

The Mythical Construction of the Spread of Lassa Fever among Garri Marketers: Empirical Evidence from Edo State, Nigeria

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Abstract - Lassa fever (LF) is prevalent in Edo State, where garri, the most important cassava product, is processed and marketed. The disease spreads through practices influenced by the beliefs and traditions of garri marketers. The study examines the mythical beliefs people hold about Lassa fever. A simple random sampling procedure was used to select 192 garri marketers. A structured interview schedule was employed to elicit quantitative data, while in-depth interviews were conducted to collect qualitative data. Gross Margin was used to determine profitability, and the qualitative data were transcribed. Garri marketing is a profitable venture with a gross margin of ₦80,752.22 per month. A large proportion (39.5%) of the marketers never believed in the epidemic nature of Lassa fever, attributing the disease to punishment from deities. Additionally, 44.6% indicated that the government used it to secure funding from international communities, while others believed that rats are not the cause of Lassa fever. In conclusion, some marketers hold false beliefs about the reality of Lassa fever. Expanding an effective awareness campaign to dispel myths about Lassa fever is crucial for enhancing the effectiveness of preventive measures against its spread.

Keywords: Lassa Fever, Garri, Marketers, Spread, Belief

I. INTRODUCTION

Infectious diseases, which are caused by various microorganisms, can spread from one individual to another through either direct or indirect means. These diseases pose a significant global health threat due to their capacity to cause widespread illness and fatalities [1]. Certain infectious diseases are specific to particular regions and ecosystems. Among these, Lassa fever (LF) stands out as a notable disease that has appeared or reemerged in West African nations. It first emerged in Nigeria and then extended to countries including Liberia, Ghana, Guinea, and Sierra Leone. Since its initial discovery in 1969 [2], Lassa fever has raised significant health concerns globally [3].

Lassa fever (LF) has been a persistent health challenge in Nigeria, marked by its continual appearance in both epidemic and sporadic forms. Recent studies highlight a growing trend in the frequency of these outbreaks and their expansion throughout the nation [4]. Notably, the period between 2018 and 2020 saw Nigeria facing its most severe Lassa fever outbreaks to date. During these years, the country reported an escalating number of confirmed cases:

633 in 2018, 810 in 2019, and 1,189 in 2020, affecting 29 of its 36 states and the Federal Capital Territory. This significant increase in cases triggered both national and international responses in healthcare, highlighting concerns over the consistent and widespread emergence of Lassa fever across Nigeria (Nigeria Centre for Disease Control [5], [6]).

Research indicates that Garri, a key cassava derivative extensively processed and sold in Edo State, plays a crucial role in the local market [7]. It has been linked to the proliferation of certain diseases, with numerous studies pointing to its consumption as a contributing factor. Garri, a staple food often consumed raw by many Nigerians, has been specifically associated with disease outbreaks [8], [9], [10]. Reports have highlighted instances where individuals contracted serious infections through the consumption of soaked Garri. Furthermore, certain behaviors that promote interaction between rodents and humans are identified as key in facilitating primary transmission, particularly in rural settings. A prevalent practice contributing to this risk is the sun-drying of food products, such as Garri, along roadsides. This method, influenced by the cultural beliefs and traditions of the processors and marketers before reaching the end consumer, may perpetuate the problem.

Efforts by the Federal Government to curb the spread of disease through interventions aimed at improving garri processing practices should have led to a decrease in inappropriate handling methods. However, the deeply ingrained belief systems of rural communities may pose significant obstacles to the success of these government efforts. The necessity for initiatives to enhance awareness of Lassa fever within communities has been highlighted [11]. Despite these efforts, it has been found that garri processors and marketers in Edo State lack comprehensive knowledge regarding the safety measures needed to prevent Lassa fever [10], largely due to low literacy levels among these groups. For instance, a study by [12] revealed that in certain areas of Osun State, garri marketing is predominantly conducted by uneducated women, which can contribute to the persistence of myths about Lassa fever. Such misconceptions continue to fuel the disease's spread within the state. This underscores the critical importance of this research in

dispelling myths and enhancing understanding of Lassa fever transmission in Edo State, Nigeria

II. OBJECTIVES OF THE STUDY

The main objective of the study is to unravel some of the mythical beliefs that people firmly hold about Lassa fever, particularly among marketers of garri in the Edo State, Nigeria. Specifically, the study was conducted to:

1. Describe some selected socio-economic characteristics of garri marketers;
2. Conduct a profitability analysis of garri marketing and;
3. Document some myths concerning Lassa fever spread among the respondents in the study area.

