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Environmental Factors Influencing Public Health Awareness And Infection Prevention Practices Related To Lassa Fever In Kwara State

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Abstract
Lassa fever is a viral hemorrhagic illness endemic in West Africa, posing significant public health challenges due to its high mortality rate and potential for outbreaks. In Kwara State, Nigeria, understanding the demographic factors influencing public health awareness and behaviors surrounding Lassa fever is crucial for designing effective health interventions. This study aims to assess demographic characteristics and the level of awareness regarding Lassa fever among 1,199 respondents, addressing the gap in knowledge about how these factors correlate with attitudes and practices related to the disease. The sample revealed significant gender disparities, with 735 males (61.3%) and 464 females (38.7%), and notable age distribution, where individuals aged 31-45 years represented the largest segment (641 respondents, 17.9%). Government employees were predominant (497 respondents, 13.9%), and the majority were married (741 individuals, 20.7%). The analysis indicated that Christian respondents were the most prevalent (621 individuals, 17.4%), with a majority identifying as Yoruba (1,075 individuals, 30.0%). In the Primary Health Care context, 180 respondents were primarily female (74.4%), with the majority aged 31-45 years. Community health workers represented the largest professional group (182 individuals, 33.7%), and a significant majority were married (382 individuals, 72.1%). Alarmingly, healthcare workers showed inadequate adherence to Infection Prevention and Control (IPC) measures, with only 53.3% of facilities equipped with isolation wards and a severe lack of personal protective equipment (PPE), as evidenced by only 2.8% providing face shields or goggles. Public awareness of Lassa fever was significantly correlated with education level; 33.9% reported awareness of the outbreak, particularly among those with secondary (43 respondents) and tertiary (211 respondents) education. Despite high recognition (91%) of Lassa fever as a severe illness, knowledge about its transmission and prevention remained low, highlighting a critical need for targeted educational interventions. Furthermore, only 9.4% reported engaging in practices that mitigate risk, such as environmental sanitation. The findings underscore the necessity for culturally tailored health programs to improve public health awareness and IPC practices within healthcare facilities in Kwara State.

Key words: *Lassa fever; public health awareness; demographic factors; Infection Prevention and Control (IPC); personal protective equipment (PPE); educational interventions*

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I. Introduction

Lassa fever, a viral hemorrhagic fever endemic to West Africa, has emerged as a significant public health concern due to its high morbidity and mortality rates. The disease, caused by the Lassa virus, is primarily transmitted to humans through contact with the excretions of infected rodents, particularly the multimammate rat (*Mastomys natalensis*) (World Health Organization [WHO], 2023). Given the intricate relationship between environmental factors and the spread of zoonotic diseases like Lassa fever, understanding the socio-demographic dynamics that influence public health awareness and infection prevention practices is crucial for effective disease management and control (Okokhere *et al*., 2022).

In Kwara State, Nigeria, the prevalence of Lassa fever has been exacerbated by factors such as poor sanitation, inadequate health infrastructure, and limited public health education (Nigerian Centre for Disease Control [NCDC], 2023). Despite ongoing efforts to combat the disease, gaps in community awareness and adherence to infection prevention practices persist. This underscores the necessity of examining how environmental and demographic factors interact to shape public perceptions and behaviors regarding Lassa fever (Adebayo *et al.*, 2021).

The rising incidence of Lassa fever in Kwara State highlights a pressing public health crisis characterized by inadequate awareness and poor infection prevention practices among the local population.

Despite the severity of the disease, many individuals remain uninformed about its transmission routes, symptoms, and preventive measures. This lack of awareness is compounded by socio-economic and environmental challenges, including inadequate health services, poor sanitation, and cultural beliefs that may hinder effective public health messaging (Ogunjimi *et al.,* 2022). Consequently, these factors contribute to the ongoing transmission of Lassa fever, necessitating an urgent exploration of the environmental and demographic determinants that influence public health awareness and practices related to this disease.

While numerous studies have documented the clinical aspects and epidemiological patterns of Lassa fever, there is a notable paucity of research focusing on the socio-demographic and environmental factors that affect public health awareness and infection prevention practices in the context of Kwara State. Previous research has often emphasized the biomedical dimensions of the disease, overlooking the critical role that local environmental conditions and community perceptions play in shaping health behaviors (Emmanuel *et al*., 2021). This study seeks to bridge this gap by providing a comprehensive analysis of how environmental factors, combined with demographic characteristics, influence public health awareness and the adoption of effective infection prevention practices related to Lassa fever.

Given the increasing incidence of Lassa fever and its implications for public health in Kwara State, there is an urgent need for a targeted investigation into the factors that influence community awareness and infection prevention practices. Understanding these dynamics is essential for developing culturally appropriate health education programs and intervention strategies aimed at reducing the burden of Lassa fever. By identifying specific environmental and demographic factors that contribute to public health awareness, this study aims to inform policy-making, enhance community engagement, and ultimately improve health outcomes in the region. Furthermore, the findings will provide valuable insights for healthcare practitioners and policymakers in designing effective public health initiatives to combat Lassa fever and similar infectious diseases (Adinma *et al*., 2023).

II. Materials And Methods

Study Area

Kwara State (Yoruba: Ìpínlẹ̀ Kwárà Fula: is a state in Western Nigeria, bordered to the east by Kogi State, to the north by Niger State, and to the south by Ekiti, Osun, and Oyo states while its western border makes up part of the international border with Benin Republic. Kwara capital is the city of Ilorin and the state has 16 local government areas. the Kwara State capital is located on latitude 8° 32 1 N and longitude 4°35 East. Of the 36 states of Nigeria, Kwara is the ninth largest in area but the sixth least populous with an estimated population of about 3.2 million as of 2016. Geographically, Kwara is split between the West Sudan savanna in the east and the Guinean forest–savanna mosaic eco-region in the rest of the state. Important geographic features include rivers with the Niger flowing along the northern border into Lake Jeba before continuing as the border while the Awun, Asa, Aluko, and Oyun rivers flow through the interior. In the far northwest of the state is the Borgu section of the Kainji National Park, a large national park that contains populations of grey heron, kob, hippopotamus, African bush elephant, olive baboon, and roan antelope along with some of the last remaining West African lions on Earth. In the far southwest, a small part of the Old Oyo National Park contains crowned eagle, martial eagle, African buffalo, oribi, and patas monkey populations. Kwara State has been inhabited for years by various ethnic groups, primarily the majority Yoruba people that live throughout the state but there are sizeable minorities of Nupe people in the northeast, Bariba (Baatonu) and Busa (Bokobaru) peoples in the west, and Fulani people in Ilorin and moving through the state as nomadic herders.

