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Garri processors and marketers' knowledge of Lassa fever safety practices in Edo State, Nigeria

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ABSTRACT

The study was conducted to examine the knowledge of Lassa fever safety practices among garri processors and marketers in Edo State, Nigeria. A multi-stage sampling procedure was used to select 224 marketers and 192 processors, using a structured questionnaire and interview schedule. Data collected were described with the use of frequency counts, mean, and percentages while binary logistic regression was used to identify determinants of knowledge of safety practices and made some inferences. Results showed that regular elimination of rats (54.0% and 54.7%) and maintenance of personal hygiene (53.1% and 89.6%) were the safety practices highly known by the marketers and processors of garri, respectively and the overall level of knowledge of Lassa fever safety practices among respondents was rated low with 63.6% and 54.5%, of marketers and processors, respectively. It was established that age (wald = 4.720), marketing experience (wald = 4.288), level of education (wald = 2.512), household size (wald = 3.052) and income from garri (wald = 3.237) were the significant determinants of the level of knowledge among garri marketers while marital status (wald = 4.464) and income (wald = 3.483) significantly determined the knowledge level of the processors. The findings conclude that both garri marketers and processors recorded a low level of knowledge of Lassa fever safety practices in the study area. It is, therefore, recommended that intense publicity and campaigns against Lassa fever should be carried out for processors and marketers of garri in the study area. This will sustainably reduce the spread of Lassa fever by the stakeholders in the Ministry of Health and other allied ministries and agencies to sustainably control the outbreak of this disease.

HIGHLIGHTS

- Regular rat control and personal hygiene prevent Lassa fever spread
- Respondents had high knowledge of Lassa fever safety practices.
- Marketers' knowledge of Lassa fever prevention varies with age, experience, education, etc.
- Marital status and income influenced knowledge on Lassa fever precautions.

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1. Introduction

Lassa fever was first reported in Nigeria in a village in the present Borno State in 1969 and was named after the village (Akpede et al., 2018). It is an infection that could be described as an acute hemorrhagic illness (Thairu & Egenti, 2015). It is one of the deadly pestilences that have plagued humanity and it is still much with us in Nigeria, particularly in places with poor sanitation.

The host of the Lassa virus is a rodent *Mastomys natalensis* known as the "multimammate rat" (Ekuma & Akpa, 2017), humans tend to become infected with Lassa Fever Virus (LASV) through exposure to food or household items contaminated with the urine or faeces of infected Mastomys rats (World Health Organisation (WHO), 2018). There have been numerous outbreaks since its discovery in Nigeria and repeated outbreaks notably in other West African countries like Sierra Leone, Liberia, Togo, and the Republic of Benin as well as in Europe and America (Ogbu et al., (2007). In West Africa alone, up to 3-5 million cases of infection are reported annually (Rine and Gyar, 2016).

Nigeria is a country in West Africa that is popularly addressed as the giant of Africa because of its population and other economic indices. However, within the last 8 years, Nigeria has been experiencing a Lassa fever epidemic involving 19 states where Edo and Ondo States are the ones with the highest number of infected cases in the southern Nigeria (Usifoh et al., 2018). Particularly, between 2016 and 2020, there were about 2787 confirmed cases of Lassa fever in Nigeria alone, and 516 fatalities were reported across 36 States (Nigeria Centre for Disease Control. Diseases [NCDC], 2020).

It has also been reported that in 2019, Ondo, Edo, and Ebonyi States were ranked 1st, 2nd, and 3rd, respectively, in the number of confirmed cases and deaths of infectious diseases (NCDC, 2020). Also, in Nigeria, 211 laboratory-confirmed Lassa fever cases including 40 death have been cumulatively reported in 14 of the 36 states and the Federal Capital Territory with three states including Ondo, Edo, and Bauchi States accounting for about 82% and Edo State ranking second of the three states with about 57 confirmed cases (WHO, 2022). Additionally, Lassa fever is endemic in 13 out of the 18 Local Government Areas in Edo State (Nigerian Centre for Disease Control [NCDC], 2016). Furthermore, the statistics obtained from the NCDC (2023) reported that over 4,000 new cases of suspected Lassa fever was recorded in 25 states with at least one confirmed case across 99 Local Government Areas", of which 72 per cent of all confirmed cases were reported from Ondo, Edo and Bauchi States (NCDC, 2023). Among the staple and common household food items popularly consumed in Nigeria is garri. Garri is a fermented, roasted, or fried granular starchy food product produced from cassava. It is the most popular form in which cassava is consumed in West Africa. It is estimated that 70% of the cassava produced

