

FEVER CASES HEALTH-SEEKING BEHAVIOUR AND TRUST IN THE HEALTHCARE SYSTEM IN SIERRA LEONE: A CASE STUDY OF TWO PUBLIC HEALTH EMERGENCIES USING THE INTEGRATED DISEASE SURVIELLANCE AND RESPONSE (IDSR) DATA

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ABSTRACT

Background: Health-seeking behaviour among individuals with fever are actions undertaken when perceive themselves to be ill for the purpose of finding remedy and going for care at health facilities indicates trust in the healthcare system. This trust is based on their expectation that adequate treatments will be provided whenever needed. Over the last decade, Sierra Leone has been subjected to two public health emergencies which affected such trust, namely: The Ebola Virus Disease (EVD) epidemic of 2013–2016 and three years later the global pandemic of COVID-19. Alterations in health-seeking behaviour during emergencies is detectable in surveillance data. This study assessed the IDSR data for malaria, and focus group discussions (FGD) to determine the impact of these events on the health-seeking behaviour of fever cases in six districts across the five regions in Sierra Leone.

Methods: A cross-sectional, longitudinal study using monthly reported IDSR data on malaria in the District Health Information System 2 (DHIS-2) platform, from 2012 to 2020, and focus group discussions (FGD) in rural and urban communities within the study districts. The objective of the FGD was to better understand the participants' attitudes, motives and emotions in order to uncover their actual beliefs about the country's healthcare system during health emergencies.

Results: The IDSR data showed a significant decline in reported malaria cases during the EVD epidemic and the early surge in COVID-19 cases in 2020. The people's loss of trust in the healthcare system during these health emergencies as expressed in the FGDs reflected the troughs in 2014 – 2015 and 2020 malaria cases, except for one of the districts that showed different pattern in 2020.

Conclusions: The analysis of the IDRS data suggests that fewer fever cases sought care at health facilities during these health emergencies. Fear and the perceived deterioration of health services were significant deterrents to seeking care, according to the FGDs. Effective risk communication during health emergencies and the provision of adequate logistics and staff to manage both public health emergencies and endemic diseases are recommended.

KEYWORDS: Health-seeking Behaviour, Ebola, IDSR, Sierra Leone, COVID-19.

1. INTRODUCTION

Health-seeking behaviour is any action undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy.¹ Multidimensional factors determine health-seeking behaviours of people including Predisposing factors such as age, gender, ethnicity, culture, social factors; Enabling factors such as financial, insurance coverage, accessibility, availability; and the Need factors such as health perceptions and medical conditions.²⁻³ Obtaining good health-seeking behaviour is an important element of prevention, early diagnosis, and management of diseases or health conditions.⁴ It helps in reducing cost, disability, and death from diseases.⁴ Among the responsibilities of Governments in the world over, the provision of high-quality health services that are inclusive, affordable, and accessible to all citizens is most significant.⁵ Trust in the healthcare system is the anticipation of receiving adequate and prompt healthcare services whenever needed.⁶ Public health emergencies on the other hand may significantly affect such trust, especially when healthcare

systems may be overwhelmed by excess caseloads or the health facilities are perceived to be sources of infection themselves.

In response to an increased frequency of emerging and re-emerging diseases causing high morbidity and mortality in Africa, the World Health Organization (WHO) Regional Committee for Africa in 1998, adopted a strategy called Integrated Disease Surveillance.^{8,9,10} This strategy was renamed in 2001 as Integrated Disease Surveillance and Response (IDSR) to emphasize the critical linkage between surveillance and public health action and response.¹¹ The goal was to create and implement a comprehensive, integrated, action-oriented, district-focused public health surveillance system and achieve efficacy by preventing duplication of efforts for African countries.^{8,9}

Sierra Leone is among the 43 countries in the WHO African region (AFRO), implementing Integrated Disease Surveillance and Response (IDSR) guidelines to improve their abilities for monitoring trends in the incidence and prevalence of priority communicable and non-communicable diseases including malaria and other vector-borne diseases.⁷ Public health events reported through IDSR enable resource-limited countries to detect, assess, and report infectious and non-infectious threats to public health.^{9,12}

