

**Knowledge, Attitude and Preventive Practices of Lassa Fever infection among Healthcare Workers in Primary Health Centers in Selected Local Government Areas, Oyo State**

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**Abstract**

Lassa fever remains a significant viral Haemorrhagic illness in West Africa with Nigeria bearing the highest burden of morbidity and mortality. Healthcare workers [HCWs] are at particular risk of exposure due to frequent contact with patients 'bodily fluids, yet evidence indicates persistent gaps in knowledge, attitude and infection prevention and control [IPC] practices. This study examined the knowledge, attitude, and preventive practices of healthcare workers towards Lassa fever in selected local government areas of Oyo State, aiming to establish the relationship between these factors and professional characteristics. Despite numerous outbreaks of Lassa fever in Nigeria, evidence suggests gaps in health workers' compliance with prevention protocols. This study applied the theory of planned behavior to explain how knowledge and attitudes translate into practices. A descriptive cross-sectional research design was adopted, involving 212 healthcare workers selected using stratified and simple random sampling techniques. Data were collected through a structured, validated questionnaire and analyzed using descriptive statistics such as frequencies and percentages, and inferential statistics including Chi-square tests at a 0.05 level of significance.

Findings revealed a significant association between knowledge and attitude towards Lassa fever ( $\chi^2(2) = 9.21$ ,  $p = 0.010$ ), attitude and preventive practices ( $\chi^2(2) = 7.45$ ,  $p = 0.024$ ), knowledge and preventive practices ( $\chi^2(4) = 21.21$ ,  $p = 0.000$ ), and professional characteristics such as qualification and preventive practices ( $\chi^2(6) = 17.95$ ,  $p = 0.006$ ). However, years of experience did not show a significant relationship with preventive practices ( $\chi^2(4) = 6.98$ ,  $p = 0.137$ ). It was concluded in the study that healthcare workers' knowledge and attitude significantly influence their preventive practices against Lassa

fever. Recommendations include continuous training, adequate provision of protective resources, and institutional support to strengthen compliance with prevention and control strategies.

**Keywords:** Lassa fever, knowledge, attitude, healthcare workers, Oyo State

**Word Count:** 283

## **Introduction**

Lassa fever is a viral hemorrhagic illness caused by the Lassa virus, a single-stranded RNA virus belonging to the *Arenaviridae* family. Since its discovery in 1969 in the town of Lassa, Borno State, Nigeria, the infection has persisted as a major public health threat across West Africa, particularly in Nigeria, Sierra Leone, Liberia, and Guinea (McCormick & Fisher-Hoch, 2002). Symptoms often begin nonspecifically fever, headache, and malaise which resemble malaria or typhoid, complicating early diagnosis. In severe cases, the disease may progress to hemorrhage, shock, and multi-organ failure, with case fatality rates (CFRs) as high as 15–20.0% among hospitalized patients (Richmond & Baglolle, 2003). The vague early presentation and high risk of nosocomial spread make healthcare workers (HCWs) particularly vulnerable.

Transmission occurs through contact with excreta from the *Mastomys natalensis* rodent reservoir, as well as human-to-human spread via blood, body fluids, and contaminated medical equipment. HCWs in Nigeria face sustained occupational risks due to frequent shortages of personal protective equipment (PPE), inadequate training, and inconsistent compliance with infection prevention and control (IPC) protocols (Ajayi et al., 2010). Although the Nigeria Centre for Disease Control (NCDC) has strengthened surveillance since 2011, outbreaks continue to occur annually. In 2022 alone, there were 880 confirmed cases of Lassa fever across 25 states, with 6.1.0% involving healthcare workers (Nigeria Centre for Disease Control [NCDC], 2022).

Research has consistently shown significant gaps in knowledge, attitudes, and practices among HCWs in endemic zones. For instance, a multi-center study in Northern Nigeria revealed that only 69.0% of HCWs were aware of an ongoing outbreak in their state, and fewer than two-thirds demonstrated satisfactory knowledge of prevention measures (Olayemi et al., 2018). Similarly, a study at Federal Medical Centre Owo reported that only 52.3.0% of HCWs demonstrated appropriate knowledge of IPC practices (Tobin

et al., 2012). These findings highlight that awareness of Lassa fever does not always translate into safe practices. Structural barriers such as shortages of PPE, lack of water supply, inadequate waste management facilities, and weak institutional support further exacerbate these gaps (Ibrahim et al., 2021).

Attitudes also shape preventive behavior. HCWs who perceive low personal susceptibility may be less compliant with IPC, while those experiencing fear of stigmatization or job insecurity may hesitate to report suspected cases (Suleiman et al., 2020). Conversely, workers who receive formal training often display higher confidence and willingness to engage with suspected cases (Ijarotimi et al., 2022). Thus, strengthening knowledge and promoting positive attitudes through supportive supervision and continuing education are vital in reducing nosocomial transmission.

