

An Assessment of the Role of the Civil Sector in the Control of Lassa Fever in Onuenyim Agbaja, Izzi Ebonyi State

Article by Johnson Diara Chijindu
Public health, Texila American University
E-mail: jcdiara@yahoo.com

Abstract

Background: From 1st January to 11th November 2018, a total of 3016 suspected cases of Lassa fever was reported from 22 states but 4 states including Ebonyi state remained in the active phase. Onuenyim Agbaja in Izzi LGA has been in the eye of the storm with all confirmed cases ending in mortality.

Objective: To assess the role of civil sectors in the control of Lassa fever in Onuenyim Village.

Methodology: This was a descriptive cross-sectional study with data collected using a Likert scale questionnaire rated 1-5 from most negative (low) to most positive (high) responses with a mean value above 3.5 regarded as positive (high)

Results: A total of 250 respondents participated in the study which showed that the civil sectors played active role in the control of Lassa fever through advocacy with a mean rating (MNR) of 4.7, resource mobilization with MNR of 4.4 and information sharing and dissemination with MNR of 4.4. These activities had positive effect on the people as shown by an MNR of 3.6. However, the respondents were not sure they knew all they were supposed to know about Lassa fever as shown by an MNR of 1.5.

Conclusion/Recommendations: There is great potential for improving public health through systematic collaboration between governments and civil society. This study tried to lay foundation on the role of the civil sectors in the control of Lassa fever but there is need to collect more systematic evidence on the role of civil sectors in the control of Lassa fever, to improve our knowledge.

Major players in the health industry including government at all levels need to work with civil society for the social dimensions of health actions for infectious disease control especially the emerging and re-emerging infections like Lassa fever.

Keywords: Assessment, Roles, Civil sectors, Control, Lassa fever.

Introduction/Literature review

Lassa fever is an acute viral haemorrhagic illness transmitted by rats. It has been known since 1950s but the virus was not identified until 1969 when an American missionary nurse named Laura Wine came down with a troubling fever while working in Lassa town of Borno State Northeast Nigeria. Even after recovery, the virus remains in body fluids, including semen (World Health Organisation, 2000)

Epidemiology

Lassa fever is endemic in several West African countries particularly Guinea, Liberia, Nigeria and Sierra Leone, where the animal reservoir, the multimammate rat is prevalent. Rough estimates suggest there are between 100,000-300,000 cases (Centre for Disease Control and Prevention, 2015) of Lassa fever each year in West Africa, and approximately 5,000 deaths due to the disease.

There is some evidence of endemicity in the Central African Republic, Mali, Senegal and other West African countries sharing borders with the highly endemic countries.

Lassa fever is endemic in Nigeria, with outbreaks almost every year in different parts of the country. Yearly peaks are observed between December and February. An increase in cases has been recorded since January 2018 (An update of Lassa fever outbreak in Nigeria, n.d.).

As of 2013, the spread of Lassa outside of West Africa has been very limited. Twenty to thirty cases have been described in Europe, as being caused by importation through infected individuals (Go, et al., 2013).

Causative organism

Lassa virus is a member of the Arenavirida family of viruses (Peterson, Townsend, Lima, & Bausch, 2014) which is enveloped, single-stranded, and bi-segmented RNA. This virus has both a large and a small genome section, with four lineages identified to date: Josiah (Sierra Leone), GA391 (Nigeria), LP (Nigeria) and strain AV (Goeijenbier, et al., 2013).

Vector/Mode of transmission

The natural hosts for Lassa virus are multimammate rats (*Mastomys natalensis*), which breed frequently and are distributed widely throughout west, central, and east Africa (Healing & Gopal, 2001). Humans are infected by contact with the rats or by eating them (they are considered a delicacy and are eaten by up to 90% of people in some areas) or indirect contact with infected rodent excreta, on floors, home surfaces, in food or water.

Person to person transmission occurs through infected bodily fluids, such as blood, saliva, urine or semen. This can occur in healthcare or domestic settings.