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in Nigeria is processed into garri (Orewa and Egware, 2012). Garri was also identified as the major cassava product processed and marketed by marketers in Edo State (Izekor and Alufohai, 2017). However, a lot of the infected persons have been reported to have contracted this deadly virus from the consumption of soaked garri (NCDC, 2020). Certain practices that encourage rodent-human contact are increasing primary transmission in rural areas. A typical instance is the sun-drying of food items such as garri by the roadside where rodents can freely urinate on it. Also, improper covering of foodstuff in tight containers and having contact with the infected persons are the identified common ways in which the disease can spread through direct contact with the infected or asymptomatic persons (Adegoke et al., 2017). However, the only way to eliminate the threat of Lassa fever is to implement proper sanitation and hygiene practices throughout the value chain for safe food handling, packaging, and storage, including garri.

Furthermore, Lassa fever can be controlled by educating the public about the virus's mode of transmission and the importance of proper hygiene particularly among the marketing intermediaries to ensure food safety. Access to reliable, timely, and relevant information sources has become critical to development as the agricultural system has become more complex and the importance of accurate, timely, and reliable information in diverse human activities has been emphasized as one of the best ways to reduce the spread of any disease (NCDC, 2020). However, there is evidence that knowledge of Lassa fever in Nigeria is poor (Tambo et al., 2018).

Consequently, there has been a call for interventions to improve the knowledge of Lassa fever among community members (Obe et al., 2017). This call might have been responsible for the various government interventions such as public awareness on mass media, the use of posters and stickers in places like hospitals and clinics and education of clients in the hospitals by the nurses among others. Also, the government at all levels have designed policies such as washing hands and regular reading of the temperature in public places as means of reducing the spread. Interestingly, treatment of persons infected with the Lassa virus is free in designated government hospitals across the country.

The call by the government for awareness creation is based on the expectation that good knowledge of Lassa fever and its preventive measures could reduce the incidence of the disease (Nwonwu et al., 2017). However, despite the government efforts and policies, the disease is markedly prevalent in rural communities where there is limited access to orthodox medicine, well-trained health officers; and beliefs systems and customs of not believing in science as a result of a high level of ignorance (Wogu, 2018). Therefore, garri processors and marketers will need to adequately equip themselves with the information to ensure that the staple food is safe from contamination that might result in Lassa fever infection.

Therefore, as the search for an effective cure continues unabated, it is necessary to examine the knowledge of the processors and marketers of garri on the safety practices of Lassa fever because of their important position in the cassava value chain in garri production as garri is a major staple food in the state and a major food identified to transmit the Lassa virus to the final consumers.

The study is therefore, designed to examine the knowledge of Lassa fever safety practices among garri processors and marketers in Edo State, Nigeria that would discourage the spread of Lassa fever or otherwise of the virus. Specifically, the study described the socio-economic characteristics of respondents, analysed their level of knowledge, and identified determinants of respondents' knowledge level of safety practices in Lassa fever disease among garri marketers and processors intending to unravel their knowledge level in safety practices that may sustainably control the spread of the epidemic of Lassa virus.

2.0 Methodology

The study was conducted in Edo State, Nigeria and garri processors and marketers who are association members across the three Agro-ecological zones in the State formed the population of the study. The State is an agrarian one with a total land area of 17,802 km2 and an estimated population of over three million people. The State lies roughly between longitude 05^0 04^1 and 06^0 44^1 East of Greenwich Meridian and latitude 05^0 44^1 and 07^0 34^1 North of the Equator. It is bound in the North by Kogi State, in the South by Delta State, in the West by Ondo State, and in the East by Kogi and Anambra States. Administratively, the state is divided into three senatorial districts with 18 Local Government Areas (LGAs). Edo South, Central and North senatorial districts have seven (7), five (5), and six (6) LGAs, respectively.