Epidemiological data underscores the urgency of this problem. Between 2020 and 2023, over 28,000 suspected cases and 4,036 laboratory-confirmed cases of Lassa fever were reported in Nigeria, with 762 deaths, yielding a CFR of 18.9.0% (NCDC, 2023). Though Ondo, Edo, and Bauchi states account for over 70.0% of cases, outbreaks have been increasingly reported in other states, including Oyo (Federal Ministry of Health [FMoH], 2018). In December 2024, Oyo State recorded 41 suspected cases, one confirmed death, and at least one laboratory-confirmed infection, highlighting its vulnerability (Ajayi et al., 2020).

Ibadan North and Ibadan North-East Local Government Areas of Oyo State, where this study is situated, are densely populated with multiple primary health centers, making them susceptible to nosocomial spread if Lassa fever emerges. Yet, little empirical evidence exists regarding the preparedness of HCWs in this region. Prior research has disproportionately focused on high-prevalence states, leaving a gap in understanding HCWs' knowledge, attitudes, and practices in regions with sporadic or emerging cases. Furthermore, there is scant literature on whether HCWs retain knowledge over time or receive regular updates on new guidelines and prevention strategies (World Health Organization [WHO], 2020).

The problem therefore centers on three concerns. First, Lassa fever continues to cause recurrent outbreaks in Nigeria, with significant mortality and geographic spread. Second, HCWs the most exposed group often demonstrate suboptimal knowledge, negative

attitudes and inconsistent preventive practices, increasing nosocomial transmission risks. Third, in Oyo State, and particularly Ibadan, there is a lack of empirical data to inform context-specific interventions. Without addressing these gaps, HCWs and communities remain vulnerable to avoidable morbidity and mortality. This study assessed the knowledge, attitudes, and preventive practices of HCWs in primary health centers in Ibadan, Oyo State, with the aim of identifying gaps that can inform training, institutional support, and targeted interventions. Bridging this knowledge gap can enhance infection control practices and strengthen preparedness against Lassa fever in endemic and emerging regions of Nigeria.

### **Methodology**

Descriptive cross-sectional research design was used to assess the knowledge, attitudes, and preventive practices of healthcare workers regarding Lassa fever.

### **Study Area**

The study was conducted in Ibadan North and Ibadan North-East Local Government Areas (LGAs) of Oyo State, Nigeria. These LGAs were selected because of their high population density, presence of multiple primary healthcare centers (PHCs), and potential vulnerability to outbreaks of Lassa fever due to increased patient–provider interactions. Oyo State has reported suspected and confirmed cases of Lassa fever in recent years, underscoring the need for preparedness among healthcare workers (WHO, 2014).

### **Population of the Study**

The population comprised **healthcare workers** in PHCs across the selected LGAs. These included doctors, nurses, midwives, community health extension workers (CHEWs), laboratory technicians, and other clinical personnel.

### **Sample Size and Sampling Technique**

A sample size of 212 respondents was determined using the Yamane formula (1967) at a 95.0% confidence level and a 5.0% margin of error (Cronbach, 1951). Stratified random sampling was used to ensure proportional representation of different cadres of healthcare

workers. Within each stratum (nurses, doctors, CHEWs, laboratory staff), simple random sampling was applied to select participants. This approach minimized selection bias and enhanced representativeness of the sample.

### **Instrument for Data Collection**

A structured questionnaire was developed and used for data collection. The instrument comprised four sections:

- **Section A:** Socio-demographic and professional data (age, sex, cadre, years of experience, qualifications).
- **Section B:** Knowledge of Lassa fever (15 multiple-choice questions).
- **Section C:** Attitudes toward Lassa fever (15 Likert-scale statements).
- **Section D:** Preventive practices (15 Likert-scale statements).

The questionnaire was developed based on previous literature, NCDC guidelines, and World Health Organization recommendations (WHO, 2014).

### **Validity and Reliability of Instrument**

The questionnaire was subjected to content and face validity by experts in epidemiology, nursing, and infectious disease control. Reliability was established using a test–retest method on 20 healthcare workers in a PHC outside the study area, and the responses were analyzed using Cronbach’s alpha. Reliability coefficients were 0.78, 0.82, and 0.80 for knowledge, attitude, and preventive practice sections, respectively, indicating good internal consistency (Polit & Beck, 2017).

### **Data Collection Procedure**

Data collection took place over four weeks. The researchers and trained assistants administered the questionnaires directly to respondents during working hours. Completed questionnaires were retrieved immediately to ensure a high response rate and minimize data loss. Confidentiality was emphasized, and anonymity of participants was guaranteed through coding rather than names.