Clinical features

The incubation period of Lassa fever ranges from 7 to 21 days (Frame, et al., 1970; McCormick, et al., 1987). The clinical disease begins as a flu-like illness characterized by fever, general weakness, and malaise, which may be accompanied by cough, sore throat, and severe headache. Gastrointestinal manifestations such as nausea, vomiting, and diarrhoea are also common. Recovery from Lassa fever generally begins within 8 to 10 days of disease onset. In severe cases, the condition of the patient deteriorates rapidly between the 6th and 10th day of illness with severe pulmonary oedema, acute respiratory distress, clinical signs of encephalopathy, sometimes with coma and seizures, and terminal shock. Sensorineural deafness is commonly observed in patients in the late stages of disease or in early convalescence in survivors (Cummins, 1990).

It is difficult to diagnose clinically but should be suspected in patients with fever ($\geq 38^{\circ}\text{C}$) not responding adequately to antimalarial and antibiotic drugs. The most useful clinical predictors of Lassa fever are fever, pharyngitis, retrosternal pain, and proteinuria for diagnosis; and fever, sore throat, and vomiting (McCormick, et al., 1987).

Prevention and control

Medical approach

Epidemiological investigation, surveillance and laboratory: This includes but not limited to the following: active case-finding, follow-up of contacts, specimens/laboratory testing, search for the source and control of vectors/reservoirs in nature

Clinical case management: which includes triage in/out, barrier nursing, infection control, organize funerals, clinical trials and involvement of the ethics committee on any research issue.

Reducing rat to human transmission: Prevention relies on promoting good community hygiene to discourage rodents from entering homes.

Reducing human to human transmission: These includes but not limited to avoiding contact with infected Lassa patients and deaths by using personal protective appliances. Encourage early treatment in Lassa treatment centres (Dr Pierre Formenty, 2018)

Intersectoral approach

Lassa fever is one of the diseases where social determinants of diseases come into serious play. Therefore, a successful prevention programme must take the following into serious consideration.

Behavioural and social interventions: This involves conducting social and cultural assessments in order to expose some of the social determinant that favour Lassa fever infection. Engage with key influencers like women and /or youth associations, traditional healers, local authorities, religious & opinion leaders using formal and informal communication aimed at mobilizing the people to adopting a healthier and hygienic lifestyle, providing accurate and timely health advice and information on the disease and addressing community concerns. The above role therefore underscores the importance of the civil sectors in healthcare delivery especially in infectious disease control (Lassa fever control).

Civil sectors (society) and their roles in Lassa fever control

The words of Vichow that diseases have a connection with a fracture in the society has remained true in all ages. No wonder social determinants of diseases have been in the front burner of recent World Health Organization's (WHO) policies because of the piling criticism on their parochial nature in handling the world health making them look like World Disease Organization for its lack of engagement with other sectors that play major roles in determining health (Nordstrom, 2013). Achieving the WHO definition of health will require new platforms for intersectoral cooperation and incentives to engage all the stakeholders (Gopinathan, et al., 2015).

Civil sector has a long history of involvement in public health. Early public health actions to clean up American cities in the 1800s, for example, were led by well-known public figures supported by women's' groups. However, the recognition of civil sector's contribution to health has varied over time. One of the most significant developments in the recent past has been the 1978 Alma Ata declaration, which is considered a landmark for recognising people's participation in health systems as central to Primary Health Care and for recognising the role that organised social action plays in securing health gains.

CSOs have in-depth knowledge of local contexts due to their work with key affected populations. This places them in a strong position to raise awareness of Lassa fever among the general population and groups most affected by the disease. In Lassa fever control civil sectors can perform educational activities, raise awareness of Lassa fever symptoms and the availability of free Lassa fever diagnosis and care in Federal Teaching Hospital Abakaliki and other centres in the country, and distribute information materials. Greater awareness and understanding of the disease not only contribute to a reduction in Lassa fever spread but also mortify the socioeconomic and reduced healthcare utilization effect of Lassa fever.

Rationale for the study

From 1st January to 11th November 2018, a total of 3016 suspected cases of Lassa fever was reported from 22 states but 4 states including Ebonyi state remained in the active phase. (Nigeria Centre of Disease Control, 2018). Onuenyim Agbaja in Izzi LGA has been in the eye of the storm with all confirmed cases ending in mortality.

This study is meant to assess the role of civil sectors in the control of Lassa fever in Onuenyim Agbaja in Izzi local government area of Ebonyi State.