In selecting representative samples, a multi-stage sampling technique was used with the following stages. First, purposive selection of two (2) LGAs with the intensity of garri processing which invariably informed marketing of such product in each of the 3 Agro-ecological zones based on the preliminary investigation conducted, thus, six (6) LGAs were used. In the second stage, two rural communities with major markets were selected from each of the LGAs to make 12 communities based on the pre-survey conducted. In the third stage, garri processors and marketers' associations were identified in each of the 12 communities and the members' list was obtained through the association executive to know the population of the processors and marketers. Krejcie and Morgan (1970) sample size table was used to select the representative samples from the population of processors and marketers at a 5% confidence interval. This gave a total of 224 and 192, marketers and processors, respectively. In the fourth and final stage, a simple random sampling technique was applied to select 224 and 192 marketers and processors for interviews. During the preliminary investigation, it was observed that most of the marketers and processors are illiterates, therefore, a structured and validated interview schedule was used on the majority with the assistance of trained enumerators and researchers as supervisors while the few literate ones among them were interviewed with the use of a questionnaire. The research instrument was structured into three sections, where section A focused on the socio-economic characteristics of respondents, section B focused on the knowledge of safety practices and section C focused on the variables that influence knowledge of Lassa fever.

Data collected were adequately cleaned through proper inspection to correct erroneous ones and standardized by using appropriate units of measurement and scales for analysis. For example, nominal, ordinal, and interval data were carefully treated and incorporated into the SPSS and Stata analytical software for analysis and the variables were appropriately measured in line with the international standards of measurements such as the Food and Agriculture Organization (FAO) and International Fund for Agricultural Development (IFAD). The socio-economic and knowledge of Lassa fever safety practices variables were described with the use of frequency counts, percentages and mean while determinants of knowledge of safety practices were identified with the use of binary logistic regression model (Equation 1)using SPSS and Stata model. The implicit model was specified in Equation 2.

$$\Pr\left(Y_i = \frac{1}{X} = X_1\right) = L_n\left[\frac{Y_i}{1-Y_i}\right] = a + b_1X_1 + b_2X_2 \ldots b_nX_n + U \quad (1)$$

where $\Pr\left(Y_i = \frac{1}{X} = X_1\right)$ is the probability of Y, a is the coefficient of the constant term, $b_1 - b_n$ are the coefficients of the independent variables(age, sex, years of experience), $X_1 - X_n$ are the independent variables and U_i is the error term.

$$Logit\ Y_i = b_0 + b_1X_1 + b_2X_2 \ldots b_8X_8 \quad (2)$$

where Y_i is the respondents' knowledge level (High = 1, Low = 0), X_1 is sex (Male = 1, Female = 0), X_2 is the age in years, X_3 is marital status (Married=1, otherwise=0), X_4 is the household size (1 if <5, 0 if >5), X_5 is the level of education (1 if educated, 0 if otherwise), X_6 is the experience (years), X_7 is income (Naira) from garri, and X_8 is the source of labour (1 if hired, 0 otherwise).

3.0 Results and Discussion

Socio-economic characteristics of respondents

Describing the demographic features of the sampled respondents gives the basic background knowledge of the respondents and this was used as the basis for making valid deductions in a study. In this study, it was observed that most (62.5%) of the garri marketers sampled were female while only 37.5% were male. This was slightly different in the case of processors where almost equal proportions (54.5% and 45.5%) of the sampled respondents were male and female, respectively. Though, the number of males involved in the processing of garri was slightly higher than that of females. The slightly higher proportion of males in the processing of cassava tubers to garri may be used to imply that cassava processing is a tedious activity like most agricultural activities where women need the assistance of men. The findings of Agada et al. (2018), which reported that approximately 79% of males participated in the processing of cassava into garri in Benue State may be used to buttress the above findings.