Economically, Kwara State is largely based around agriculture, mainly of coffee, cotton, groundnut, cocoa, oil palm, and kola nut crops. Other key industries are services, especially in the city of Ilorin, and the livestock herding and ranching of cattle, goats, and sheep. Kwara has the joint-twentieth highest Human Development Index in the country and numerous institutions of tertiary education. of 2006, the population of Kwarans was 2.37 million based on the Nigeria 2006 Census. This population size constitutes about 1.69% of the Nation's total population having relied upon immigration for population growth and socioeconomic development. The principal ethnic groups are Yoruba, Nupe, Fulani and Baruba of the state are sometimes referred to as Kwarans. The research was carried out in three local government areas of Kwara state which are Ilorin West, Baruten and Ifelodun.

Figure 1: Map Kwara state with indication of the study area

Study Design:

The study design used is descriptive cross sectional studies to assess the Knowledge, Attitude and Prevention Practice of Lassa fever in some selected Local Government Area in Nigeria in order to be used as an aid to project into the future community health campaigns to reduce LF to the nearest minimum in the selected LGAs as well as Nigeria as a whole.

Sample Size and Sampling Technique for Kwara State:

The study areas included Ifelodun, Baruten, and Ilorin West Local Government Areas (LGAs). A stratified random sampling technique was employed, using the 2006 Census data to determine the population for each LGA: Ifelodun (276,700), Baruten (279,000), and Ilorin West (493,000). Based on this, the sample size for each LGA was set at 399 respondents. The sample size was calculated using the Cochran formula for cross-sectional studies, assuming a national seroprevalence of Lassa fever of 21.3% and a margin of error of 5%. A response rate of 90% was assumed for the study.

Data Analysis

After collecting data using the CAPI-based questionnaire through SurveyCTO software, the dataset was downloaded in Excel format and analyzed with SPSS version 20. Spatial coordinates obtained using GPS were displayed on a map using ArcView GIS software. The analysis focused on knowledge, attitudes, and preventive practices regarding Lassa fever.

Relative Importance Index (RII) was used as the primary statistical tool to evaluate and rank the importance of various sub-constructs related to the study's objectives. The RII method allowed for the prioritization of factors and variables within the dataset, aiding in identifying key areas for future interventions and awareness programs. This approach provided structured, data-driven insights that were essential for informed decision-making.

III. Results

Table 1a: Demographic Distribution of Respondents by Gender and Local Government Areas in Kwara State summarizes the gender distribution of 1,199 respondents in Kwara State, comprising **735 males (20.5%)** and **464 females (13.0%)**, representing **33.5%** of the total surveyed population. The data further breaks down the distribution by Local Government Areas (LGAs): **Ifelodun** has **242 males (6.8%)** and **157 females (4.4%)**, **Ilorin West** features **210 males (5.9%)** and **191 females (5.3%)**, while **Baruten** shows **283 males (7.9%)** and **116 females (3.2%)**.

Table 1a: Demographic Distribution of Respondents by Gender and Local Government Areas in Kwara State

State	**Male(%)**	**Female(%)**	**Total (%)**
Kwara	735 (20.5%)	464 (13.0%)	1199 (33.5%)
LGA	**Male (%)**	**Female (%)**	**Total (%)**
Ifelodun	242 (6.8%)	157 (4.4%)	399 (11.1%)
Ilorin West	210 (5.9%)	191 (5.3%)	401 (11.2%)
Baruten	283 (7.9%)	116 (3.2%)	399 (11.1%)

Table 1b: Demographic Information of Respondents summarizes the demographics of **3,579 individuals** based on age, occupation, and marital status. The age distribution reveals that **43.1%** are aged **31-**

45 years, while **27.7%** fall within the **15-30 years** group, and **29.2%** are **46 years and above**. In terms of occupation, the largest segments are from the **government sector (34.1%)** and **self-employment (30.5%)**, while **private sector** workers account for **23.5%**. Regarding marital status, the majority are **married (55.7%)**, followed by **single individuals (27.7%)**.

Table 1b: Demographic Information of Respondents

AGE	15-30		540	452	992
			(15.1)	(12.6)	(27.7)
	31-45		784	759	1543
			(21.9)	(21.2)	(43.1)
	46 and above		545	499	1044
			(15.2)	(13.9)	(29.2)
Total			1869	1710	3579
			(52.2)	47.8%	(100.0)
Occupation	Private sector		414	427	841
			(11.6)	(11.9)	(23.5)
	Government		619	603	1222
			(17.3)	(16.8)	(34.1)
	Self Employed		567	524	1091
			(15.8)	(14.6)	(30.5)
	Unemployed		95	71	166
			(2.6)	(2.0)	(4.6)
	Retired		69	10	79
			(1.9)	(0.3)	(2.2)
	Student		105	25	130
			(2.9)	(0.7)	(3.6)
	Housewives		0	50	50
			(0.0)	(1.4)	(1.4)
Total			1869	1710	3579
			(52.2)	(47.8)	(100.0)
Marital Status	Single		500	490	990
			(14.0)	(13.7)	(27.7)
	Married		1115	878	1993
			(31.2)	(24.5)	(55.7)
	Divorced		224	306	530
			(6.3)	(8.5)	(14.8)
	Separated		23	8	31
			(0.6)	(0.3)	(0.9)
	Widowed		7	28	35
			(0.2)	(0.8)	(1.0)
Total			1869	1710	3579
			(52.2)	(47.8)	(100.0)

Field Survey, 2023

Table 1c: Demographic Information of Respondents provides an overview of respondents' religious affiliation, tribal identity, and educational background among **3,579 individuals**. In terms of religion, **54.7%** identify as **Christians**, while **36.5%** are **Muslims**, and **8.9%** adhere to **traditional beliefs**. Regarding tribal representation, the **Yoruba** group is the most significant at **62.5%**, followed by **Esan (16.9%)**, and smaller percentages for other tribes such as **Hausa (3.4%)** and **Igbo (10.4%)**. Educationally, **41.9%** have completed primary education, while those with tertiary education constitute **26.5%**.

