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Research Article

Knowledge on Lassa Fever among Primary Health Care workers in Oka-Akoko, Akoko South West Local Government Area, Ondo State Nigeria

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ABSTRACT

Background: This research work was carried out at Oka-Akoko, the Headquarters of Akoko South West Local Government Area of Ondo State and its objective is to evaluate the Knowledge on Lassa fever among Primary Health Care workers in Oka-Akoko, Akoko South West Local Government Area, Ondo State Nigeria.

Methods: The study design adopted for this work was based on cross sectional descriptive study. The Primary Health Care workers working in government owned Primary Health Care facilities in Oka – Akoko are the study population. Questionnaire was used for the purpose of data collection from the respondents for the investigation. Two hundred and seventy three (273) respondents were selected as a sample size for the study and 250 questionnaires were returned.

Result: The mean age of respondents was 35.67 years and 103 (41.2%) have been working for almost 20 years. Half of the respondents 126 (50.4%) agreed that they have attended training or sensitization workshop on Lassa Fever and 162 (64.8%) said that Lassa Fever is a common deadly disease while 156 (62.4%) claimed that Lassa fever is an acute Viral Hemorrhagic illness. Larger percent 218 (87.2%) of the respondents agreed that the direct contact with urine or feaces of infected rats (through food, drinks and touch) is the mode transmission. Also, high proportion 212 (84.8%) claimed that fever, malaise, headache, muscle pain, vomiting and diarrhea as the signs and symptoms of lassa fever.

Conclusion: All the tested variables against overall knowledge on Lassa fever were not significantly associated with the respondents knowledge on lassa fever with p value>0.05.

Keywords: Lassa fever; Primary Healthcare; Oka-Akoko

INTRODUCTION

Lassa fever belongs to the family Arenavividae, a single strain RNA virus. It is zoonotic or animal-borne diseases that cause an acute viral hemorrhagic illness (bleeding). The first case of the disease in Nigeria was reported in 1969 and resulted to the death of two missionary nurses [1-3]. The virus was named after a town in Borno State where it originated. Presently, it is endemic in West Africa (Sierra Leone, Liberia, Guinea and Nigeria) while other neighboring countries are prone to Multimammate rat, the causative agent (animal vector).

A traveler living in Southern Mali was reported to be infected with lassa virus in 2009 and a case was also reported in late 2011 in Ghana. Isolated cases have also been reported in Cote d' Ivoire, Burkina-Faso,Togo and Benin [4-6]. Annually, 100,000 to 300,000 cases are reported in West Africa and approximately 5, 000 death [7].

The symptoms of lava fever include fever, weakness, headaches, vomiting and muscle pains [8]. In 2006, WHO reported that bleeding from the mouth or gastro-intestinal tract is also a symptom in some cases. It resulted to death within two weeks of

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being infected if appropriate medical care is not given and some of those who survived the infection may later develop deafness [9]. Lassa fever occurs more often during dry season [8].

Lassa fever can be controlled by preventing contact with rat, storing food in sealed containers and having a predator (cat) to rat. Isolation of the infected people is highly important, to prevent the spreading of the disease [9]. Purushotham et al., reviewed that there is no current approved vaccine against lassa virus but numerous researchers have developed vaccine used at the level of animal model, only a researcher has advanced to clinical trials [10]. The knowledge about a disease is very crucial in prevention and control strategies. Therefore the aim of this study is to assess the knowledge on lassa fever among primary health care workers in Oka-Akoko, Akoko South West Local Government Area, Ondo State Nigeria.

MATERIALS AND METHODS

Description of the study area

This research work was carried out at Oka-Akoko, the Headquarters of Akoko South West Local Government Area of Ondo State. It is situated in the Northern Senatorial District of the State and covers an area of approximately 1,450 square kilometers. It estimated population is 18,000 people, comprises Yoruba, Hausa, Igbo, Fulani and other tribes. Their major occupations are farming, fishing, trading, civil service jobs, artisans, etc.

Study design

The study design adopted for this research work was based on cross sectional descriptive study. This was conducted to test hypothesis or provide answers for questions asked on the knowledge of Lassa fever among Primary Health Care workers in Oka – Akoko, Ondo State, Nigeria.