The participation of males in cassava processing into garri may indicate the significance of cassava in poverty alleviation, economic growth, and ultimately, food security in Nigeria where cassava is intensively cultivated and processing of cassava into garri is a major household activity (FAO, 2018). In contrast, females dominated the marketing of garri and this is in line with earlier findings of Agada et al (2018) that reported that females were found more in the sales of garri (96.7%), grading (93.3%), standardization of measurement (93.3%), among others while males participated more in assembling produce (85%). However, a report from Ogunyinka and Oguntuase (2020) contradicted this as male-headed households (67%) dominated the cassava value chain where garri is a major product in Southwestern Nigeria. The geographical difference, which affects agroecological zone and production volume, and processing level may be responsible for the differences in the findings. It could be noted that Benue and Edo States produce higher cassava, which invariably may be used to proxy a high level of garri production than the Southwest, Nigeria, and may affect the degree of involvement. Also, cultural differences in the regions may be used to explain the gender differential observed in cassava processing into garri and marketing of the product as gender is assumed to be a sociocultural construct as opined by Segal (2003).

Table 1. Description of respondents' socio-economic characteristics

Variable	Marketers., n= 192				Processors., n = 224			
	Freq.	%	Mean	Std. Dev.	Freq.	%	Mean	Std. Dev.
Sex								
Male	72	37.5			122	54.5		
Female	120	62.5			102	45.5		
Age (years)			45.4	10.0			44.2	10.7
Marital Status								
Single	6	3.1			3	1.3		
Married	176	91.7			205	91.5		
Separated	10	5.2			16	7.1		
Divorced								
Widowed								
Household size			8.7	3.0			8.0	3.1
Level of Education								
No formal Education	94	49			65	29		
Primary Education	71	37			122	54.5		
Secondary Education	12	6.3			21	9.4		
Tertiary	15	7.8			16	7.1		
Experience			15.6	3.5			16.5	3.5
Income from Cassava			72442.0	25383.8			68010.4	24600.3
Other income			44679.7	26805.2			50021.4	30128.1

Furthermore, the findings show that the average ages of the garri marketers and processors in the study area were approximately 45 and 44 years, respectively. This is an indication that they are still in their prime ages, hence, searching for information and practices that would be used to prevent the spread of Lassa fever may be easier since age is connected to activeness and alertness (Milewski-Lopez et al., 2014). Also, it was found that most of the respondents (91.7% and 91.5%) for marketers and processors, respectively were married. This shows that processing of cassava into garri and marketing may be a useful source of income for most farming households in the study area and Lassa fever is known to spread rapidly through unprotected garri when consumed, processors and marketers of cassava into garri may need to take extra care and consciousness to ensure that the product does not spread the deadly Lassa fever.

Respondent's knowledge of Lassa fever safety practices

Results in Table 2 show the garri marketers and processors' knowledge of Lassa fever safety practices. It was observed that the marketers and processors were knowledgeable on only a few of the safety practices such as the regular elimination of rats (54% and 55%). About 66% of garri marketers had adequate knowledge of storing garri in rodent-free containers while only about 31% of the processors were knowledgeable of this safety practice. Marketers (53%) and processors (90%) were both knowledgeable of the need to maintain good personal hygiene as a means of controlling the Lassa fever pandemic. In addition, a little below half of the respondents knew the use of keeping garri in tight air-tight containers (49% and 48%). However, only a small number of the marketers and processors knew other essential safety practices such as wearing masks and gloves, wrapping garri sacks in cellophane at all times, re-frying the garri before selling, disposing of waste far away from home, dressing in protective clothing while processing and marketing garri. The findings indicate that few Lassa fever safety practices were known by the marketers and processors, suggesting that the respondents were not sufficiently knowledgeable of all required Lassa fever safety practices. This finding implies that Lassa fever disease may still be a regular occurrence in the study area as the respondents' knowledge of the preventive measures was rated high in very few of the preventive safety practices. The low knowledge of the essential preventive safety practices in Lassa fever may be due to a low level of awareness and sensitization among respondents as results of Focus Group Discussion (FGD) sessions conducted in many locations indicated this from the assertion stated below:

> … we only hear this on television and radio at a time and when you visit hospitals, write-ups on Lassa fever are just everywhere. No deliberate efforts by anybody whatsoever to educate us. The worse thing is that with the televisions and radio, you have to buy fuel to operate and government electricity is not very regular and in some of the places, they restore power supply at very odd hours of the night when everyone must have slept while in some areas, the strength of the power supply would be unable to power any electronic gadget and in many cases, the power is never available and accessible… (Excerpt from one of the FGD sessions conducted in the study area)