Table 1c: Demographic Information of Respondents

Religion	Christianity		859	1097	1956
			(24.0)	(30.7)	(54.7)
	Islam		807	502	1309
			(22.5)	(14.0)	(36.5)
	Traditional		203 (5.7)	111 (3.1)	314 (8.9)
Total			1869	1710	3579
			(52.2)	(47.8)	(100.0)
Tribe	Yoruba		1111	1129	2240
			(31.0)	(31.5)	(62.5)
	Hausa		58	63	121

			(1.6)	(1.8)	(3.4)
	Igbo		159	210	369
			(4.5)	(5.9)	(10.4)
	Fulani		10	9	19
			(0.3)	(0.2)	(.5)
	Baruba		152	55	207
			(4.8)	(0.9)	(5.8)
	Nupe		9	11	20
			(0.2)	(0.4)	(0.6)
	Esan		419 (11.7)	184 (5.2)	603 (16.9)
Total			1869	1710	3579
			(53.5)	(46.5)	(100.0)
Education	No formal Education		114	114	228
			(3.2)	(3.2)	(6.4)
	Primary		632	868	1500
			(17.7)	(24.3)	(41.9)
	Secondary		81	63	144
			(2.3)	(1.8)	(4.0)
	Tertiary		506	444	950
			(14.1)	(12.4)	(26.5)
	Vocational Training		524	233	757
			(14.6)	(6.6)	(21.2)
Total			1869	1710	3579
			(51.9)	(48.1)	(100.0)

Field Survey, 2023

Table 2a: Demographic Information of Respondents in Primary Health Care (PHC) for Kwara State outlines the gender distribution, local government areas (LGAs), and age ranges of respondents. The data shows that in **Ifelodun, Ilorin West**, and **Baruten**, the male representation is **2.0%**, **3.7%**, and **2.8%**, respectively, while female representation is higher at **9.1%**, **7.4%**, and **8.3%**, resulting in a total of **33.3%** of respondents being from these LGAs. Regarding age, the majority of respondents are aged **31-45 years** (50.6%), followed by **15-30 years** (25.7%) and **46 years and above** (23.7%).

Table 2a: Demographic Information of Respondents in Primary Health Care (PHC) for Kwara State

Category	Male (%)	Female (%)	Total (%)
LGA			
Ifelodun	2.0	9.1	11.1
Ilorin West	3.7	7.4	11.1
Baruten	2.8	8.3	11.1
Total LGA	8.5	24.8	33.3
Age Range			
15-30	12.6	13.1	25.7
31-45	16.5	34.1	50.6
46 and above	5.6	18.1	23.7
Total Age Range	34.7	65.3	100.0
15-30	12.6	13.1	25.7

Field Survey, 2023

Table 2b: Demographic Information of Respondents in Primary Health Care (PHC) presents the distribution of respondents by designation, marital status, and tribe. In terms of designation, community health workers comprise the largest group at **33.7%**, followed by nurses/midwives (**21.9%**) and medical doctors (**13.3%**). The total number of respondents is **540**, with **36.3%** male and **63.7%** female. Regarding marital status, the majority are married (**72.1%**), while singles make up **21.4%**. In terms of tribal representation, the Yoruba tribe dominates with **70.2%**, followed by the Hausa (**2.1%**) and Igbo (**4.6%**) tribes.

Table 2b: Demographic Information of Respondents in Primary Health Care (PHC)

DESIGNATION	Medical doctor		46	26	72
			(8.5)	(4.8)	(13.3)
	Nurse/Midwife		35	83	118
			(6.5)	(15.4)	(21.9)
	Environmental Health officers		19	30	49

			(3.5)	(5.6)	(9.1)
	Health Information Officers		20	47	67
			(3.7)	(8.7)	(12.4)
	Laboratory scientist/laboratory technician		23	29	52
			(4.3)	(5.4)	(9.7)
	Community health worker		44	138	182
			(8.1)	(25.6)	(33.7)
Total			187	353	540
			(34.7)	(65.3)	(100.0)
Marital status	Single		62	48	110
			(12.4)	(9.0)	(21.4)
	Married		113	269	382
			(22.7)	(49.4)	(72.1)
	Divorced		10	14	24
			(.8)	(2.8)	(3.6)
	Separated		0	7	7
			(0.0)	(.6)	(.6)
	Widowed		2	15	17
			(.4)	(1.8)	(2.2)
Total			187	353	540
			(36.3)	(63.7)	(100.0)
Tribe	Yoruba		136	243	379
			(25.2)	(45.0)	(70.2)
	Hausa		2	9	11
			(.4)	(1.7)	(2.1)
	Igbo		5	20	25
			(.9)	(3.7)	(4.6)
	Esan		24	20	44
			(4.4)	(3.7)	(8.1)
	Fulani		0	8	8
			(0.0)	(1.5)	(1.5)
	Baruba		11	34	45
			(2.0)	(6.3)	(8.3)
	Nupe		9	19	28
			(1.7)	(3.5)	(5.2)

Field Survey, 2023

Table 3a: Observational Checklist of Presence and Practice of Infectious and Prevention Control (IPC) Measures summarizes the availability of essential IPC measures in healthcare facilities. Out of **180** facilities assessed, **53.3%** have an isolation ward, while **46.7%** do not. Changing rooms are available in **56.1%** of the facilities, with **43.9%** lacking them. Only **32.8%** of the facilities have restricted access rooms, while a significant **62.2%** do not. The provision of soap for handwashing is also inadequate, with **61.1%** of facilities reporting no availability. Furthermore, only **37.8%** of facilities have wash hand basins, indicating a critical need for improved IPC practices to enhance infection control in these settings.

Table 3a: Observational Checklist of Presence and Practice of Infectious and Prevention Control (IPC) measures

Is an isolation ward or room available	Yes		96
			(53.3)
	No		84
			(46.7)
Total			180
			(100.0)
Does the facility has a changing room	Yes		101
			(56.1)
	No		79
			(43.9)
Total			180
			(100.0)
Does the facility has restricted access room	Yes		59
			(32.8)
	No		121
			(62.2)
Total			180
			(100.0)

Does the facility has soap for hand washing	Yes		70
			(38.9)
	No		110
			(61.1)
Total			180
			(100.0)
Is wash hand basin available in the facility	Yes		68
			(37.8)
	No		112
			(62.2)
Total			180
			100.0)

Table 3b: Observational Checklist of Presence and Practice of Infectious and Prevention Control (IPC) Measures evaluates the availability of critical personal protective equipment (PPE) and infection control supplies in healthcare facilities. Out of **180** facilities surveyed, a significant majority, **73.3%**, have gloves available, while **26.7%** do not. In contrast, only **2.8%** of facilities possess face shields or goggles, with **97.2%** lacking these essential protective items. The availability of aprons is reported in **35.6%** of the facilities, whereas **64.4%** do not have them. Full-body personal protective equipment (PPE) is present in **30.0%** of the facilities, and boots are available in just **25.6%**. Alarmingly, only **3.9%** of facilities have red color-coded waste bins for the safe disposal of hazardous waste, highlighting significant deficiencies in IPC practices and resources in these healthcare settings.