Study population

The Primary Health Care workers working in government owned Primary Health Care facilities in Oka – Akoko are the study population. These include; Doctors, Nurses/Mid – wives, Community Health workers (e.g. CHOs, CHEW, Health Assistants, Health Educators), Pharmacy Technicians, Health Information Management Technicians, Dental Health Technicians and Laboratory Technicians, etc. The Primary Health Care facilities used for the study include; Primary Health Centres, Maternity Centres, Comprehensive Health Centres, Basic Health Centres and Health Posts within Oka – Akoko, Akoko South West Local Government Area of Ondo State.

Sample size determination

The Leslie Fischer's formula for population less than 10,000 will be used.

Where

NF-Desired sample size when population is less than 10,000

n=Desired sample size when population is more than 10,000

N=Estimated population size

Where

Z=Normal deviate of 90% confidence interval

P=Prevalence from previous similar study, taken as 22.8%=0.228

q=1-p=1 – 0.228=0.772

d=0.05, with level of significance set at 0.05

=248.1651

=248

At 10% non-response rate is anticipated, therefore the adjusted sample size is 273. Two hundred and seventy three (273) would be selected as samples for the study.

Sampling techniques

The study population consists of different professional cadres, e.g. Doctors, Nurses/Midwives, Community Health workers, etc.; hence we have to adopt stratified random sampling first in order to get a good representation of each professional cadre and then use simple random sampling technique to select samples from each professional cadre thereafter.

Research instrument

The researcher designed a questionnaire for the purpose of data collection from the respondent for the investigation. The sections of the questionnaire include:

Section A: Demographic information about the respondents.

Section B: Knowledge about Lassa fever among the health workers.

Validity and pretesting of research instrument

The first draft of the questionnaire was given to the project supervisor for correction. This is to make sure that, the instrument measures what it supposes to measure, i.e. to be precise in whatever it measures. To pretest the questionnaire, twenty (20) copies of questionnaires were firstly produced and administered to Primary Health Care workers in another Local Government Area of the State but of the same characteristics and strength with the study population. The questionnaires were collected back, analyzed and found to be okay for the study. This is to make sure that, the instrument is consistent in what it measures.

Data collection

Two hundred and seventy three (273) copies of questionnaire were finally produced and randomly distributed to Primary Health Care workers working in various selected Primary Health Care facilities in Oka – Akoko, Ondo State using both stratified random and simple random sampling techniques. The questionnaires were self – administered, with the help of research assistants and guidance of the supervisor. In all, two hundred and fifty (250) copies of the questionnaire were returned and ready for statistical analysis in chapter four.

Methods of data analysis

The returned questionnaires were manually sorted out into different categories and the coded variables entered into a computer and obtained data were analyzed using Statistical Package for the Social Sciences (SPSS) version 22. Frequency distribution tables were generated from variables and cross tabulation with statistical tests were carried out where applicable using Chi-square test for comparism of rates, ratios and proportions while the Fische's exact test were used when cells have expected value less than five (5). The level of significance was set at $p<0.05$.

Ethical considerations

Letter of ethical clearance was obtained from the Medical Officer of Health, Akoko South West Local Government Area, Oka–Akoko, Ondo–State.

RESULTS

Table 1 shows the socio-demographic characteristics of respondents, the mean age of respondents was 35.67 years. Majority 181 (72.4%) were female and 191(76.4%) of them were married while 119 (47.6%) were community health extension workers. More than half 169 (67.6%) of them were Christians and 81 (32.4%) were Muslim while 103(41.2%) have been working for almost 20 years.

Table 1: Sociodemographic characteristics of respondents (N=250).

Variables	Frequency (n)	Percentage (%)
Age (years)		
15-24	48	19.2
25-34	84	33.6
35-44	85	34
>45	33	13.2
Sex		
Male	69	27.6
Female	181	72.4
Marital status		
Single	32	12.8
Married	191	76.4
Separated	10	4
Divorced	6	2.4
Widowed	11	4.4
Designation		
Medical Doctor	1	0.4
Nurse/midwife	28	11.2
Laboratory scientist/laboratory technician	27	10.8
Community health worker	119	47.6
Pharmacist/pharmacy technician	38	15.2
Health record technician	37	14.8
Religion		
Christianity	169	67.6
Islam	81	32.4
Working experience (years)		
1-10	53	21.2
11-20	103	41.2
21-30	67	26.8
>31	27	10.8

The respondents' knowledge on Lassa fever was shown on Table 2. It shows that 126 (50.4%) of the respondents agreed that they have attended training or sensitization workshop on Lassa Fever and 162(64.8%) said that Lassa Fever is a common deadly disease while 156(62.4%) claimed that Lassa fever is an acute Viral Hemorrhagic illness. However, 159 (63.6%) of the respondents agreed that rat is the main reservoir of the causative agent of Lassa fever while 150 (60.0%) of the studied population disagreed that Bat, Monkey, Mosquito and Fly are also reservoirs of the causative agent of Lassa fever.