The above findings may be responsible for the low level of knowledge of respondents about the preventive safety measures for Lassa fever virus in the study area. The findings are therefore in consonant with the few existing findings of Lassa fever in Nigeria such as the ones conducted by Tambo *et al*., (2018), which reported that the community knowledge of Lassa fever in Nigeria is limited and that of Adegoke et al. (2017) that foodstuff sellers in major markets in Nigeria had a high level of awareness of Lassa Fever as a deadly disease but only a few had adequate knowledge about how to avoid contracting it due to poor information dissemination strategies and suitability and compatibility of information sources to the target audience's needs. Consequently, using educational interventions has been suggested to improve this knowledge. This is perceived as a way of reducing the occurrence of the disease (Obe *et al*., 2017).

Level of knowledge of safety practices among garri processors and marketers

The level of knowledge of the specific identified safety practices of preventing the spread of Lassa fever was analysed and results show that their knowledge was high, particularly in the practice of regular elimination of rats (Mean=2.69, Mean=3,17), covering garri in a tight container (Mean=2.55, Mean=2.65), storing garri in rodents free container (Mean=2.69, Mean= 2.53) and Maintaining good personal hygiene (Mean= 2.88,

Table 2: Knowledge of Lassa fever safety practices

Safety Practices	Marketers, n= 224		Processors, , n = 192	
	Freq.,	%	Freq.	%
Wearing of masks	71	31.7	32	16.7
Wearing of Gloves	12	5.4	6	3.1
Regular elimination of rats	121	54.0	105	54.7
Covering garri in a tight container	109	48.7	93	48.4
Using cellophane to rap the garri sacks at all times	79	35.3	39	20.3
Re-frying of garri before selling	17	7.6	4	2.1
Storing garri in rodents free containers	148	66.1	59	30.7
Disposing of wastes far away from home	39	17.4	14	7.3
Maintaining good personal hygiene	119	53.1	172	89.6
Wearing of protective clothes while processing and marketing garri	92	41.1	44	22.9
Wearing of protective clothes while selling	64	28.6	35	18.2

Table 3. Level of knowledge of safety practices

Safety Practices	Marketers			Processors		
	Mean	Std. Dev	Rank	Mean	Std. Dev	Rank
Wearing of masks	1.47	0.18	Low	1.19	0.12	Low
Wearing of Gloves	1.51	0.31	Low	1.43	0.57	Low
Regular elimination of rats	2.69*	0.46	High	3.17*	0.15	High
Covering garri in a tight container	2.55*	0.16	High	2.65*	0.21	High
Using cellophane to rap the garri sacks at all times	1.53	0.62	Low	2.22	0.45	Low
Re-frying of garri before selling	1.43	0.42	Low	1.42	0.66	Low
Storing garri in rodents free containers	2.69*	0.11	High	2.53*	0.12	High
Disposing of wastes far away from home	1.58	0.51	Low	3.27*	0.19	High
Maintaining good personal hygiene	2.88*	0.27	High	2.52*	0.31	High
Wearing of protective clothes while processing and marketing garri	1.16	0.78	Low	1.36	0.49	Low
Wearing of protective clothes while selling	1.16	0.29	Low	1.29	0.25	Low

