportion of those with excellent knowledge while those above 20 years had the highest proportion of those with poor knowledge. Also, those living in the hostel had the highest proportion of those with excellent knowledge while those living in quarters in campus had the least knowledge; this may also be because majority of the respondents were living in the hostel.

*Limitation of the Study*

The study was carried among health inclined undergraduate students of the University of Nigeria Nsukka, thus the result obtained may not be generalised to the whole undergraduate students of UNN. Also during the data collection, the Annex Campus in Enugu city was closed down. This may have contributed to the number of medical students that participated in the study.

## V. CONCLUSION

Our study revealed poor knowledge of Lassa fever among undergraduate students of University of Nigeria with obvious gaps in general knowledge. The overall poor knowledge of Lassa fever calls for an urgent need to increase knowledge level among students in higher institutions. It is therefore essential that the students are adequately informed about the disease, its presentation and prevention, so that they can not only protect themselves, but prevent the spread by enlightening family members, friends and the community at large.

*Conflict of Interest statement*

There is no conflict of interest

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