Table 2: Respondents knowledge on lassa fever (N=250).

Variables	Agree	Neutral	Disagree
You have attended training or sensitization workshop on Lassa Fever before	126 (50.4)	24 (9.6)	100 (40.0)
Lassa Fever is a common deadly disease	162 (64.8)	35 (14.0)	53 (21.2)

It is an acute Viral Hemorrhagic illness	156 (62.4)	32 (12.8)	62 (24.8)
Causative agent of Lassa Fever is Lassa Virus.	162 (64.8)	33 (13.2)	55 (22.0)
The reservoir of the causative agent of Lassa Fever is rat	159 (63.6)	28 (11.2)	63 (25.2)
Bat, Monkey, Mosquito and Fly are also reservoirs of the causative agent of Lassa Fever.	13 (5.2)	87 (34.8)	150 (60.0)

Table 3 shows the respondents' knowledge on the modes of transmission or spread of lassa fever. Larger percent 218 (87.2%) of the respondents agreed that the direct contact with urine or feaces of infected rats (through food, drinks and touch) and 193 (77.2%) agreed that it can be transmitted through the direct contact with blood, urine or feaces of infected person while 201(80.4%) agreed that Lassa Fever can be transmitted through the use of contaminated and unsterilized medical equipment, such as re-used needle, etc.

Table 3: Respondents knowledge on the modes of transmission or spread of lassa fever.

Variables	Agree	Neutral	Disagree
Lassa Fever can be transmitted in the following ways:			
Direct contact with urine or feaces of infected rats (through food, drinks and touch)	218 (87.2)	11 (4.4)	21 (8.4)
Through direct contact with the blood, urine, faeces or other bodily secretions of a person with Lassa Fever	193 (77.2)	25 (10.0)	32 (12.8)
Sexual transmission of Lassa Virus has been reported	203 (81.2)	17 (6.8)	30 (12.0)
Lassa Fever can be transmitted through the use of contaminated and unsterilized medical equipment, such as re-used needle, etc.	201 (80.4)	23 (9.2)	26 (10.4)

Table 4 revealed the respondents' knowledge on the common signs and symptoms of lassa fever. This shows that high proportion 212 (84.8%) claimed that fever, malaise, headache, muscle pain, vomiting and diarrhea as the signs and symptoms of lassa fever while 226 (90.4%) claimed Hemorrhagic Sign, pharyngitis and maculo–papular are also signs and symptoms of lassa fever.

Table 4: Respondents knowledge on the common signs and symptoms of lassa fever.

Variables	Agree	Neutral	Disagree
The signs and symptoms of Lassa Fever include; fever, malaise, headache, muscle pain, vomiting and diarrhea.	212 (84.8)	17 (6.8)	21 (8.4)
Hemorrhagic Sign, pharyngitis and maculo – papular are also signs and symptoms of Lassa Fever.	226 (90.4)	10 (4.0)	14 (5.6)

The respondents' knowledge on the treatment of lassa fever was shown on Table 5. It shows that 216 (86.4%) of the respondents stated that there is no vaccine for lassa fever and 229 (91.6%) agreed that Lassa fever is curable while 219 (87.6%) claimed that Lassa Fever could be effectively treated using appropriate drugs. More than half 190 (76.0%) stated that replacement of electrolyte body fluid loss is effective for the management of lassa fever.

Table 5: Respondents knowledge on the treatment of Lassa fever (N=250)

Variables	Agree	Neutral	Disagree
There is no vaccine for Lassa Fever	216 (86.4)	28 (11.2)	6 (2.4)
Lassa Fever is curable	229 (91.6)	12 (4.8)	9 (3.6)

Lassa Fever could be effectively treated using appropriate drugs	219 (87.6)	26 (10.4)	5 (2.0)
Replacement of electrolyte body fluid loss is effective for the management of Lassa Fever	190 (76.0)	47 (18.8)	13 (5.2)
Lassa Fever treatment drugs could be used for the prevention	190 (76.0)	27 (10.8)	33 (13.2)

Overall respondents' knowledge on Lassa fever shown that more than two-third 178 (71.0%) of the respondents had good knowledge on lassa fever and its prevention while 72 (29%) had poor knowledge. Table 6 shows the association between respondents ' socio-demographic characteristics and overall knowledge on lassa fever. All the tested variables against overall knowledge on Lassa fever were not significantly associated with the respondent's knowledge on lassa fever with p value>0.05.