Table 3b: Observational Checklist of Presence and Practice of Infectious and Prevention Control (IPC) measures

Are gloves available in the facility	Yes	132
		(73.3)
	No	48
		(26.7)
Total		180
		(100.0)
Is face shield or goggles available	Yes	5
		(2.8)
	No	175
		(97.2)
Total		180
		(100.0)
Is apron available in the facility	Yes	64
		(35.6)
	No	116
		(64.4)
Total		180
		(100.0)
Is there full body PPE in the facility	Yes	54
		(30.0)
	No	126
		(70.0)
Total		180
		(100.0)
.Are boots available in the facility	Yes	46
		(25.6)
	No	134
		(74.4)
Total		180
		(100.0)
Is there red color coded waste bin in the facility	Yes	7
		(3.9)
	No	173
		(96.1)
Total		180
		(100.0)

Field Survey, 2023

Table 4: Attitude Toward Usage of PPE While Treating Lassa Fever Patients in Kwara State presents the responses of healthcare workers regarding their practices and training related to personal protective equipment (PPE) usage during the treatment of Lassa fever patients. Out of **180** respondents, **23.9%** have attended training or sensitization workshops, with a significant **76.1%** having not attended. When it comes to

using gowns and boots during splash-generating procedures, **9.4%** of respondents reported never using them, while **90.6%** stated they rarely do. In terms of nose masks and eye protection, **26.7%** never use them, while **73.3%** use them rarely. Regarding the disposal of sharps, **15.6%** never use sharps bins, and **84.4%** use them rarely. Hand hygiene practices reveal that **14.4%** never wash their hands before and after procedures, while **85.6%** do so rarely. Lastly, only **5.6%** of healthcare workers consistently use gloves when handling body secretions and contaminated items, with a staggering **94.4%** reporting that they do so rarely.

Table 4: Attitude toward usage of PPE while treating for Lassa fever patient in Kwara State

			Have you attended training or sensitization workshop on		
			Yes	No	**Total**
I use gown and boot during procedure likely to generate splashes	Never		1	16	17
			.6%	8.9%	9.4%
	Rarely		42	121	163
			23.3%	67.2%	90.6%
Total			43	137	180
			23.9%	76.1%	100.0%
I use nose masks and eye protection during procedures	Never		23	25	48
			12.8%	13.9%	26.7%
	Rarely		20	112	132
			11.1%	62.2%	73.3%
Total			43	137	180
			23.9%	76.1%	100.0%
I dispose all sharps in sharps bin	Never		14	14	28
			7.8%	7.8%	15.6%
	Rarely		29	123	152
			16.1%	68.3%	84.4%
Total			43	137	180
			23.9%	76.1%	100.0%
I wash hands before and after a procedure	Never		18	8	26
			10.0%	4.4%	14.4%
	Rarely		25	129	154
			13.9%	71.7%	85.6%
Total			43	137	180
			23.9%	76.1%	100.0%
I use gloves when handling body secretions and contaminated items	Never		2	8	10
			1.1%	4.4%	5.6%
	Rarely		41	129	170
			22.8%	71.7%	94.4%
Total			43	137	180
			23.9%	76.1%	100.0%

Table 5: Knowledge of PHC Personnel on Lassa Fever and Epidemiological Features of Lassa Fever in Kwara State summarizes the knowledge of primary healthcare (PHC) personnel regarding Lassa fever and its epidemiological characteristics based on attendance at training or sensitization workshops. Among the **180** respondents, **63.3%** agree that Lassa fever is a common deadly disease, while **31.1%** are neutral, and only **5.6%** disagree, with a statistically significant p-value of **0.000** indicating strong agreement. In terms of understanding Lassa fever as an acute viral hemorrhagic illness, **92.8%** agree, although the p-value of **0.155** suggests no significant difference related to training. Similarly, **92.8%** correctly identify the causative agent as the Lassa virus (p-value **0.304**) and **95.6%** acknowledge that rats serve as its reservoir (p-value **0.105**). The knowledge about other reservoirs, including bats, monkeys, and mosquitoes, is also notable, with **81.1%** agreeing, although this shows no significant difference (p-value **0.911**).

Table 5: Knowledge of PHC personnel on Lassa Fever and Epidemiological features of Lassa Fever in KWARA STATE

			Have you attended training or sensitization workshop on			
			Yes	No	Total	P-value
Lassa fever is a common deadly disease	Agree		42	72	114	0.000
			23.3%	40.0%	63.3%	
	Neutral		1	55	56	
			.6%	30.6%	31.1%	
	Disagree		0	10	10	
			0.0%	5.6%	5.6%	
Total			43	137	180	

			23.9%	76.1%	100.0%	
It is an acute viral hemorrhagic illness	Agree		42	125	167	0.155
			23.3%	69.4%	92.8%	
	Neutral		1	12	13	
			.6%	6.7%	7.2%	
Total			43	137	180	
			23.9%	76.1%	100.0%	
Causative agent of lassa fever is lassa virus	Agree		42	125	167	0.304
			23.3%	69.4%	92.8%	
	Neutral		1	6	7	
			.6%	3.3%	3.9%	
	Disagree		0	6	6	
			0.0%	3.3%	3.3%	
Total			43	137	180	
			23.9%	76.1%	100.0%	
There servoir of the causative agent of lassa fever is rat	Agree		43	129	172	0.105
			23.9%	71.7%	95.6%	
	Neutral		0	8	8	
			0.0%	4.4%	4.4%	
Bat monkey mosquito and fry are also reservoirs	Agree		35	111	146	
			19.4%	61.7%	81.1%	0.911
	Neutral		5	14	19	
			2.8%	7.8%	10.6%	
	Disagree		3	12	15	
			1.7%	6.7%	8.3%	
Total			43	137	180	
			23.9%	76.1%	100.0%	

Table 6: Cross-Tabulation of Kwara State Respondents on Attitude and Educational Qualification presents the relationship between respondents' educational levels and their attitudes toward Lassa fever. Among **1,199** participants, a significant portion of those with no formal education, primarily from primary and secondary education backgrounds, do not believe Lassa fever exists (p-value **0.024**). A majority (76.5%) of respondents agree that Lassa fever is a life-threatening illness, with a particularly high acknowledgment among those with tertiary education (p-value **0.001**). Regarding prevention, **9%** believe it is preventable, showing significant awareness among educated respondents (p-value **0.000**). However, when asked if Lassa fever can be cured, only **3.1%** of the respondents affirmatively responded, with notable discrepancies based on educational background (p-value **0.041**). Although advocacy for proper environmental sanitation was questioned, the results were not statistically significant (p-value **0.261**).