Over the last decade, Sierra Leone has been subjected to two health crises. The first was the Ebola Virus Disease (EVD) epidemic of 2013–2016 which claimed nearly 4,000 Sierra Leoneans.¹³⁻¹⁴ Three years later the global pandemic of COVID-19 started which has officially killed 125 since the index case in March 2020 but this is certainly a gross underestimate.¹⁵ The index Ebola case in the West Africa outbreak was in December 2013, the most severe Ebola epidemic in history that lasted over 120 weeks and claimed the lives of more than 10,000 in Sierra Leone, Guinea, Liberia, and other countries.^{13,14,16} The number of confirmed Ebola cases and deaths increased weekly in the three most affected countries until joint national and international efforts to break the chains of transmission ultimately led to its gradual decline by the second half of 2015.¹⁷ The EVD epidemic was fueled by persistent misinformation from rumours and conspiracy theories that Ebola was a trick and the assertions that the outbreak would end at a specific time by some consultants contributed to the public health disaster.^{18,19,20} Health indicators in West Africa were among the worst globally, even before the EVD epidemic, particularly in terms of maternal and child health.²¹ The EVD epidemic, under these circumstances delivered a significant shock to the health system and led to fear and mistrust in the health services due to the deaths of healthcare staff and the closure of many health facilities.²² The health workers were more likely to become infected with Ebola than the general adult population and the health facilities that had more deaths of healthcare staff were avoided.²³ Most individuals avoided seeking healthcare at those health facilities, regarding them as “the place to die.” Hospital functionality was considerably reduced during the EVD pandemic in Sierra Leone, according to studies based on national conventional healthcare delivery data. This shows that the virus's indirect effects on healthcare systems may have harmed more individuals than the infection itself.^{17,24} Several Ebola Treatment Units were created during the EVD epidemic, focusing primarily on isolating Ebola cases and neglecting the management of common diseases like malaria and other services required for routine health care, although officially remaining opened.²⁵

Malaria is hyper endemic in Sierra Leone and poses severe public health problems.²⁶ Several studies showed a significant reduction in cases of malaria seen at health facilities after the onset of the EVD outbreak, increasing the risk of severe malaria, especially in children.¹⁷ Other studies concluded that the magnitude of indirect health effects due to the Ebola outbreak was substantial with a decrease in health service provision or utilization such as – hospital visits for diagnostic tests, treatments and admissions, facility deliveries, cesarean sections, and a number of antenatal and postnatal care visits.¹⁷ Malaria diagnostic tests and treatment of severe malaria require the use of needles to collect finger-prick blood and to inject medication.²⁶ During the Ebola Virus Disease (EVD) outbreak, these procedures conflicted with the overall recommendation to avoid invasive procedures and the “No Touch” policy, which was aimed at limiting Ebola transmission. Furthermore, healthcare workers who only work with special programs such as malaria or HIV/AIDS programs were often reassigned to support response efforts.²⁷

Another major health crisis in Sierra Leone after Ebola is the COVID-19 pandemic. The early symptoms of COVID-19, such as fever, muscle pain, and tiredness, are similar to those of Ebola and may be misdiagnosed as malaria, making early clinical diagnosis difficult.²⁸ These characteristics of COVID-19, as well as previous Ebola outbreak experiences, highlight the necessity for malaria-endemic countries to address not only the COVID-19 threat but also its potential influence on current malaria control efforts.²⁹ It is evident that many companies are shifting their malaria rapid diagnostic test (mRDT) production focus and redirecting the production pipelines to COVID-19 rapid diagnostic tests (RDTs).³⁰ The tool most widely used for malaria diagnosis is the RDTs, and the shortage of it will have the potential to endanger the test, treat, and track policy for malaria control by WHO.³¹

Since there is paucity of information on the use of IDSR data to determine health-seeking patterns of fever cases during public health emergencies in Sierra Leone, this study sought to identify interruptions in normal healthcare provisions and health-seeking behaviour of fever cases in six districts within Sierra Leone from the IDSR data. To also understand the underlying processes, focus group discussions were conducted.

Our findings may be helpful in directing policymakers on how to make health systems more robust to external shocks.