*Mean ≥ 2.5 = High knowledge

Mean=2.52) among marketers and processors in the study area. However, a low level of knowledge was observed in selected areas among marketers and processors respectively like wearing masks (Mean=1.47, Mean=1.19), wearing gloves (Mean=1.51, Mean=1.43), using cellophane to rap the garri sacks at all times (Mean=1.53, Mean=2.22), Re-frying of garri before selling (Mean=1.43, Mean=1.42) and disposing of wastes far away from home (Mean=1.58) by marketers only. This could be related to the low level of education found in this group, as more than half of the respondents had only elementary school or no formal education. Although education may not be a reliable and only predictor of understanding the knowledge of respondents and behaviour, it has been confirmed as a statistically significant variable in the study of knowledge as submitted by Valehov (2016). Other studies in Nigeria, however, have found that having a higher degree of education is associated with having excellent knowledge of Lassa fever (Nwonsu *et. al.*, 2018). The low level of knowledge among respondents, who are directly engaged in the processing and marketing of garri poses a threat to the eradication of Lassa fever in Nigeria any time soon. This is a threat because the selling and distribution of garri in Nigerian markets are linked with practices such as product display in open sacs, bowls, and containers. Also, the use of bare hands during handling and sales. These unsanitary practices require immediate attention as they may lead to microbial contamination due to the deposition of bio aerosols on exposed products, transfer of microbes from dirty hands and utensils, and frequent visits by animals and flies (which may carry infectious agents), which can contribute to the post – process problems of this product (Mulade, 2013). The result of these findings therefore, implies that while respondents have high knowledge about Lassa fever safety practices in some areas, there is still a need to educate them about the importance and usefulness of those practices which respondents had low knowledge to increase their knowledge of the disease.

Cumulative level of knowledge among respondents

The overall level of knowledge of Lassa fever safety practices among respondents indicates that most of the respondents (63.6% and 54.5%), marketers and processors, respectively recorded a low level of knowledge while only 36.4% of marketers and 45.5% of processors of cassava to garri had had high knowledge. These findings imply that Lassa fever may likely spread through garri processors and marketers in the study area since garri is a major carrier of the disease that has been declared a pandemic not only in Nigeria but other parts of Africa, especially West Africa. However, it was first reported in Nigeria in 1969 and it was named after the village where it was discovered (Akpede et al., 2018). It has been reported that humans are infected with the Lassa virus through exposure to food items contaminated with the urine or faeces of infected Mastomys rats (WHO), 2018) and garri has been reported as the most popular staple food in Nigeria where household members consume raw (Airaodion et al., 2019). However, several safety practices are available for preventive measures and knowledge of these safety practices would be very useful in the sustainable control of the deadly virus. Therefore, with the low level of knowledge of respondents (marketers and processors) who serve as important components in the cassava value chain, it is expected that these precautionary and preventive measures would not be deliberately observed. Hence, the spread of the disease becomes inevitable. Reasons attributed to the low knowledge may be cultural as the report of the FGD sessions conducted showed that many respondents (both marketers and processors) submitted that the virus does not exist but the Federal Government of Nigeria used it as a means to obtain international assistance from the international communities in form of grants and donations as described thus:

> … we do not believe in this disease. It is just fever (malaria) and we are used to it already. Nigeria's government uses it to scam the world in order to get aid and assistance in monetary forms. Sadly, whenever the money comes, they loot it. We suspected that you are part of the team eating the money. You must, therefore, give us our share before leaving. It is a national cake!... (Excerpt from one of the FGD sessions held in Etsako Central)

Based on the above assertions, it was cleared that respondents' trust on the government is questionable and this might be attributed to the corruption level in Nigeria where every aspect of the economic is politically corrupt. This affects the thinking and beliefs system of the populace.

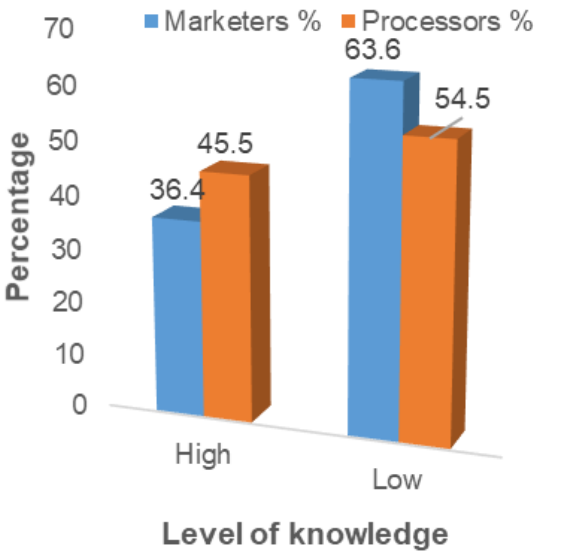

Figure 1. Cumulative knowledge level of Lassa fever safety practices.