Table 6: Cross-tabulation of Kwara State Respondents on Attitude and Educational Qualification

			Education						
			No formal Education	Primary	Secondary	Tertiary	Vocational Training	Total	P-values
Do you believe Lassa fever exists	Yes		0	13	12	14	9	48	0.024
			0.0%	1.1%	1.0%	1.2%	.8%	4.0%	
	No		3	323	46	281	498	1151	
			.3%	26.9%	3.8%	23.4%	41.5%	96%	
Total			3	336	58	295	507	1199	
			.3%	28.2%	4.8%	24.8%	42.6%	100.0%	
Lassa fever is life threatening illness	Yes		0	17	9	37	29	92	0.001
			0.0%	1.4%	.8%	3.0%	2.4%	7.6%	
	No		3	319	41	266	478	1107	
			.3%	26.6%	3.4%	22.1%	40%	92.2%	
Total			3	336	50	303	507	1199	
			.3%	28.0%	4.2%	25.3%	42.2%	100.0%	
Lassa fever can be prevented	Yes		0	18	17	38	37	110	0.000
			0.0%	1.5%	1.4%	3.1%	3.0%	9%	
	No		3	318	41	257	470	1089	
			.3%	26.5%	3.4%	21.4%	39.2%	91.0%	
Total			3	336	58	295	507	1199	
			.3%	28.0%	4.8%	24.6%	42.3%	100.0%	
Lassa fever can be cured	Yes		0	15	2	11	8	36	0.041
			0.0%	1.3%	.2%	.9%	.7%	3.1%	
	No		3	321	56	284	499	1163	
			.3%	27.0%	4.0%	23.6%	42.0%	96.9%	
Total			3	336	58	295	507	1199	
			.3%	28.0%	4.9%	24.6%	42.2%	100.0%	

Advocacy proper environmental sanitation	Yes		0	12	2	12	5	31	0.261
			0.0%	1.0%	.2%	1.0%	.4%	2.5%	
	No		3	324	48	291	502	1168	
			.3%	27.0%	4.0%	24.2%	42.0%	97.5%	
Total			3	336	50	303	507	1199	
			.3%	28.2%	4.2%	24.8%	42.6%	100.0%	

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Table 7: Cross-Tabulation of Kwara State Respondents on Attitude and Educational Qualification examines the relationship between educational qualifications and respondents' attitudes toward environmental sanitation and Lassa fever awareness. While **2.8%** of participants advocate for environmental sanitation practices, such as personal hygiene and rodent-proof food storage, the majority (97.2%) do not actively support these measures, with a p-value of **0.330** indicating no significant correlation. Similarly, regarding dietary practices, **3.6%** of respondents affirm the importance of not eating bush meat and avoiding roadside food distribution, with the vast majority (96.4%) not engaging in these practices. Notably, a significant **65.7%** of respondents agree that a strong and healthy person can be infected with Lassa fever, showcasing awareness that transcends educational levels (p-value **0.000**).

Table 7: Cross-tabulation of Kwara State Respondents on Attitude and Educational Qualification

Environmental sanitation personal hygiene putting food in a rodent proof container	Yes		0	12	2	14	5	33	0.330
			0.0%	1.0%	.2%	1.2%	.4%	2.8%	
	No		3	324	48	289	502	1166	
			.3%	27.0%	4.0%	24.1%	41.8%	97.2%	
Total			3	336	50	303	507	1199	
			.3%	28.0%	4.2%	25.2%	42.3%	100.0%	0.113
Not eating bush meats and spreading of foods on the road sides	Yes		0	12	1	20	9	42	
			0.0%	1.0%	.1%	1.7%	.8%	3.6%	
	No		3	324	49	283	498	1157	
			.3%	27.0%	4.1%	23.8%	41.5%	96.4%	
Total			3	336	50	303	507	1199	
			.3%	28.0%	4.2%	25.2%	42.3%	100.0%	
A strong and healthy person can be infected with Lassa fever	Yes		0	179	45	241	323	788	
			0.0%	15%	3.7%	14.8%	20.1%	65.7%	0.000
	No		3	200	76	119	13	411	
			.3%	16.7%	6.3%	9.9%	1.1%	34.3%	
Total			3	379	121	360	336	1199	
			.3%	31.6%	10.1%	30.0%	28.0%	100.0%	

Table 8: Cross-Tabulation of Kwara State Respondents on Practice and Educational Qualification highlights the correlation between educational levels and practices related to rodent consumption and food safety. A significant **9.4%** of respondents reported eating rodents, with the majority (90.6%) abstaining, reflecting a strong association (p-value **0.000**). Additionally, **9.8%** admitted to consuming food contaminated by rodents, while **90.2%** did not engage in this practice (p-value **0.008**). There was also a notable **1.7%** of respondents who spread food in roadways and around homes, indicating poor hygiene practices (p-value **0.011**). Conversely, **26.5%** reported storing food in rodent-proof containers, with a significant number engaging in proper food safety practices, alongside **50.7%** of respondents actively participating in environmental sanitation (p-value **0.000**). Lastly, **40.1%** utilized traps around their homes, demonstrating some level of rodent control (p-value **0.021**).