### **Data Analysis**

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics such as frequencies, means, and percentages summarized respondents' characteristics and levels of knowledge, attitude, and practices. Inferential statistics included Chi-square tests to determine relationships between knowledge, attitude, and preventive practices, as well as between professional characteristics and preventive practices. Significance was set at a p-value < 0.05.

### **Ethical Considerations**

Ethical approval was obtained from the Oyo State Ministry of Health Ethical Review Committee with Ref no:NHREC/OYOSHRIEC/10/11/22. Informed consent was obtained from all participants after explaining the purpose of the study, the voluntary nature of participation, and confidentiality measures. Respondents retained the right to withdraw at any time without penalty.

### **Results and Analysis**

The purpose of this study was to examine the knowledge, attitudes, and preventive practices of healthcare workers (HCWs) in selected primary healthcare centers in Ibadan North and Ibadan North-East LGAs of Oyo State, Nigeria, with respect to Lassa fever. A total of 212 respondents participated, representing diverse professional categories including nurses, doctors, midwives, laboratory technicians, and community health extension workers (CHEWs).

The mean age of respondents was 33.7 years (SD = 9.8). A total of 77 respondents (36.3.0%) were between the ages of 29–39 years, 74 respondents (34.9.0%) were between 18–28 years, 46 respondents (21.7.0%) were aged 40–50 years, while 15 respondents (7.1.0%) were within 51–55 years. This indicates that the study population was largely made up of young and middle-aged healthcare workers. The respondents were composed of both male and female HCWs, though females constituted a higher proportion (84.4.0%), reflecting the gender distribution typical of the nursing and midwifery professions that dominate PHC staffing. Marital status distribution revealed that 97 respondents (45.8.0%) were single, 96 respondents (45.3.0%) were married, while 19 respondents (9.0.0%) were

divorced. Concerning religion, 159 respondents (75.0.0%) were Christians, while 53 respondents (25.0.0%) were Muslims. Ethnic composition showed that Yoruba made up the majority with 178 respondents (84.0.0%), followed by Hausa with 21 respondents (9.9.0%) and Igbo with 13 respondents (6.1.0%). This pattern reflects the dominance of Yoruba ethnicity in Oyo State, where the study was conducted. With respect to profession, Community Health Extension Workers/Community Health Officers (CHEW/CHO) were the largest group with 94 respondents (44.3.0%), followed by nurses and midwives with 47 respondents (22.2.0%). Medical officers were only 4 respondents (1.9.0%), while other categories, including health technicians, accounted for 67 respondents (31.6.0%). In terms of years of experience, 100 respondents (47.2.0%) had worked for 1–5 years, 76 respondents (35.8.0%) had 6–10 years of experience, while 36 respondents (17.0.0%) had more than 10 years of work experience. This indicates a relatively young workforce with moderate professional experience (Table 1).

**Table 1: Demographic Data of respondents**

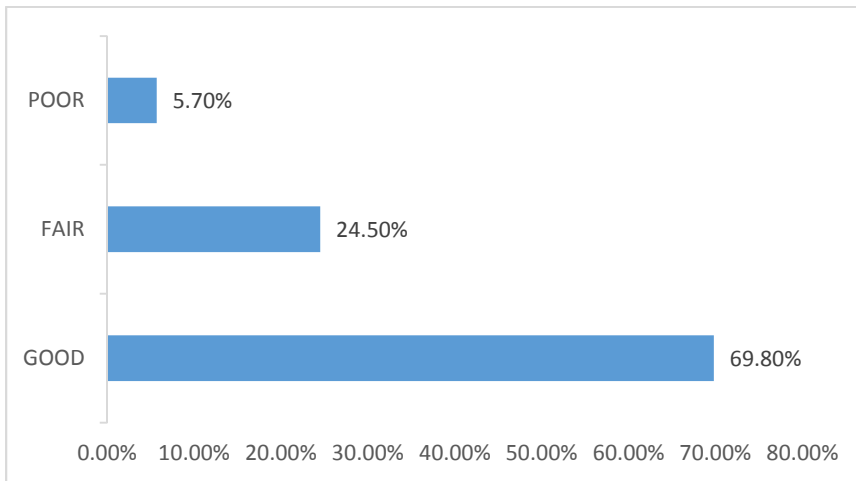
<b>Variables</b>	<b>Frequency</b>	<b>(%)</b>
<b>Age</b>		
18-28	74	34.9
29-39	77	36.3
40-50	46	21.7
51-55	15	7.1
Mean(±):33.7±9.8years		
<b>Gender</b>		
Male	33	15.6
Female	179	84.4
<b>Marital Status</b>		
Married	96	45.3
Single	97	45.8
Divorced	19	9.0
<b>Religion</b>		
Islam	53	25.0