Main objective

- To assess the role of civil sectors in the control of Lassa fever in Onuenyim Village
- **Objectives**
- Assess people's knowledge about who the civil sectors were
- To assess the existence of civil sector groups in the village
- To assess people's knowledge about the roles of the civil sectors
- To assess the effects of the role of the civil sectors on Lassa fever control

Methodology

Study area/population

The study population were seven hundred and ten (710) residents between the age of thirteen (13) and above around Sudan United Mission Hospital Onuenyim Agbaja Izzi Local government area of Ebonyi State.

Study Design: This was a descriptive cross-sectional study designed to assess the role of civil sector in the control of Lassa fever in Onuenyim Agbaja village.

Sample Size: The sample size for the study was three hundred and fifty (350) individuals randomly selected using Cochran formula for sample size calculation in small population.

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

n_0 is Cochran's sample size recommendation of 385, N is the population size, and n is the sample size (Statistics How To, 2019). The sample size is therefore:

$$385 / (1+(384 /710)) = 250$$

Sampling method: Simple random sampling method was used in selection of the respondents.

Data collection: Data was collected using a Likert scale questionnaire rated 1-5 from most negative to most positive responses.

Data analysis: Data was entered in Microsoft excel spread sheet and analysed manually using measure of central tendency (mean and median) and measure of dispersion (range). Values less than 3.5 were considered low, whereas values greater than or equal to 3.5 were considered high. A decimal place was used for the Likert scale summary to avoid excessive approximation.

Ethical concern: Questionnaire was designed in such a way that respondents cannot be identified, and data were handled with absolute confidentiality.

Results/Data

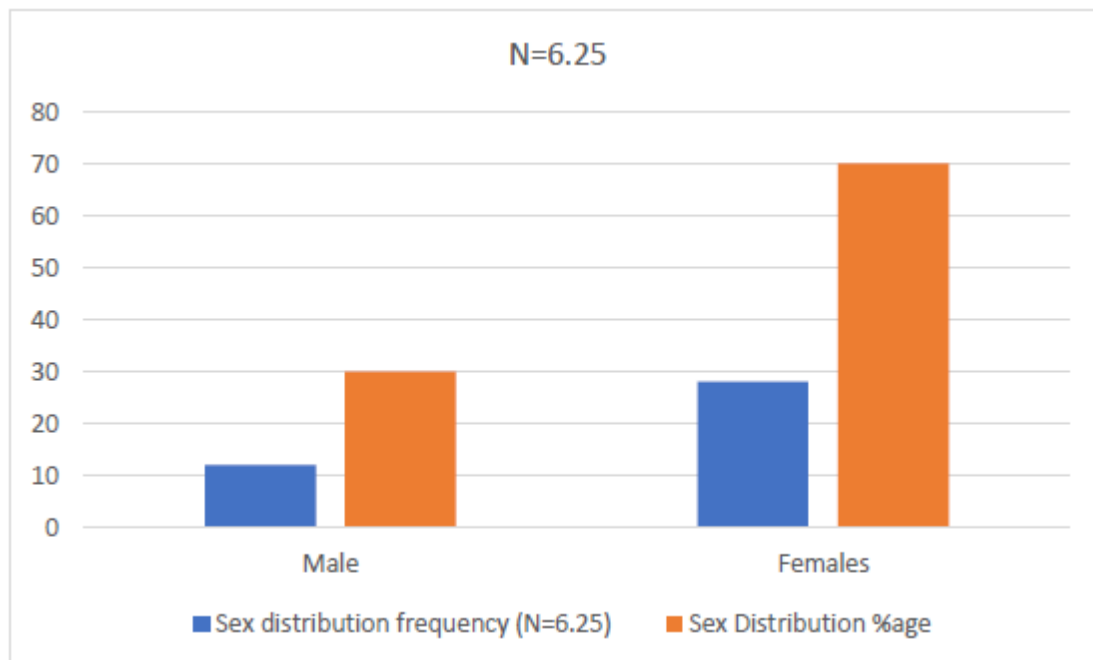
The data for this study was collected using a Likert scale questionnaire rated 1-5 from most negative (low) to most positive responses.(high) The results are presented under four thematic areas (socio-demographic characteristics which were presented in frequency tables, Knowledge of civil sector, strategies/roles of civil sector and effects of the roles of sectors in Lassa fever control) in tables, bar charts and pie charts. A total of two hundred and fifty (250) questionnaires were distributed to people living in and around Sudan United Mission Hospital Onuenyim Agbaja using simple random sampling method and all were recalled. The data were as follow:

Sociodemographic characteristics

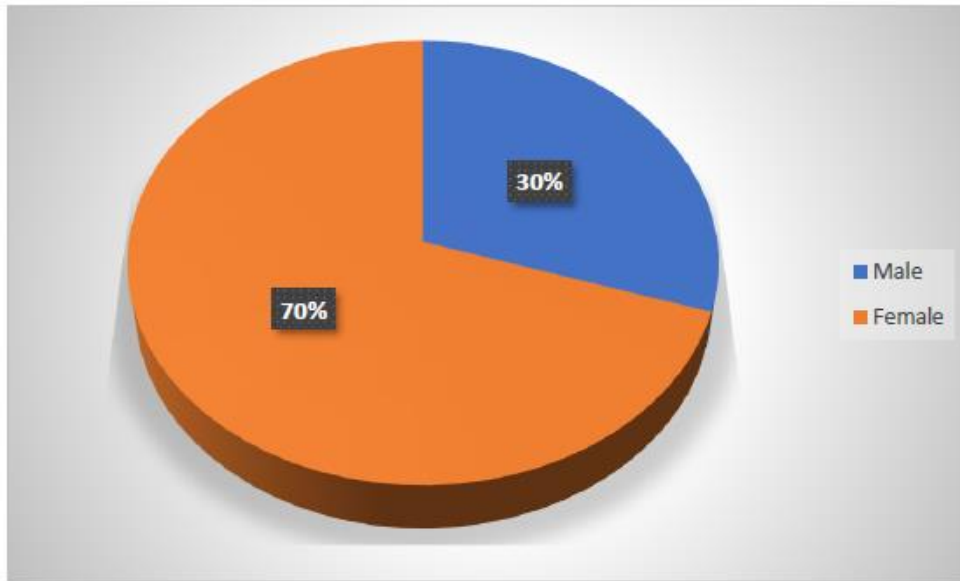
Table 3: Sex distribution

Sex	Frequency	Percentage (%)
Males	75	30
Females	175	70
Total	250	100%

A total of 350 persons were assessed out of which seventy-five (75) were males and one hundred and seventy-five (175) were females. Therefore 30% and 70% of the respondents were males and females respectively (Table 3).



Bar chart 1. Sex distribution

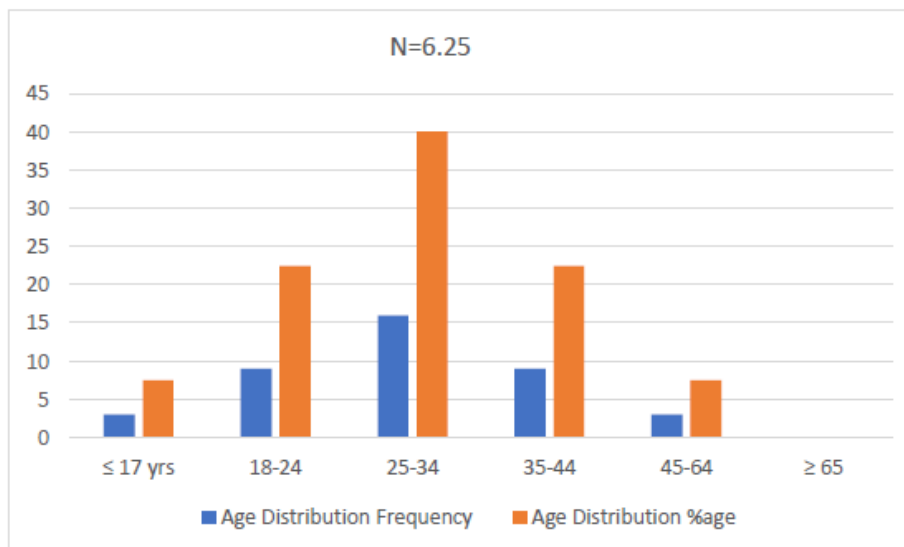


Pie chart 1. Sex distribution in %

Table 4. Age distribution

Age (Years)	Frequency	Percentage (%)
≤ 17	19	7.6
18-24	56	22.4
25-34	100	40
35-44	56	22.4
45-64	19	7.6
≥ 65	0	0
Total	250	100%

Nineteen (19) of the respondents each (7.6%) were between the ages of 17 or below and 45-64 years, fifty-six (56) of them each which is 22.4% were between 18-24 and 35-44 years of age, one hundred (100) (40%) were between 25-34 years of age.