Table 6: Association between respondents' socio-demographic characteristics and overall knowledge on Lassa fever.

Variables	Overall knowledge on lassa fever		X2	df	p value
	Good knowledge	Poor knowledge			
Age (years)					
15-24	35(72.9)	13(27.1)	0.69	3	0.876
25-34	57(67.9)	27(32.1)			
35-44	62(72.9)	23(27.1)			
>45	24(72.7)	9(27.3)			
Sex					
Male	49(71.0)	20(29.0)	0.002	1	0.968
Female	129(71.3)	52(28.7)			
Marital status					
Single	23(71.9)	9(28.1)	2.303	4	0.68
Married	136(71.2)	55(28.8)			
Separated	8(80.0)	2(20.0)			
Divorced	5(83.3)	1(16.7)			
Widowed	6(54.5)	5(45.5)			
Designation					
Medical Doctor	1(100.0)	0(0.0)	4.546	5	0.474
Nurse/midwife	18(64.3)	10(35.7)			
Laboratory scientist/ laboratory technician	19(70.4)	8(29.6)			
Community health worker	88(73.9)	31(26.1)			
Pharmacist/pharmacy technician	23(60.5)	15(39.5)			
Health record technician	29(78.4)	8(21.6)			

Religion					
Christianity	118(69.8)	51(30.2)	0.483	1	0.487
Islam	60(74.1)	21(25.9)			
Working experience (years)					
1-10	40(75.5)	13(24.5)	2.654	3	0.448
11-20	71(68.9)	32(31.1)			
21-30	45(67.2)	22(32.8)			
>31	22(81.5)	5(18.5)			

*Statically Significant<0.05

DISCUSSION

In public health, health worker's knowledge about a disease is very crucial in prevention and control strategies. Awareness, patient counseling and community campaigns can only be done if health workers are adequately informed of the disease. In this study, gender of health worker is not significantly related to knowledge about lassa fever, though there was greater number of female to male workers recorded. This is a reflection of the fact that female take on health profession like nurses, midwife and auxiliaries nurse in Nigeria than male [11].

The study showed that more than half of the health workers assessed have good knowledge about the disease. Having good knowledge about a particular disease among health workers has also being reported by Hidiroglu et al. in which over 68% of 144 health workers in Turkey have good knowledge of Dengue and Primary care Physicians in Singapore were found to have adequate knowledge of Dengue fever [12,13]. In contrast, Tobi et al. recorded overall knowledge of Lassa fever among health care providers in Edo State to be poor for 51 (38.9%), and fair for 54 (41.2%) and good for 26 (19.8%). The higher level of knowledge recorded in this study may be due to government intervention in sensitizing the society about the diseases.

Two thirds of the respondents stated that lassa fever is a common deadly disease and the same proportions were of the opinion that it is an acute Viral Hemorrhagic illness, causative agent to be Lassa Virus and reservoir host to be multimammate rat. A study carried out to assess knowledge of Crimean-congo fever among health workers in Iran found a similar picture, with about 64% claimed that Lassa Fever is a common deadly disease and its reservoir of the causative agent is rat, though about 50% had good knowledge of the disease [14].

CONCLUSION

The study revealed a general good knowledge among the health workers with 29% gaps in knowledge. There is need to increase knowledge level among healthcare personnel regarding Lassa Fever, including the housekeeping staff through the provision of education campaigns consisting of seminars, pamphlets and workshops that would pay added attention to bridging gaps in knowledge.

What is already known on this subject: There is an outbreak of lassa fever in some parts of States in Nigeria, in which Ondo State is involve. Government is making a necessary intervention program to prevent and eradicate the disease.

What this study adds: This study had accessed the effectiveness of government intervention in creating awareness and educating the society, especially health workers about the disease. The outcome of the study revealed that not all health workers are yet to have full knowledge about the disease. The knowledge of health workers about the disease is not significant affected by their socio-demographic status.

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