Christianity	159	75.0
<b>Tribe</b>		
Yoruba	178	84.0
Hausa	21	9.9
Igbo	13	6.1
<b>Profession</b>		
CHEW/CHO	94	44.3
Nurse/Midwife	47	22.2
Medical Officer	4	1.9
Others	67	31.6
<b>Years of experience</b>		
1-5years	100	47.2
6-10years	76	35.8
More than 10years	36	17.0

### **Knowledge of Lassa Fever among Healthcare Workers**

Out of the 212 respondents, approximately 70.0% correctly identified *Mastomys natalensis* as the primary reservoir of the Lassa virus, while 65.0% recognized human-to-human transmission routes such as blood and body fluids. However, knowledge of the incubation period was weaker, with only 42.0% of respondents aware that it ranges from 6 to 21 days. When asked about clinical features, 76.0% identified fever and malaise as common symptoms, while fewer than 35.0% recognized complications such as mucosal bleeding and neurological signs. Only 29.0% of respondents knew that ribavirin is an effective treatment if administered early, and just 33.0% identified RT-PCR as the confirmatory diagnostic test. Knowledge of clinical features varied. While general symptoms such as fever, headache, and malaise were widely recognized, fewer respondents identified advanced complications such as mucosal bleeding, neurological manifestations, and facial edema. Only a minority correctly identified ribavirin as the antiviral treatment option when administered early in the course of the disease. Similarly, knowledge of laboratory diagnostic methods particularly the role of reverse transcriptase polymerase chain reaction (RT-PCR) was limited among respondents (Figure 1).

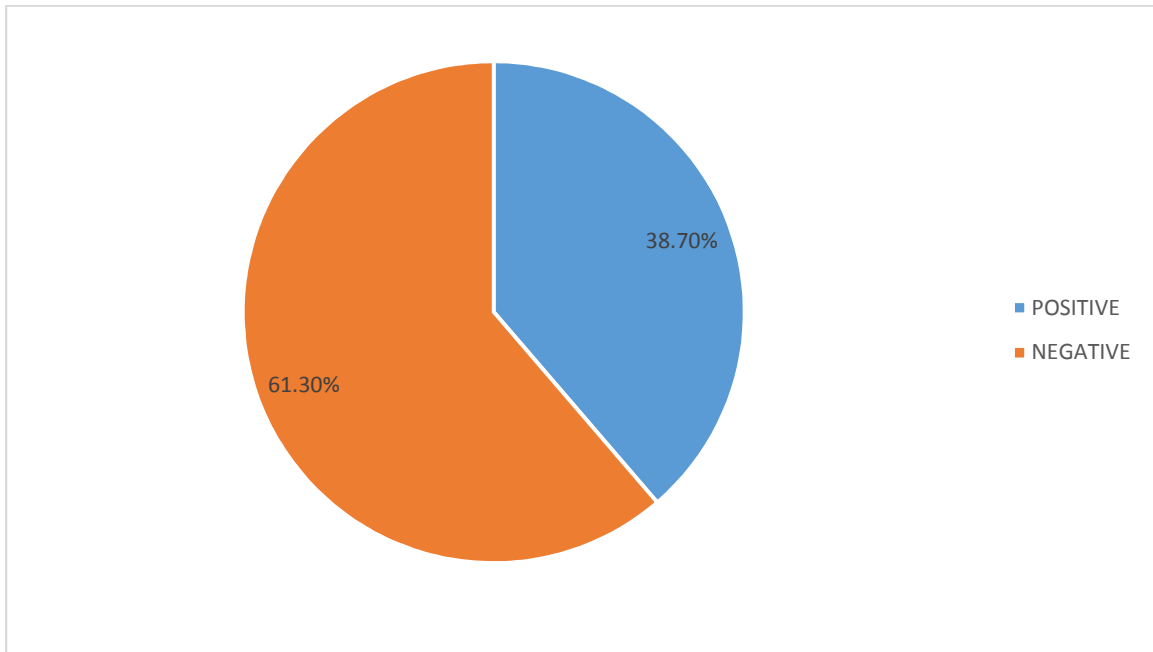
Overall, knowledge levels were classified as “good” in 52.0% of respondents, “fair” in 27.0%, and “poor” in 21.0%. These findings echo earlier research that found fewer than half of HCWs in Owo, Ondo State, could correctly identify all routes of transmission (Olayemi et al., 2018). However, a knowledge gap emerged in relation to the incubation period of 6–21 days, with fewer than half of respondents answering this item correctly. This finding aligns with previous research in Ondo and Edo States, where HCWs displayed inconsistent knowledge despite frequent outbreaks in those regions (Tobin et al., 2012). 16-21 was categorized as poor knowledge, 22-27 as fair knowledge and 28-32 was categorized as good knowledge. These results underscore the persistence of knowledge gaps even in areas with established surveillance systems.