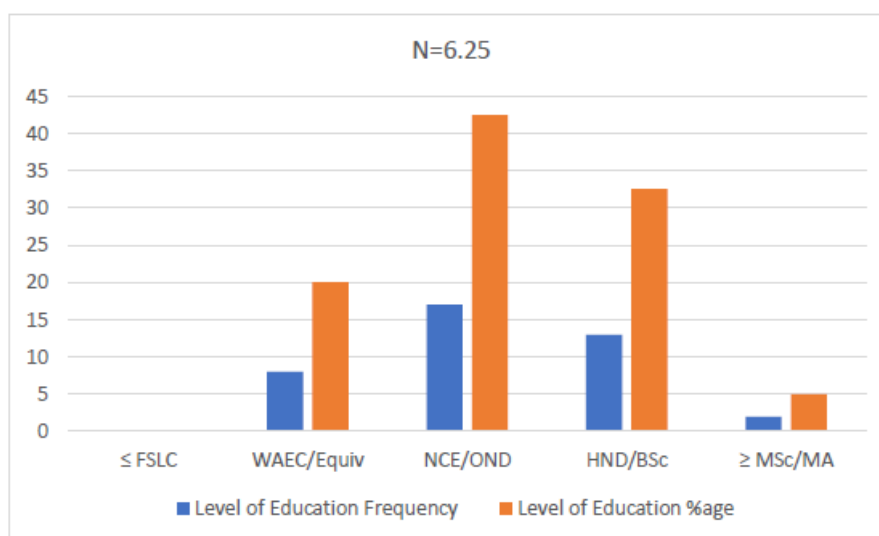


Bar chart 2. Age Distribution

Tables 5. Level of Education

Qualification	Frequency	Percentage (%)
≤ FSLC	0	0
WAEC/Equiv.	50	20
NCE/OND	106	42.4
HND/BSc	81	32.4
≥ MSc/MA	13	5.2
Total	250	100

The level of education of the respondents were as follows: Fifty (50) respondents (20%) had WAEC or its equivalent, 106 (42.4%) had NCE or its equivalent while 81 (32.4%) and 13 (5.2%) had HND/BSc and MSC/MA or above respectively.

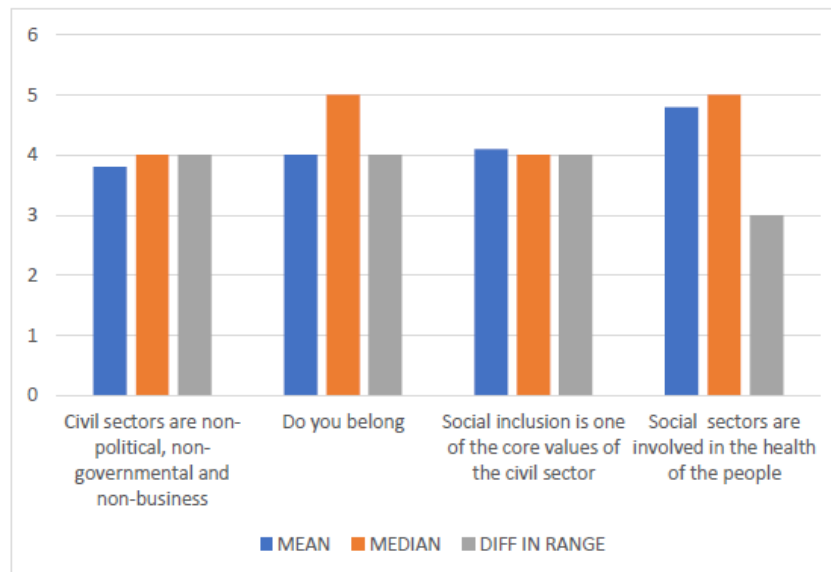


Bar Chart 3. Level of Education

Knowledge of civil sector

Table 6. Knowledge of civil sector

S/N	Questions	Mean	Median	Range
4	Civil sectors are non-political, non-governmental and non-business	3.8	4	1-5
5	Do you belong	4	5	1-5
6	Social inclusion is one of the core values of the civil sector	4.1	4	1-5
7	Civil sectors are involved in the health of the people	4.8	5	2-5