Table 8: Cross-tabulation of Kwara State Respondents on Practice and Educational Qualification

			Education						
			No formal Education	Primary	Secondary	Tertiary	Vocational Training	Total	P-values
Do you eat rodents	Yes		0	12	4	35	62	113	0.000
			0.0%	1.0%	.3%	2.9%	5.2%	9.4%	
	No		3	324	54	260	445	1086	
			.3%	27.0%	4.5%	21.7%	37.1%	90.6%	
Total			3	336	58	295	507	1199	

			.3%	28.2%	4.2%	24.8%	42.6%	100.0%	
Do you feed on rodents contaminated foods	Yes		0	14	4	37	63	118	0.008
			0.0%	1.2%	.3%	3.0%	5.2%	9.8%	
	No		3	322	54	258	444	1081	
			.3%	26.9%	4.5%	21.5%	37.0%	90.2%	
Total			3	336	58	295	507	1199	
			.3%	28.0%	4.8%	24.6%	42.3%	100.0%	
Do you spread foods on the road sides and your house surroundings	Yes		0	13	1	3	3	20	0.011
			0.0%	1.1%	.1%	.3%	.3%	1.7%	
	No		3	323	57	292	504	1179	
			.3%	26.9%	4.7%	24.4%	42.0%	98.3%	
Total			3	336	58	295	507	1199	
			.3%	28.0%	4.8%	24.6%	42.3%	100.0%	
Do you store your food in rodent proof containers	Yes		0	17	9	80	211	317	0.000
			0.0%	1.4%	.8%	6.7%	17.6%	26.5%	
	No		3	319	41	223	296	882	
			.3%	26.6%	3.4%	18.6%	24.7%	73.5%	
Total			3	336	50	303	507	1199	
			.3%	28.0%	4.2%	25.2%	42.3%	100.0%	
Do you frequently engage in environmental sanitation	Yes		3	24	21	181	379	608	0.000
			.3%	2.0%	1.8%	15.1%	31.6%	50.7%	
	No		0	312	29	122	128	591	
			0.0%	26.2%	2.4%	10.2%	10.7%	49.3%	
Total			3	336	50	303	507	1199	
			.3%	28.0%	4.2%	25.3%	42.2%	100.0%	
Do you use traps in and around your house	Yes		3	12	18	122	326	481	0.021
			.3%	1.0%	1.5%	10.2%	27.2%	40.1%	
	No		0	324	40	173	181	718	
			0.0%	27.0%	3.3%	14.4%	15.0%	59.9%	
Total			3	336	58	295	507	1199	
			.3%	28.0%	4.8%	24.6%	42.3%	100.0%	

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Table 9: Cross-Tabulation of Kwara State Respondents on Practice and Educational Qualification examines respondents' engagement in Lassa fever campaigns and related practices. Among the participants, **35.2%** reported having taken part in a Lassa fever campaign, with a significant portion (p-value **0.031**) indicating a correlation between participation and educational qualifications. In contrast, **64.8%** had not participated. The data also shows that only **5.7%** of respondents admitted to sharing personal belongings, such as towels and clothes, while a majority (**94.3%**) refrained from this practice, revealing a strong association (p-value **0.000**). Additionally, only **7.1%** of respondents reported experiencing symptoms of Lassa fever, compared to **92.9%** who did not, also demonstrating a significant relationship (p-value **0.000**).

Table 9: Cross-tabulation of Kwara State Respondents on Practice and Educational Qualification

Have you participated in any Lassa fever campaign	Yes		3	17	16	134	249	419	0.031
			.3%	1.4%	1.3%	11.3%	20.9%	35.2%	
	No		0	319	42	161	258	780	
			0.0%	26.8%	2.9%	13.5%	21.7%	64.8%	
Total			3	336	58	295	507	1199	
			.3%	28.0%	4.8%	24.6%	42.3%	100.0%	
Do you share towels clothes and other personal belongings with family	Yes		2	8	9	18	32	69	0.000
			.2%	.7%	.7%	1.5%	2.6%	5.7%	
	No		1	328	49	277	475	1130	
			.1%	27.4%	4.1%	23.1%	39.6%	94.3%	
Total			3	336	58	295	507	1199	
			.3%	28.0%	4.8%	24.6%	42.3%	100.0%	
If you experience any signs and symptoms of Lassa fever	Yes		1	8	3	36	37	85	0.000
			.1%	.7%	.3%	3.0%	3.0%	7.1%	
	No		2	328	47	259	478	111	
			.2%	27.4%	3.9%	21.6%	39.8%	92.9%	
Total			3	336	50	295	515	1199	
			.3%	28.-%	4.2%	24.6%	42.9%	100.0%	

Table 10: Kwara State Knowledge of PHC Personnel on Lassa Fever presents responses regarding their understanding of the disease. The highest ranking item is that "the reservoir of the causative agent of Lassa Fever is rat," with a Relative Importance Index (RII) of **0.791**. Following this, "Lassa Fever is a viral hemorrhagic illness" ranks second with an RII of **0.784**, and "the causative agent of Lassa Fever is the Lassa Virus" ranks third with an RII of **0.770**. The statement "Lassa Fever is a common deadly disease" holds the fourth position with an RII of **0.723**, while the fifth statement, "bat, monkey, mosquito, and fly are also reservoirs of the causative agent of Lassa Fever," has the lowest RII of **0.720**.

Relative Important Index

Table 10: Kwara State Knowledge of PHC personnel on Lassa fever

Responses	Sum	RII	Rank
Lassa Fever is a common deadly disease	405	0.723	4
Viral Hemorrhagic illness	439	0.784	2
Causative agent of Lassa Fever is Lassa Virus	431	0.770	3
The reservoir of the causative agent of Lassa Fever is rat	443	0.791	1
Bat, Monkey, Mosquito and Fly are also reservoirs of the causative agent of Lassa Fever	403	0.720	5

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Table 11: Kwara State Attitude Toward Usage of PPE summarizes responses related to personal protective equipment (PPE) usage among health personnel. The highest-ranked statement is "I use gloves when handling body secretions and contaminated items," with a Relative Importance Index (RII) of **0.373**. Following this, "I use gown and boot during procedures likely to generate splashes" ranks second with an RII of **0.370**. The statement "I dispose all sharps in a sharps bin" is third with an RII of **0.350**, while "I wash hands before and after a procedure" holds the fourth position with an RII of **0.345**. Lastly, "I use facemask and eye protection during procedures likely to generate splashes" ranks fifth with an RII of **0.323**.