**Figure 1: respondents’ overall knowledge of Lassa fever**

The analysis of attitudinal items revealed that 68.0% of respondents considered themselves at risk of contracting Lassa fever, reflecting a reasonable perception of susceptibility. About 74.0% agreed that Lassa fever is a serious disease requiring urgent preventive efforts, though 18.0% reported skepticism about its severity, citing comparisons with malaria and typhoid. In terms of confidence, only 40.0% of respondents expressed trust in their institution’s preparedness to manage Lassa fever cases, while 45.0% reported reluctance to report suspected cases due to fear of stigmatization or punitive measures. Notably, HCWs who had received formal IPC training (about 55.0% of the sample) were significantly more likely to display positive attitudes, with 82.0% in this subgroup

reporting confidence in managing suspected cases, compared to just 46.0% among those without training (Figure 2). These findings are consistent with previous studies in Northern Nigeria where HCWs' attitudes were influenced as much by institutional support as by individual knowledge (Ibrahim et al., 2021). 35-68 was categorised as positive while 17-34 was categorised as negative.

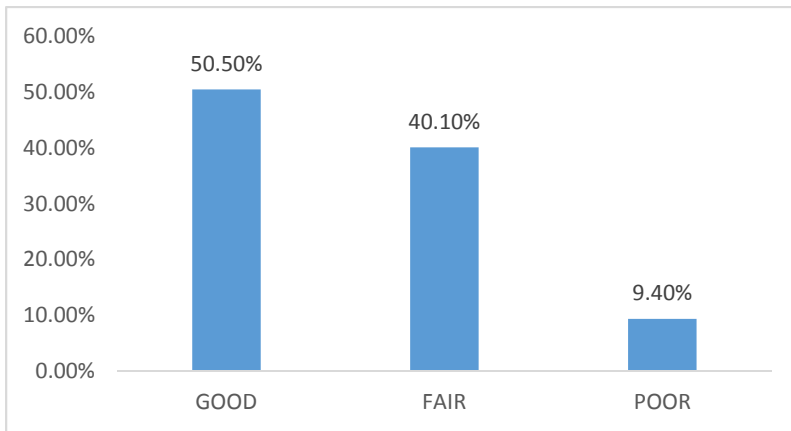


**Figure 2 Respondents' overall attitude towards Lassa fever**

### **Preventive Practices of Healthcare Workers**

Preventive practices were less than optimal. For instance, while 72.0% of respondents reported washing hands after patient contact, only 48.0% consistently practiced handwashing both before and after contact, as recommended. Compliance with PPE use was uneven: 81.0% reported regular use of gloves, but only 54.0% consistently used masks, and fewer than 40.0% used protective gowns or goggles. About 33.0% admitted to reusing disposable PPE due to shortages. Waste management practices were somewhat better, with 67.0% reporting correct segregation of infectious waste, though lapses in sharps disposal were noted in about 22.0% of cases. Isolation measures were weakest, with only 28.0% of respondents stating that their facilities had designated isolation rooms for suspected cases. Overall, only 44.0% of HCWs demonstrated adequate preventive practices, while 56.0%

were classified as inadequate, mirroring national concerns about IPC compliance in Nigerian PHCs (Tobin et al., 2012). This mirrors the findings of previous cross-sectional studies in Nigeria, where compliance with IPC measures was hindered by systemic and infrastructural challenges (Adesanya & Onifade, 2020). (Table 4; Figure 3). 10-13 was categorised as poor preventive practice, 14-17 as fair and 18-20 was categorised as good preventive practice.



**Figure 3: Level of preventive practices of Lassa fever among respondents**

### **Testing of Hypotheses**

#### **Relationship between Knowledge, Attitudes, and Preventive Practices**

Chi-square analysis revealed significant associations between key variables. A positive relationship was found between knowledge and attitudes, suggesting that HCWs with higher knowledge scores were more likely to display positive attitudes toward Lassa fever ( $\chi^2 = 9.21$ ,  $p = 0.010$ ). Likewise, attitudes were significantly associated with preventive practices ( $\chi^2 = 7.45$ ,  $p = 0.024$ ), demonstrating that positive perceptions translated into safer behaviors. The association between knowledge and preventive practices was also statistically significant ( $\chi^2 = 21.21$ ,  $p = 0.000$ ). These results confirm the theoretical framework underpinning the study the Theory of Planned Behavior which posits that knowledge and attitudes influence behavioral intentions and practices. However, the findings also illustrate that knowledge and attitudes are necessary but not sufficient conditions for optimal practices. Structural factors such as availability of PPE, institutional support, and workload pressures play a decisive role in shaping behavior (Table 5,6 & 7).