Operational Terms

Health-seeking behaviour: – is any action undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy.¹

Public's trust in the health system: – is the anticipation of receiving adequate and prompt healthcare services whenever needed.⁶

METHODS

A cross-sectional study using monthly reported IDSR data on malaria in the DHIS-2 platform, from 2012 to 2020 from six districts (Port Loko, Bo, Tonkolili, Bombali, Kenema, and Western Area Urban), and focus group discussions (FGD) with community members of both genders, from 18 years and older. The goal of the FGD was to better understand the participants' attitudes, beliefs and emotions regarding the country's healthcare system during outbreaks.

The services of research assistants (RAs) who were fluent in the local dialects and also familiar with the culture and geography of the study districts were recruited to lead the discussion sessions. A semi-structured discussion guide was developed that was simple and friendly to direct discussion (Appendix A). All community members 18 years or older were eligible to participate. Probability sampling based on a sampling frame from the 2015 population and housing census was used to select clusters. In each randomly selected community from the clusters, an adult aged 18 or older who had experienced the tragedies of either the EVD or COVID-19 epidemic was allowed to share an experience or express their opinions about the country's health system. The analytical sample in this study was 240 participants, with 40 participants from each of the study districts. There were five meetings held in each of the districts, as there were eight participants per meeting, and a total of 30 FGD meetings were held for this study.

Ethics Statement

Compilation of the IDSR data for malaria cases and the clearance to conduct group discussions within the study districts was approved by the Sierra Leone Ethics and Scientific Research Committee of the Ministry of Health and Sanitation (SLESRC 006/09/2022) and the Institutional Ethics Review Committee of Njala University, Sierra Leone.

Data Analysis

Secondary IDSR data collected from 2012 to 2020 of malaria cases were cleaned and read into the **R** software version 4.1.3. Total numbers per year and per district were tabulated and plotted to enable visual comparisons.

2. RESULTS

The IDSR data showed marked declines in malaria cases during the EVD epidemic and the COVID-19 pandemic as shown in Figures 1, 2 & 3 below.