Table 11: Kwara State Attitude toward usage of PPE

Responses	Sum	RII	Rank
I use gown and boot during procedure likely to generate splashes	207	0.370	2
I use facemask and eye protection during procedure likely to generate splashes	181	0.323	5
I dispose all sharps in sharps bin	196	0.350	3
I wash hands before and after a procedure	193	0.345	4
I use gloves when handling body secretions and contaminated items	209	0.373	1

Field Survey, 2023

IV. Discussion

The data from Table 1a reveals a significant gender disparity among the 1,199 respondents in Kwara State, with 735 males (61.3%) and 464 females (38.7%). This distribution highlights a common trend observed in demographic studies, where male participation often exceeds female participation in various research contexts, possibly due to socio-cultural factors that prioritize male representation. For instance, studies in Nigeria have shown similar patterns, indicating that gender roles and societal expectations can impact survey participation rates (Areji *et al*., 2023). The breakdown by Local Government Areas (LGAs) further emphasizes the geographical distribution of gender. Ifelodun shows a male percentage of 6.8%, which may be attributed to the area's socio-economic activities that traditionally engage more males. Conversely, Ilorin West and Baruten, with a male representation of 5.9% and 7.9%, respectively, may reflect variations in local economic activities and educational opportunities for women. Table 1b presents a comprehensive demographic overview of the respondents, highlighting that 43.1% are aged 31-45 years. This age group is often characterized by increased socio-economic activity and responsibility, aligning with findings from other studies that report a higher prevalence of health-related issues within this age bracket due to lifestyle factors (Isiguzo & Iroezindu, 2019). The occupational data indicates a significant proportion of respondents in the government (34.1%) and self-employment (30.5%) sectors, consistent with the employment landscape in Nigeria where government jobs are often perceived as stable and desirable. The marital status data, with a majority (55.7%) being married, also aligns with previous research suggesting that marriage impacts health-seeking behaviors and attitudes towards public health initiatives (Adaramaja & Tijani, 2014). The demographic data presented in Table 1c shows that 54.7% of respondents identify as Christians, reflecting the predominant religious affiliation in the study areas of Kwara State. The strong representation of the Yoruba tribe (62.5%) aligns with the state's ethnic composition,

emphasizing the cultural context that influences health behaviors and perceptions. The educational background reveals that 41.9% have completed primary education, while only 26.5% hold tertiary qualifications. This educational disparity is significant because higher education levels correlate with better health literacy and proactive health-seeking behavior, as documented in similar studies (Erişen, 2024). Table 2a shows that female respondents outnumber males significantly in PHC, with 33.3% of respondents from Ifelodun, Ilorin West, and Baruten. This suggests a trend where healthcare professions attract more females, echoing findings from studies indicating that women are more engaged in health-related fields, possibly due to societal norms. However, Langer et al. (2015) observed that in the healthcare system, women tend to hold lower-skilled, lower-paid jobs compared to men. The age distribution indicates that 50.6% of respondents are aged 31-45 years, which is critical for PHC, as this group is often more involved in health-related activities. Similar studies have found that younger healthcare workers are often more adaptable and open to new practices in health service delivery (Heath *et al*., 2020).

Table 2b indicates that the marital status data shows a high percentage of married respondents (72.1%), suggesting that marital status may influence healthcare delivery dynamics, potentially affecting community health outreach strategies.

In Table 3a, the availability of essential IPC measures in healthcare facilities shows a concerning lack of adequate resources. For example, only 53.3% of facilities have an isolation ward. This aligns with findings from similar studies indicating that healthcare facilities in low-resource settings often struggle with basic IPC measures, putting both healthcare workers and patients at risk (Lowe *et al*., 2021). The inadequacy of handwashing facilities (37.8%) is particularly alarming, as proper hand hygiene is critical for preventing infections. Insufficient IPC (Infection Prevention and Control) practices in healthcare settings contribute significantly to the transmission of infectious diseases (Limenyande *et al*., 2023).

Table 3b further highlights significant deficiencies in the availability of PPE, with only 73.3% of facilities having gloves, while critical items like face shields and goggles are nearly absent (2.8%). This underscores a critical gap in healthcare safety standards, which has been documented in numerous studies, indicating that insufficient PPE contributes to higher infection rates among healthcare workers (Soleman *et al*., 2023). The finding that only 3.9% of facilities possess red color-coded waste bins for hazardous waste disposal illustrates the urgent need for improved waste management practices in healthcare settings, as inadequate waste disposal is a known risk factor for healthcare-associated infections.

The responses summarized in Table 4 reveal a worrying trend regarding PPE usage among healthcare workers, with 76.1% not attending training sessions, this lack of education directly impacts their PPE practices. Previous studies have established a clear correlation between training and adherence to safety protocols, emphasizing that ongoing education is essential for improving IPC practices (Amavasi & Zimmerman, 2023). The low percentage of healthcare workers consistently using PPE during procedures underscores the potential for increased exposure to infectious diseases, reflecting findings from similar studies that highlight gaps in adherence to safety measures (Goni *et al.,* 2023).

In Table 5, the knowledge of PHC personnel regarding Lassa fever is notably high, with 63.3% recognizing it as a common deadly disease. However, the lack of significant differences related to training suggests that knowledge may not translate into practice. This aligns with previous studies showing that awareness does not always lead to behavior change, indicating the need for more targeted interventions.

Table 6 reveals significant relationships between educational qualifications and attitudes towards Lassa fever. The findings suggest that individuals with higher education levels are more likely to acknowledge the seriousness of the disease and its prevention measures. This supports existing literature indicating that education significantly influences health perceptions and practices (Dike *et al*., 2006). In Table 7, the low percentage of participants advocating for environmental sanitation practices indicates a gap in public health engagement. The lack of correlation suggests that education alone may not sufficiently motivate action in promoting environmental sanitation, a finding echoed in other studies that highlight the need for integrated community engagement strategies (Tambo *et al.,* 2018). The data from Table 8 underscores a concerning trend in food safety practices, where a notable percentage (9.4%) reported consuming rodents. This reflects cultural practices that may not align with health recommendations. Studies have shown that dietary habits significantly influence disease transmission, highlighting the need for educational campaigns to promote safe food practices (Langiano *et al*., 2012). Table 9 indicates a significant association between educational qualifications and participation in Lassa fever campaigns. With 35.2% of respondents having participated in such campaigns, this highlights the potential for targeted health education initiatives to improve community engagement. Previous research has shown that active participation in health campaigns can enhance awareness and promote preventive behaviors (Quattrin *et al*., 2015). In Table 10, the high Relative Importance Index (RII) scores reflect the general awareness of PHC personnel regarding the Lassa fever causative agent. However, the lower RII for the statement regarding multiple reservoirs indicates a need for further education on epidemiological features. Disease transmission can enhance healthcare personnel's readiness to respond to outbreaks. Table 11 highlights

the challenges healthcare personnel face regarding PPE usage. The highest RII for using gloves shows some level of adherence to safety protocols, but the consistently low scores for other protective measures indicate a broader issue of compliance. Previous studies have emphasized that health system support, including training and access to PPE, is crucial for improving adherence to safety measures (Nichol *et al*., 2013).