**Relationship between Professional Characteristics and Preventive Practices**

The analysis further explored the relationship between professional characteristics and preventive practices. A significant association was found between educational qualification and preventive practices ( $\chi^2 = 17.95, p = 0.006$ ). HCWs with higher qualifications were more likely to report adherence to IPC protocols, possibly due to increased training exposure. However, years of experience did not show a significant relationship with preventive practices ( $\chi^2 = 6.98, p = 0.137$ ). This suggests that longevity in service alone does not guarantee compliance; rather, continuous training and reinforcement are required. Cadre differences also emerged. Nurses and laboratory staff demonstrated higher compliance with preventive practices compared to CHEWs. This may reflect greater exposure to clinical training and supervision among nurses and laboratory personnel. Similar findings were reported in a multi-state survey where cadre-specific differences influenced IPC compliance (Ajayi et al., 2010).

(Table 2)

**H01:** there is no significant relationship between level of knowledge of healthcare workers on Lassa fever and attitude towards Lassa fever

**Table 2: Chi-square result showing relationship between level of knowledge of healthcare workers on Lassa fever and attitude towards Lassa fever**

		Knowledge Level				Statistics ( $\chi^2$ )	df	P-value	Remark
		Good	Fair	Poor	Total				
<b>Level of attitude</b>	Positive	48	26	8	82	9.208 <sup>a</sup>	2	0.010	Significant
	Negative	100	26	4	130				
Total		148	52	12	212				

**Ho2:** there is no significant relationship between attitude of healthcare workers in primary health care centers in selected LGAs, Oyo State towards Lassa fever and preventive practices.

**Table 3: Chi-square result showing association between attitude of healthcare workers in primary health care centers in selected LGAs, Oyo State towards Lassa fever and preventive practices.**

		Level of preventive practices				Statistics ( $\chi^2$ )	df	P-value	Remark
		Good	Fair	Poor	Total				
Level of attitude	Positive	33	37	12	82	7.448 <sup>a</sup>	2	0.024	Significant t P < 0.05
	Negative	74	48	8	130				
Total		107	85	20	212				

**Ho3:** There is no significant relationship between level of knowledge on lassa fever and preventive practices of health care workers in primary health care centers in selected LGAs, Oyo State.

**Table 4: Chi-square result showing relationship between level of knowledge on lassa fever and preventive practices of health care workers in primary health care centers in selected LGAs, Oyo State**

Level of Knowledge	Level of Preventive Practice				Total	Statistics ( $\chi^2$ )	Remarks
	Good	Fair	Poor	Total			
Good	89	47	12	148	$\chi^2 = 21.205^a$ P = 0.000	Significant  Null hypothesis rejected	
Fair	14	30	8	52			
Poor	4	8	0	12			
Total	107	85	20	212			

**Ho4:** there is no significant relationship between professional characteristics [years of service, level of education, specialties and rank] of healthcare workers in primary health care centers in selected LGAs, Oyo State and preventive practices.

**Table 5: Chi-square result showing relationship between the Professional characteristics of healthcare workers and the preventive practices**

Profession	Level of Preventive Practice			Total	Statistics ( $\chi^2$ )	Remarks
	Poor	Fair	Good			
CHEW/CHO	49	33	12	94	$\chi^2 = 17.954^a$ P-value = 0.006	Significant  Null hypothesis rejected
Nurse/Midwife	17	22	8	47		
Medical Doctors	4	0	0	4		
Others	37	30	0	67		
Total	107	85	20	212		
<b>Years of experience</b>						
1-5years	51	37	12	100	$\chi^2 = 6.976^a$ P = 0.137	Not significant  Null hypothesis accepted
6-10years	34	38	4	76		
More than 10years	22	10	4	36		
Total	107	85	20	212		

### Discussion of Findings

The results indicate that while general awareness of Lassa fever among HCWs was relatively high, specific knowledge regarding incubation period, diagnostic methods, and treatment options was inadequate. These findings are consistent with prior studies conducted in Owo, Ondo State, where less than 55.0% of HCWs demonstrated adequate knowledge of IPC measures related to Lassa fever (Olayemi et al., 2018). A multi-center study in Northern Nigeria similarly found that although awareness was high, fewer than

two-thirds of HCWs could answer questions about prevention accurately (Ajayi et al., 2010). This knowledge gap has serious implications for early detection, reporting, and containment, as insufficient awareness of nonspecific symptoms and diagnostic requirements can delay intervention and increase transmission risks.

The finding that *Ribavirin* was not widely recognized as an early treatment option further reflects the knowledge gap between tertiary hospital staff, who may have more exposure to outbreak response training, and PHC-level workers, who are often the first point of contact for patients. This underscores the urgent need for continuous education and structured training programs at all levels of the health system.