III. MATERIALS AND METHODS

The study was conducted in Edo State. The choice of this state is based on its inclusion as one of the States with the highest number of Lassa fever cases in Nigeria in 2022. According to the World Health Organization bulletin (2023), a total of 211 cases of Lassa fever were confirmed with 40 deaths recorded between January 3rd and 30th, 2022. In all the confirmed cases, 14 out of the 36 states were involved and three states (Ondo, Edo and Bauchi) with 63, 57 and 53 recorded cases, respectively accounted for 82% of the confirmed cases. The state is found in southern part of Nigeria with its headquarters in Benin, Benin City. The State is agrarian with more than 70% of the population engages in agriculture. The state is divided into three agricultural zones- Edo south, central and north based on the Agricultural Development Project delineation for easy administration. The state is known for the production of arable crops such as cassava, yam, cocoyam, rice, ground nut and tree crops such as cocoa, cashew and rubber among others.

The population of the study is the garri marketers. This is because Lassa fever has been confirmed to spread easy through the consumption of garri and marketers who are not knowledgeable and those with some myths about Lassa fever may carelessly promote the spread. In terms of sample selection, two of the three agricultural zones were purposively selected based on the number of confirmed cases of Lassa fever and their proximity to the Lassa fever diagnostic centre. These are: Edo central and Edo north agro ecological zone. Garri marketers' Association was identified in each of the two purposively selected local government area. A total of 381 members of garri marketer association were identified in the two local government and Krejcie and Morgan (1970) sample size table was used to select 192 out of the 381 garri marketers. The selected 192 were sampled with the use of simple random sampling technique. Hence, 192 garri marketers were used for the study. Structured and validated questionnaire was utilized to collect quantitative data while in-depth interviews were used to elicit qualitative data from the respondents. Quantitative data collected were described with frequency counts, percentages, mean and

Gross Margin was used to determine the profitability while the qualitative data collected were transcribed in line with the principles of transcription.

The Gross Margin (GM) model is stated as follows:

The profitability of garri marketing in the study area was assessed using a Gross margin analysis, which is represented by the following equation:

$$GM = TR - TVC$$

Where: GM = Gross margin

TR = Total revenue

TVC = Total Variable Cost

IV. RESULTS AND DISCUSSION

A. Socio-Economic Characteristics

Table I reveals that a majority (62.5%) of garri marketers are female, predominantly married (91.7%), with an average age of 45 years. They typically have a household size of approximately 8 members, and 49.0% lack formal education. On average, these marketers have around 15 years of experience in their field and earn about ₦72,442.00 monthly from garri marketing. These results align with studies by [12] and [10], which found that garri marketing is largely undertaken by uneducated women in Osun State and middle-aged women in Edo State, respectively. Additionally, it was found that marketers on average earn an additional ₦44,679.7 from other economic activities, indicating their involvement in multiple sources of income beyond garri marketing.

TABLE I SOCIO-ECONOMIC ATTRIBUTES

Variable	Marketers., n= 192			
	Freq.	%	Mean	Std. Dev.
Sex				
Male	72	37.5		
Female	120	62.5		
Age (years)			45.4	10
Marital Status				
Single	6	3.1		
Married	176	91.7		
Separated	10	5.2		
Divorced				
Widowed				
Household size			8.7	3
Level of Education				
No formal Education	94	49		
Primary Education	71	37		
Secondary Education	12	6.3		
Tertiary	15	7.8		
Experience			15.6	3.5
Income from Cassava			72442	25383.8
Other income			44679.7	26805.2

Source: Field Survey, 2022

B. Profitability Analysis of Garri Marketing

Regarding profitability assessed through Gross Margin, the data presented in Table II reveals that garri marketing yields an average Gross Margin of ₦80,752.22 per month. This figure highlights the profitability of garri marketing as an agricultural business, indicating that marketers in the study area earn an average monthly income of ₦80,752.22 from their activities. This conclusion underscores the viability of garri marketing as a lucrative endeavor. Such findings are consistent with existing research, including studies by [13], [14], [7] and [15], which have similarly recognized the profitability of garri marketing at various points in time.