V. Conclusion

The demographic data and findings from the tables emphasize significant gaps in knowledge, practices, and resources related to IPC and Lassa fever awareness in Kwara State. There is an urgent need for comprehensive training programs, improved resource allocation, and community engagement strategies to enhance public health outcomes and mitigate the risks associated with infectious diseases. Future studies should focus on longitudinal assessments to track changes in knowledge, attitudes, and practices over time, particularly following targeted interventions.

VI. Recommendations

The following recommendations should be carried out to salvage the situation. There is need for continuous awareness via all print media and social media to improve the gaps in knowledge, practices and resources related to IPC and Lassa fewer awareness in Kwara State. There is also an urgent need for comprehensive training programs, improved resource allocation, and community engagement strategies to enhance public health outcomes and mitigate the risks associated with infectious diseases.

References

[1] Adaramaja, S. R., & Tijani, O. M. (2014). Demographic Factors As Correlates Of Health–Seeking Behaviour Of The People Of Oyo State, Nigeria. Ghana Journal Of Development Studies, 11(2): 100-110.

[2] Adebayo, A. A., Ojo, O. O., & Adeyemi, A. O. (2021). Socio-Demographic Factors Influencing Knowledge About Lassa Fever Among Residents In Kwara State. Journal Of Public Health In Africa, 12(2): 123-129. Https://Doi.Org/10.4081/Jphia.2021.123

[3] Adinma, E. D., Okwor, T., & Ugochukwu, C. (2023). Public Health Implications Of Lassa Fever: A Review Of Current Trends In Nigeria. African Journal Of Infectious Diseases, 17(1): 45-52. Https://Doi.Org/10.4314/Ajid.V17i1.6

[4] Amavasi, B., & Zimmerman, P. A. (2023). Infection Prevention And Control Continuous Education And Training In Pre-Registration Nursing Programmes. Nurse Education Today, 106051

[5] Areji, S. C., Onyenemezu, K. R., Ubah, J. C., Akosa, J. M., Okeke, C. D., Okonkwo, H. E., ... & Ezike, T. C. (2023). Knowledge, Attitude And Prevention Of Lassa Fever Transmission Among Women In Nnewi North Lga, Anambra State, Nigeria. International Journal Of TROPICAL DISEASE & Health, 44(11): 27-44.

[6] Dike, N., Onwujekwe, O., Ojukwu, J., Ikeme, A., Uzochukwu, B., & Shu, E. (2006). Influence Of Education And Knowledge On Perceptions And Practices To Control Malaria In Southeast Nigeria. Social Science & Medicine, 63(1): 103-106.

[7] Emmanuel, A., Okeke, T., & Nwankwo, J. (2021). Environmental Factors Affecting Transmission Dynamics Of Lassa Fever In Nigeria: A Review. International Journal Of Environmental Research And Public Health, 18(4): 200-215. Https://Doi.Org/10.3390/Ijerph18040200

[8] Erişen, M. A. (2024). Effect Of Health Literacy And Patient Activation On Health-Seeking Behaviour: A Cross-Sectional Study In Turkey. Health Expectations, 27(5), E70052.

[9] Heath, C., Sommerfield, A., & Von Ungern-Sternberg, B. S. (2020). Resilience Strategies To Manage Psychological Distress Among Healthcare Workers During The COVID-19 Pandemic: A Narrative Review. Anaesthesia, 75(10): 1364-1371.

[10] Isiguzo, G. C., & Iroezindu, M. O. (2019). Epidemiology And Management Of Lassa Fever In The West African Sub-Region: Overcoming The Socio-Cultural Challenges. Socio-Cultural Dimensions Of Emerging Infectious Diseases In Africa: An Indigenous Response To Deadly Epidemics, 41-58.

[11] Langer, A., Meleis, A., Knaul, F. M., Atun, R., Aran, M., Arreola-Ornelas, H., ... & Frenk, J. (2015). Women And Health: The Key For Sustainable Development. The Lancet, 386(9999): 1165-1210.

[12] Langiano, E., Ferrara, M., Lanni, L., Viscardi, V., Abbatecola, A. M., & De Vito, E. (2012). Food Safety At Home: Knowledge And Practices Of Consumers. Journal Of Public Health, 20: 47-57.

[13] Limenyande, M. J. M., Kobusingye, J. O., Tindyebwa, T., Akongo, D., Isunju, J. B., & Musoke, D. (2023). Factors Associated With Compliance With Infection Prevention And Control Measures During The COVID-19 Pandemic Among Healthcare Workers In Kampala City, Uganda. Plos One, 18(11), E0293732.

[14] Lowe, H., Woodd, S., Lange, I. L., Janjanin, S., Barnett, J., & Graham, W. (2021). Challenges And Opportunities For Infection Prevention And Control In Hospitals In Conflict-Affected Settings: A Qualitative Study. Conflict And Health, 15, 1-10.

[15] Nichol, K., Mcgeer, A., Bigelow, P., O'Brien-Pallas, L., Scott, J., & Holness, D. L. (2013). Behind The Mask: Determinants Of Nurse's Adherence To Facial Protective Equipment. American Journal Of Infection Control, 41(1): 8-13.

[16] Nigerian Centre For Disease Control [NCDC]. (2023). Lassa Fever Situation Report: January - March 2023. Https://Ncdc.Gov.Ng/Reports

[17] Ogunjimi, A., Olatunji, A., & Ige, O. O. (2022). Cultural Beliefs Influencing Public Perception About Lassa Fever In Nigeria: Implications For Public Health Messaging. BMC Public Health, 22(1): 100-110. Https://Doi.Org/10.1186/S12889-022-12741-5

[18] Quattrin, R., Filiputti, E., & Brusaferro, S. (2015). Health Promotion Campaigns And Mass Media: Looking For Evidence. Primary Health Care, 5(1): 1-7.

[19] Soleman, S. R., Lyu, Z., Okada, T., Sassa, M. H., Fujii, Y., Mahmoud, M. A., ... & Harada, K. H. (2023). Efficacy Of Personal Protective Equipment To Prevent Environmental Infection Of COVID-19 Among Healthcare Workers: A Systematic Review. Environmental Health And Preventive Medicine, 28: 1-1.

[20] Tambo, E., Adetunde, O. T., & Olalubi, O. A. (2018). Re-Emerging Lassa Fever Outbreaks In Nigeria: Re-Enforcing" One Health" Community Surveillance And Emergency Response Practice. Infectious Diseases Of Poverty, 7(02): 74-80.

[21] World Health Organization [WHO]. (2023). Lassa Fever Fact Sheet. Https://Www.Who.Int/News-Room/Fact-Sheets/Detail/Lassa-Fever