Bar Chart 4. Knowledge of civil sector

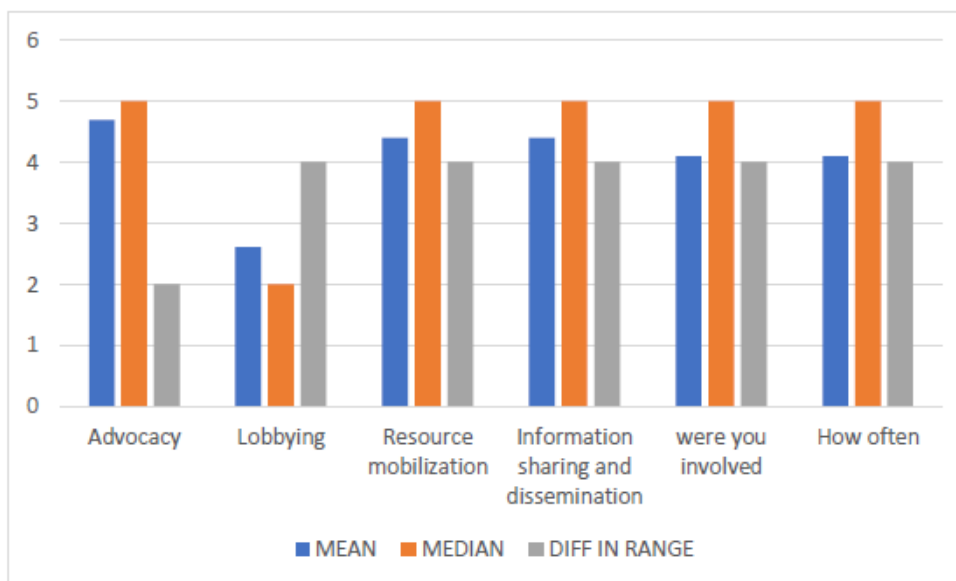
Table 6 assessed the knowledge of the respondents on what they know about civil sectors. They were assessed using four questions: Civil sectors are non-political, non-governmental and non-business, do you belong, Social inclusion is one of the core values of the civil sector and Civil sectors are involved in the health of the people and the mean were 3.8, 4, 4.1, and 4.8 respectively. The median alternates between 4 and 5 and the range was all 1-5 except for question 7 (Civil sectors are involved in the health of the people) which ranges from 2-5.

Strategies/roles of civil sectors

Table 7. Strategies/roles of civil sectors

S/N	QUESTIONS	MEAN	MEDIAN	RANGE
8	Advocacy	4.7	5	3-5
9	Lobbying	2.6	2	1-5
10	Resource mobilization	4.4	5	1-5
11	Information sharing and dissemination	4.4	5	1-5
12	were you involved	4.1	5	1-5
13	How often	4.1	5	1-5

On the roles and strategies used by the civil sector in influencing policies/change in the society which were advocacy, lobbying, resource mobilization and information dissemination; the mean were 4.7, 2.6, 4.4 and 4.4 respectively. The median was 5 for all the questions except for lobbying whose median was 2. The range were all 1-5 except for advocacy which was 3-5. On the questions to ascertain whether the respondents were involved in the civil sector activities and how often they were involved gave a mean of 4.1, a median 5 and a range of 1-5 were recorded for both questions (Table 7).