TABLE II PROFITABILITY OF GARRI MARKETING IN EDO STATE

Items	Mean Amount (₦)	% of the TVC
Variable Cost		
Cost of labour	7381.06	15.6
Marketing cost	15773.2	33.2
Cost of storage	5618.33	11.8
Cost of transportation	12991.5	27.4
Miscellaneous	5701.18	12.0
Total Variable Cost	47465.3	
Total Revenue	128217	
Gross Margin (₦)	80,752.22	

Source: Field Survey, 2022

C. Opinions about Lassa fever

However, a significant portion (39.5%) of respondents did not acknowledge the epidemic nature of Lassa fever, attributing its spread instead to divine retribution. Meanwhile, 44.6% believed that the government was exploiting the situation to obtain funding from international organizations like the World Health Organization (WHO) and other foreign donors.

Additionally, there was a strong sentiment among many that rats, commonly regarded as benign creatures found in both rural and urban homes, could not be the culprits behind Lassa fever. They questioned the logic of suddenly blaming rats, which have coexisted with humans for years, for transmitting the Lassa fever virus. Some suggested that the government’s emphasis on rats as the disease vector was a strategy to garner international funds for Nigeria’s benefit. Criticisms were also raised regarding the allocation of international funds, with allegations that a substantial portion was not directed towards disease eradication but was instead misappropriated, as highlighted in various statements.

We have a government that cannot be trusted in all areas. It is believed that they use some of these epidemic occurrence to secure funding from the white people and the money released is usually wasted and looted. With the level of assistance obtained on Lassa fever alone, there should be better hospitals across the major towns and cities in the

country where Lassa fever if exists can be treated... Excerpt from one of the Garri Marketers in Irrua in Esan Central Local Government Area, Edo State, Nigeria.

Similarly, some garri marketers at Iwareke in Etsako Central described Lassa fever as the normal malaria which herbs and other medications could easily cure. They believe that the Federal Government of Nigeria is not in any way serious about the interventions targeted toward any epidemic as they hide under them to loot public fund as stated in one of the excerpts presented thus:

There’s no such thing as Lassa fever, and even if it were real, many of us would have perished by now. Rats have always been a part of our households, and there’s never been a case of anyone dying from such a disease here. Instead, individuals suffering from severe malaria and typhoid are often misdiagnosed as having Lassa fever, similar to how many were mistakenly labeled as Covid-19 cases in 2020... - Statement from a marketer in Ewarake, Etsako Central Local Government Area, Edo State, Nigeria.

It is therefore worthy of note that these type of beliefs could promote the spread of Lassa if the right education and knowledge are not vigorously initiated. The above scenarios indicate intending danger in the face of Lassa fever outbreak in the study area. It is therefore recommended that government at all levels, health workers, community leaders, community based organizations and educational institutions in Edo State must be empowered by the state government to engage in vigorous campaign and creation of awareness on the danger of Lassa fever with the view to demystifying some of the myths garri marketers and other people in the community have towards Lassa fever in Edo State, Nigeria for a healthy and disease free environment.

V. CONCLUSION

The findings conclude that most garri marketers in the study area were women with limited education, yet still within their prime age, and earned reasonably well as monthly income from garri marketing. Gross Margin analysis shows that garri marketing is a profitable agricultural enterprise. However, some of the marketers hold false beliefs regarding the existence and reality of Lassa fever. This poses a serious threat to the control of Lassa fever and, consequently, to human existence if many people with these false beliefs embrace garri marketing as a profitable venture. An effective awareness campaign that debunks myths about Lassa fever should be expanded by the government to improve the efficiency of any preventive measures designed to halt the spread of this deadly illness. The government should, as a matter of urgency, design effective awareness campaigns that will demystify myths about Lassa fever, thus improving the efficiency of any preventive measures designed to halt the spread of this deadly illness. An effective awareness program could demystify the myths people have about Lassa fever, enhancing the effectiveness of any preventive measures designed to curb the spread of this deadly virus.

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