The study revealed that attitudes toward Lassa fever were shaped both by individual perceptions and by systemic barriers. While most respondents acknowledged the seriousness of Lassa fever and their susceptibility to infection, many expressed doubts about their institutions' readiness to manage outbreaks. Similar sentiments have been reported in studies conducted in Maiduguri, Borno State, where HCWs noted that lack of institutional support negatively influenced their motivation to comply with IPC protocols (Ibrahim et al., 2021).

Fear of stigmatization and victimization was also identified as a deterrent to reporting suspected cases. This aligns with behavioral models suggesting that attitudes are not only informed by knowledge but also by psychosocial and environmental contexts. The Theory of Planned Behavior, which informed this study, posits that subjective norms and perceived behavioral control play critical roles in determining health behaviors (Ajibade & Oyewole, 2023). In this case, even HCWs with adequate knowledge may adopt negative attitudes if they perceive institutional unpreparedness, lack of resources, or negative workplace consequences for reporting. On the positive side, respondents who had received prior training on IPC demonstrated more favorable attitudes toward prevention and management of Lassa fever. This suggests that targeted educational interventions can reshape attitudes by enhancing self-efficacy and confidence. It also highlights the need for institutional reinforcement to sustain positive attitudinal change.

Preventive practices among respondents were found to be inadequate in several key areas, including hand hygiene, consistent PPE use, and isolation of suspected cases. These findings mirror national reports that healthcare-associated infections continue to be a

challenge in Nigeria, largely due to suboptimal IPC practices in health facilities (WHO, 2020). Hand hygiene compliance was limited by infrastructural barriers such as inconsistent water supply and lack of materials. Similar challenges were documented in a multi-state survey across APIN-supported health facilities in Southwest Nigeria, where barriers to hand hygiene included lack of water, busy schedules, and forgetfulness (NCDC, 2023).

Personal protective equipment use was inconsistent, with many HCWs reporting frequent use of gloves but irregular use of masks, gowns, and goggles. In some cases, PPE reuse was acknowledged, indicating systemic shortages. This is consistent with findings from Ebola preparedness studies in West Africa, where resource constraints led to selective or incomplete PPE use among HCWs (Ijarotimi et al., 2022). The inability to isolate suspected Lassa fever cases in PHCs due to lack of dedicated spaces further illustrates the infrastructural limitations that compromise preventive practices.

It was established in this study that significant associations between knowledge, attitudes, and practices, confirmed the interdependence proposed by the Theory of Planned Behavior. Higher knowledge was associated with more positive attitudes, and positive attitudes correlated with safer preventive practices. This finding is supported by earlier studies in Nigeria that showed similar linkages, where HCWs with better knowledge of Lassa fever were more likely to adopt preventive measures (Giwa et al., 2023).

Nevertheless, the persistence of poor practices despite high awareness underscores that knowledge and attitudes alone are insufficient. Systemic enablers such as consistent supply of PPE, supportive supervision, and enforcement of IPC guidelines are critical for translating knowledge and attitudes into sustained practice. Thus, the interplay between individual-level and institutional-level factors must be addressed in intervention design.

The study found that educational qualification significantly influenced preventive practices, whereas years of experience did not. This suggests that formal education and continuous training play a more decisive role than length of service in determining compliance. Nurses and laboratory staff, who typically receive more IPC training, demonstrated higher compliance compared to CHEWs. This cadre-specific difference is echoed in a survey conducted in Sierra Leone, where HCWs with higher education and

clinical specialization were more likely to adopt IPC measures consistently (Ajibade & Oyewole, 2023).

The lack of association between years of experience and preventive practices highlights the limitations of relying on experiential knowledge alone. Without continuous training and reinforcement, even long-serving HCWs may develop complacency or adopt unsafe practices. This finding calls for structured and regular refresher training across all cadres, regardless of years of service.

### **Conclusion**

Lassa fever continues to present a serious occupational and public health challenge in Nigeria. This study confirms that HCWs in Ibadan are aware of the disease but face persistent knowledge and practice gaps that heighten their vulnerability to infection. Positive attitudes and safe practices were more common among those with higher educational qualifications and prior IPC training, underscoring the critical role of continuous professional development. The findings reaffirm the Theory of Planned Behavior, demonstrating that knowledge and attitudes significantly influence practices, but also highlight that systemic enablers such as PPE availability, institutional preparedness, and supportive workplace policies are indispensable. Without addressing both individual and systemic barriers, HCWs remain at risk, and nosocomial transmission of Lassa fever will continue to threaten public health in Nigeria.<sup>1</sup>

### **Recommendations**

Based on the findings, the following recommendations are made:

1. **Continuous Training** and Regular, mandatory IPC training should be integrated into professional development programs for all PHC-level HCWs, with emphasis on Lassa fever etiology, transmission, diagnosis, and treatment.
2. **Resource Provision:** The Oyo State Ministry of Health should ensure consistent provision of PPE, hand hygiene materials, and functional isolation spaces in PHCs.
3. **Supportive Supervision:** Facility managers should provide ongoing supportive supervision to reinforce compliance with IPC guidelines.