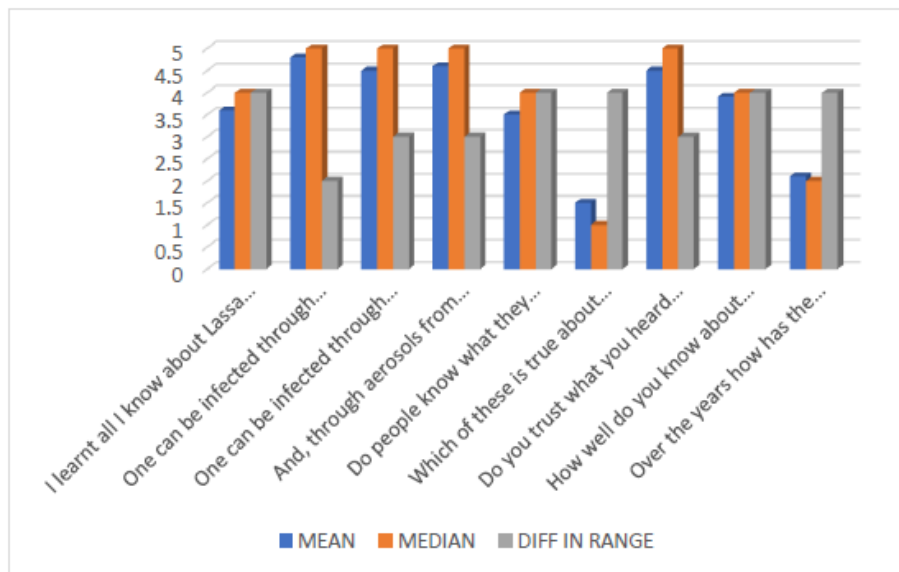
Bar chart 5. Strategies/roles of the civil sectors

Effect of the roles/strategies of the civil sectors on Lassa fever control

Table 8. Effect of the roles/strategies of the civil sectors on Lassa fever control

S/N		MEAN	MEDIAN	RANGE
14	I learnt all I know about Lassa fever from the civil sectors	3.6	4	1-5
15	One can be infected through direct contact with rat, the urine	4.8	5	3-5
16	One can be infected through direct contact with the body fluids	4.5	5	2-5
17	And, through aerosols from the infected person	4.6	5	2-5
18	Do people know what they should know about Lassa fever and on time	3.5	4	1-5
19	Which of these is true about how informed you feel about the disease	1.5	1	1-5
20	Do you trust what you heard about this disease	4.5	5	2-5
21	How well do you know about the disease	3.9	4	1-5
22	Over the years how has the awareness (cause, mode of transmission, signs and symptoms and preventions) developed.	2.1	2	1-5

On assessing the effect of the roles and strategies adopted by civil sectors to influence policies/change in the control of Lassa fever, nine (9) questions (Table 8) were used and the mean were 3.6, 4.8, 4.5, 4.6, 3.5, 1.5, 4.5, 3.9 and 2.1. The median was between 4 and 5 except for questions 19 and 22 which were 1 and 2 respectively. The range was 1-5 for all except for questions 15-17 and 20 which was 3-5, 2-5 and 2-5 respectively (Table 8).



Bar chart 6. Effects of the roles/strategies of the civil sectors on Lassa fever control

Discussion

The study was designed to access the roles of civil sectors in the control of Lassa fever in Onuenyim Agbaja- Izzi local government area of Ebonyi State. A total number of 250 respondents 75 (30%) males and 175 (70%) females (Pie chart 1) were drawn from people living around and in the only health facility in the area. Majority of the respondents were women which may relate to the high preponderance of tendency to seek for care in hospitals amongst women (Wang Y, et al., 2013).

About 85% (212) of the people assessed were within the age of 18-44 years (Table 4 & Bar chart 2) and about 80% (200) of the respondents have OND/its equivalent showing that the study population are fairly young and educated (Table 5 and Bar chart 3).

Although there are no clinical trials or meta-analyses specifically assessing the role of civil sectors in the control of Lassa fever, there are evidences of the of how the civil groups have helped to shape health policies and a force to reckon in policy formulation. Evidences also suffice how the civil sectors have played vital roles in the control of HIV and TB. They were involved in awareness-raising about TB symptoms and availability of free TB treatment; distribution of education and information materials; referral to TB facilities, DOTS, harm-reduction, treatment follow-up and psychosocial support services; and provision of incentives such as motivation packages containing food and transport vouchers in Tajikistanm, Azerbaijan and Belgium (WHO European Region, 2014).