Determinants of Knowledge of safety practices

Evidence from Table 4 shows that among the garri marketers, sex (wald = 2.519), household size (wald = 3.052), level of education (wald = 2.512) and income from cassava (wald = 3.237) significantly determined the respondents' level of knowledge of the safety practices in Lassa fever at 0.05 level of significance while age (wald = 4.720), and marketing experience (wald = 4.288) were the identified determinants of the marketers' level of knowledge at 0.01 level of significance. The binary logistic regression model was able to predict about 71.1% of the variation in the knowledge level of marketers and 59.3% of variations in the level of knowledge could be explained by the combined effect of the significant variables identified above. Specifically, the odd ratio of 2.979 simply means that the sex of the marketers as male could indicate that level of knowledge of Lassa fever safety practices increased by twice while older marketers have the chances of increasing their knowledge of the safety practices by approximately 5 times. Also, marketers with a higher number of people under their roof as household size could have the opportunity of increasing their knowledge of safety practices by 5 times, and marketers with higher farming experience may have their knowledge of safety practices by 4 times. Lastly, marketers with higher income would have their knowledge increased by approximately 3 times based on the above results.

Similarly, marital status (wald = 4.464) was a significant determinant of safety practices' knowledge of Lassa fever at 0.01 level of significance while income from cassava (wald = 3.483) and income from other sources (wald = 2.403) at 0.05 level of significance. The model was able to perfectly predict about 65.7% and specifically, being married would increase the likelihood of having a high knowledge of safety practices in Lassa fever by approximately 4.4 times, and having high income from cassava and other sources may increase the likelihood of having known about the safety practices by 2.7 and 3 times, respectively. The significant variables could be used to predict about 51.1% variation in the level of knowledge of Lassa fever safety practices.

The findings explain that age, marketing experience, level of education, household size, and income from garri were the determinants of the level of knowledge among garri marketers even though many variables were identified to have influenced the level of knowledge of Lassa fever safety practices, marital status, income from garri and other income were the identified significant determinants among processors of cassava into garri in the study area. The findings resemble the findings of Chung-Chu and Shiou-Yu (2005) that identified experience and education as critical factors that influenced the knowledge level among e-learners while Sujitha and Murugesan (2020) opined that the income of respondents was a significant variable that determined knowledge of management practices.

Table 4. Determinants of knowledge

Variables	Marketers		Processors	
	Wald	Odd Ratio	Wald	Odd Ratio
Sex	2.519*	2.979	1.458	0.193
Age (years)	4.720**	3.985	1.126	1.124
Marital Status	1.747	1.107	4.464**	4.439
Household size	3.052*	5.162	1.270	0.024
Level of Education	2.512*	6.165	1.819	0.299
Experience	4.288**	4.724	0.183	1.098
Income from garri	3.237*	3.413	3.483*	2.702
Other income	1.491	0.516	2.403*	3.019

Note. Over percentage prediction is 71.1 and 65.7 for marketers and processors, respectively; -2 Log likelihood is 163.414 and 115.503 for marketers and processors, respectively; Nagelkerke R Square is 0.593 and 0.511 for marketers and processors, respectively.

4.0 Conclusions

The spread of Lassa fever in Nigeria and Edo State in particular should be a serious concern to all and sundry and garri has been identified as a common vector of this deadly disease with a mortality rate of between 15 and 20%. Sadly, garri is a common carrier of this disease especially when it gets contaminated with the urine and faeces of rats. However, many consumers of this common staple food in Nigeria might be contracted this deadly disease if the processors and marketers are not observing adequate safety practices that could reduce the spread. This study was conducted to unveil the processors' and marketers' level of knowledge on some commonly identified safety practices by the World Health Organization and results showed that both processors and marketers of garri had low knowledge of the safety practices and that some never believed in the existence of the Lassa fever. It was inferred from the findings that Lassa fever may continue to be a serious health challenge in the study area with the low level of knowledge recorded among the major actors that could represent important agents in the spread of the disease. The findings recommend that vigorous advocacy and campaign are required for both processors and marketers of garri in the study area to sustainably reduce the spread of Lassa fever by the stakeholders in the Ministry of Health and other allied ministries and agencies to prevent the outbreak of such disease in the study area.

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