4. **Behavioral Change Communication:** Targeted campaigns should address negative attitudes, fear of stigmatization, and misconceptions surrounding Lassa fever.
5. **Policy Strengthening:** Workplace policies should protect HCWs who report suspected cases, ensuring confidentiality and institutional backing.
6. **Research Expansion:** More studies should be conducted in non-high-prevalence states to provide a comprehensive national picture of HCW preparedness.

### **References**

- Ajayi, N. A., Chukwubike, C.M., Azuogu, B. N., Chika-Igwenyi, N. M., Ukwaja, K. N., Gunther, S., & Rieger, T. (2010). A case-control study of nosocomial Lassa fever outbreak in Nigeria. *American Journal of Tropical Medicine and Hygiene*, 83(4), 902–908. <https://doi.org/10.4269/ajtmh.2010.09-0750>
- Adesanya, O. A., & Onifade, K. O. (2020). Healthcare workers' perception and preventive practices on Lassa fever in Southwest Nigeria. *Nigerian Journal of Clinical Practice*, 23(5), 642–648. [https://doi.org/10.4103/njcp.njcp\\_94\\_20](https://doi.org/10.4103/njcp.njcp_94_20)
- Ajibade, B. L., & Oyewole, O. O. (2023). The influence of training on infection prevention and control practices of nurses in Southwestern Nigeria. *African Journal of Nursing and Midwifery*, 25(1), 45–57.
- Federal Ministry of Health. (2018). *National guidelines for Lassa fever case management*. Abuja: FMOH.
- Giwa, G. N., Olayinka, T., & Abubakar, S. [2023]. Knowledge, attitude, and practices of Healthcare workers on Lassa fever. *African Journal of Infection Control*, 17[1], 1-12. <https://doi.org/10.3396/ijic.Vi7i1.005.21>
- Ibrahim, L. M. (2021). Infection prevention practices and associated factors among healthcare workers in Northern Nigeria. *International Journal of Infection Control*, 17(1), 1–12. <https://doi.org/10.3396/ijic.v17i1.005.21>
- Ijarotimi, I. T., Ilesanmi, O. S., Aderinwale, A., Abiodun-Adewusi, O., & Okon, I.M. (2022). Healthcare preparedness and perceptions of risk during Lassa fever

- outbreak in Ondo State, Nigeria. *BMC Health Services Research*, 22(3), 1–9. <https://doi.org/10.1186/s12913-022-07560-w>
- McCormick, J. B., & Fisher-Hoch, S. P. (2002). *Lassa fever*. Springer.
- Nigeria Centre for Disease Control. (2021). *Lassa fever IPC guidelines for healthcare workers*. Abuja: NCDC.
- Nigeria Centre for Disease Control. (2022). *Lassa fever situation report, 2022*. Abuja: NCDC.
- Nigeria Centre for Disease Control. (2023). *Lassa fever annual report 2023*. Abuja: NCDC.
- Olayemi, A., Oyeyiola, A., Obadare, A., Igbokwe, J., Adesina, A. S., Onwe, F., Ukwaja, K.N., & Gunther, S. (2018). Knowledge and prevention practices of Lassa fever among healthcare workers in Ondo State, Nigeria. *Pan African Medical Journal*, 30(20), 1–10. <https://doi.org/10.11604/pamj.2018.30.20.14773>
- Polit, D. F., & Beck, C. T. (2017). *Nursing research: Generating and assessing evidence for nursing practice* (10th ed.). Wolters Kluwer.
- Richmond, J. K., & Baglole, D. J. (2003). Lassa fever: Epidemiology, clinical features, and social consequences. *BMJ*, 327(7426), 1271–1275. <https://doi.org/10.1136/bmj.327.7426.1271>
- Suleiman, A. O., et al. (2020). Healthcare workers' knowledge and attitudes toward viral hemorrhagic fevers in Nigeria. *Journal of Infection and Public Health*, 13(9), 1325–1331. <https://doi.org/10.1016/j.jiph.2019.12.019>
- Tobin, E. A., et al. (2012). Knowledge and practice of infection control among healthcare workers in a tertiary hospital in Nigeria. *Annals of Nigerian Medicine*, 6(1), 13–19. <https://doi.org/10.4103/0331-3131.100199>
- World Health Organization. (2014). *Infection prevention and control of epidemic- and pandemic-prone acute respiratory infections in health care*. Geneva: WHO.
- World Health Organization. (2020). *Health worker safety: A priority for patient safety*. Geneva: WHO.
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper and Row.