The study demonstrated that the respondents have a good knowledge of who the civil sector were with mean rating of 3.8. Many of them were even part of the civil sectors as depicted by a mean value of 4 and majority of the respondents believed that social inclusiveness and commitment to the health of the people were part of the core values of the civil sectors with mean ratings of 4.1 and 4.8 respectively. A median of 4 & 5 was also an indicator that the people knew what the civil sectors were all about (Table 6 and Bar chart 4). Their understanding of the civil groups was in line with the work of Greer SL, Wismar M and Kosinka M in “What is civil society and what can it do for health?” (Greer SL, Wismar M, & Kosinka M, 2017).

Most of the respondents agreed that advocacy, resource mobilization, information sharing and dissemination were deployed by the civil sectors in the control of the spread of Lassa fever infection during the last outbreak at Onuenyim Agbaja village in Izzi L.G.A of Ebonyi State as indicated by a mean rating above 4 and median of 5. It is however not surprising that only an MNR of 2.6 with a median of 2 agreed to the use of lobbying as one of the tools/strategies used by the civil sectors in influencing change in health system especially during the period of the outbreak. This low rating truly attuned to the fact that lobbying was rarely used during the outbreak. Majority of the respondents with a mean rating of 4.1 and median of 5 belonged to the civil sectors and were often involved in activities where the above strategies and tools were deployed in a bid to contain the outbreak of Lassa fever in Onuenyim Agbaja (Table 7 and Bar chart 5). The roles of civil sectors are content and environment

specific, however no matter the content and environment the roles should always mimic the above and more. The above roles agreed with the itemized roles of civil society organisations in global strategy on diet, physical activity and health by WHO (WHO Global strategy on diet, physical activity and health) which includes leading grass-roots mobilization and advocate that healthy diets and physical activity for children should be placed on the public agenda; support the wide dissemination of information on the prevention of noncommunicable diseases in children through balanced, healthy diets and physical activity; advocate and support health-promoting programmes and health education campaigns for children; and contribute to putting knowledge and evidence into practice.

The activities of the civil sectors have a profound effect in shaping health policies, knowledge and the effect on Lassa fever control is not left out as majority of the respondents (mean rating of 3.6) agreed that most of the things they knew about Lassa fever were from their activities in the civil sectors and most of them (MNR: 3.5) agreed that they knew all they knew on right time. However, the twist was that majority of them (MNR: 1.5) don't believe that they knew enough about the disease even though they trusted all they heard about the disease (MNR: 4.5) no wonder the palpable fears that swept the whole village bringing all the activities to a momentary halt (Table 8 and Bar chart 6). The above effects were like the expectations of the WHO Civil Society External Relations which suggested that CSO make important inputs to health such as transforming public understanding and attitudes about health; promoting healthy public choices; building more effective interactions between health services and clients; and enhancing community control over and commitment to health interventions (WHO Civil Society Initiative External Relations and Governing Bodies , 2001).

Conclusions and Recommendations

There is great potential for improving public health through systematic collaboration between governments and civil society. This study tried to lay foundation on the role of the civil sectors in the control of Lassa fever by highlighting the role of civil society organisations in health (WHO Civil Society Initiative External Relations and Governing Bodies , 2001).

What is sure is that there is a need to collect more systematic evidence on the role of civil sectors in the control of Lassa fever infection, to improve our knowledge and to give visibility to good practice which will go a long way in reducing the devastating effect of Lassa fever outbreak on the socio-economic life of the affected people.

The public health sector must understand civil sectors and the civil sectors must better adapt to the needs of the health sector and better organize themselves as a group. Major players in the health sector/industry including the government at all level need to work with civil society to organise the social dimensions of health actions, to build wider constituencies for health rights and goals, and to strengthen public accountability and responsiveness within health systems. The need for a wider intersectoral collaborations in the issues of health and infectious disease control especially the emerging and re-emerging infections like Lassa fever cannot be over-emphasized and there is no other better time than now.

Study limitations

The result of the study would have also been affected by the population from where the samples were drawn from which was virtually a literate and academic environment where we have mainly non-indigenes.

Policy implications

For Nigerian health system to achieve its singular aim of having healthy citizens there is need for a holistic approach in the issues of health. This holistic approach involves an urgent need for intersectoral collaboration where other sectors will be allowed to freely buy into health programs and policies, seen as active players and recognised as indispensable stakeholders.

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