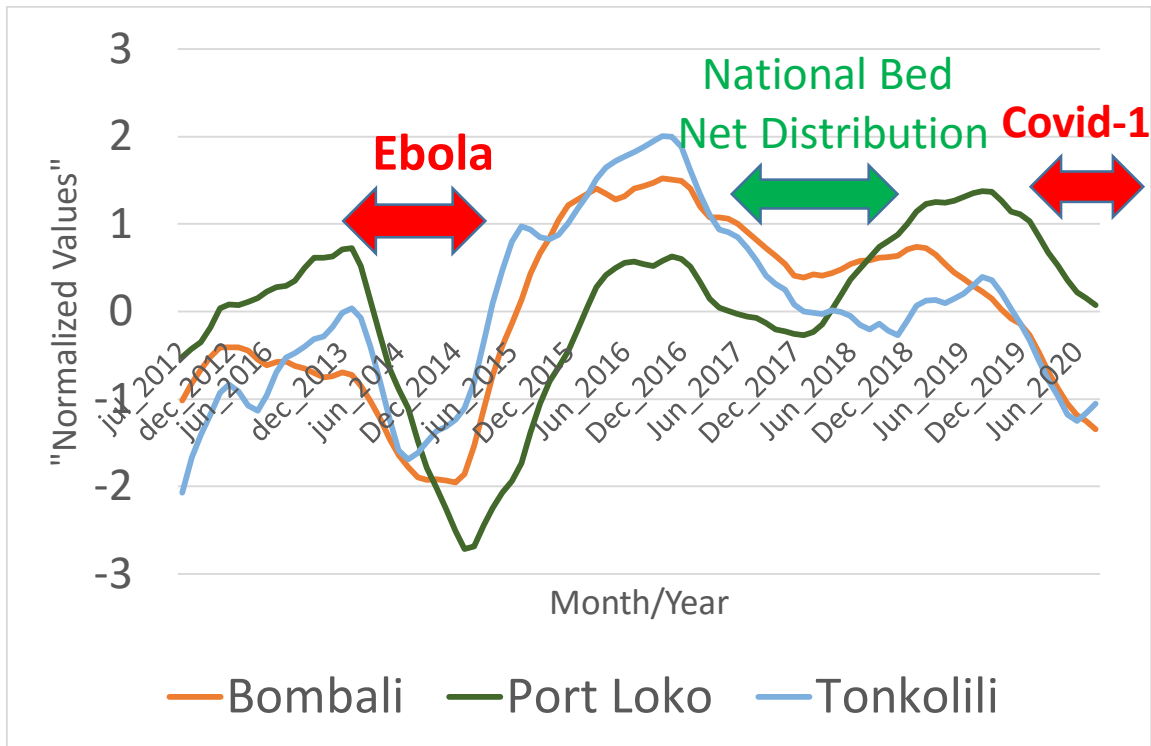


Figure 1: Trends in Fever Cases Health-seeking Behaviour during Public Health Emergencies in the Northern Districts (y-axis is normalized, i.e., Observation minus Mean values divided by the Standard Deviation)

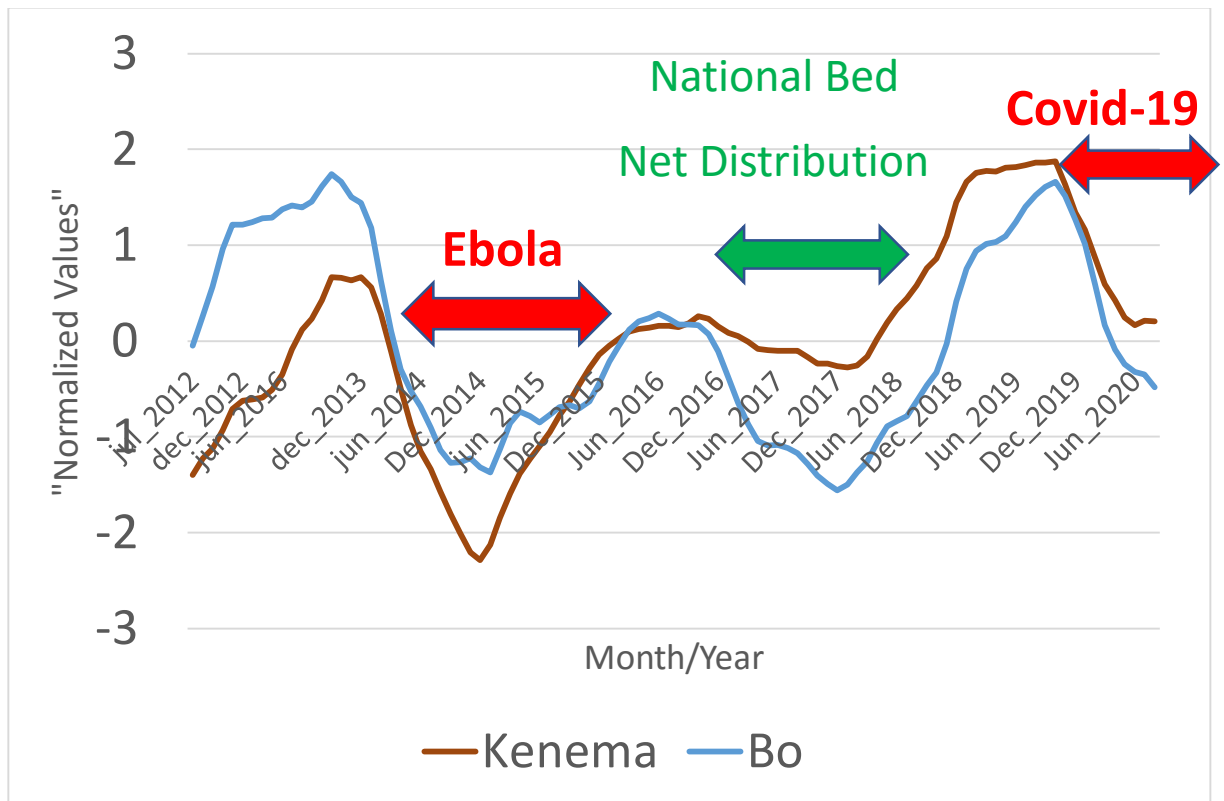


Figure 2: Trends in Fever Cases Health-seeking Behaviour during Outbreaks in the South-East Districts (y-axis is normalized, i.e., Observation minus Mean values divided by the Standard Deviation)

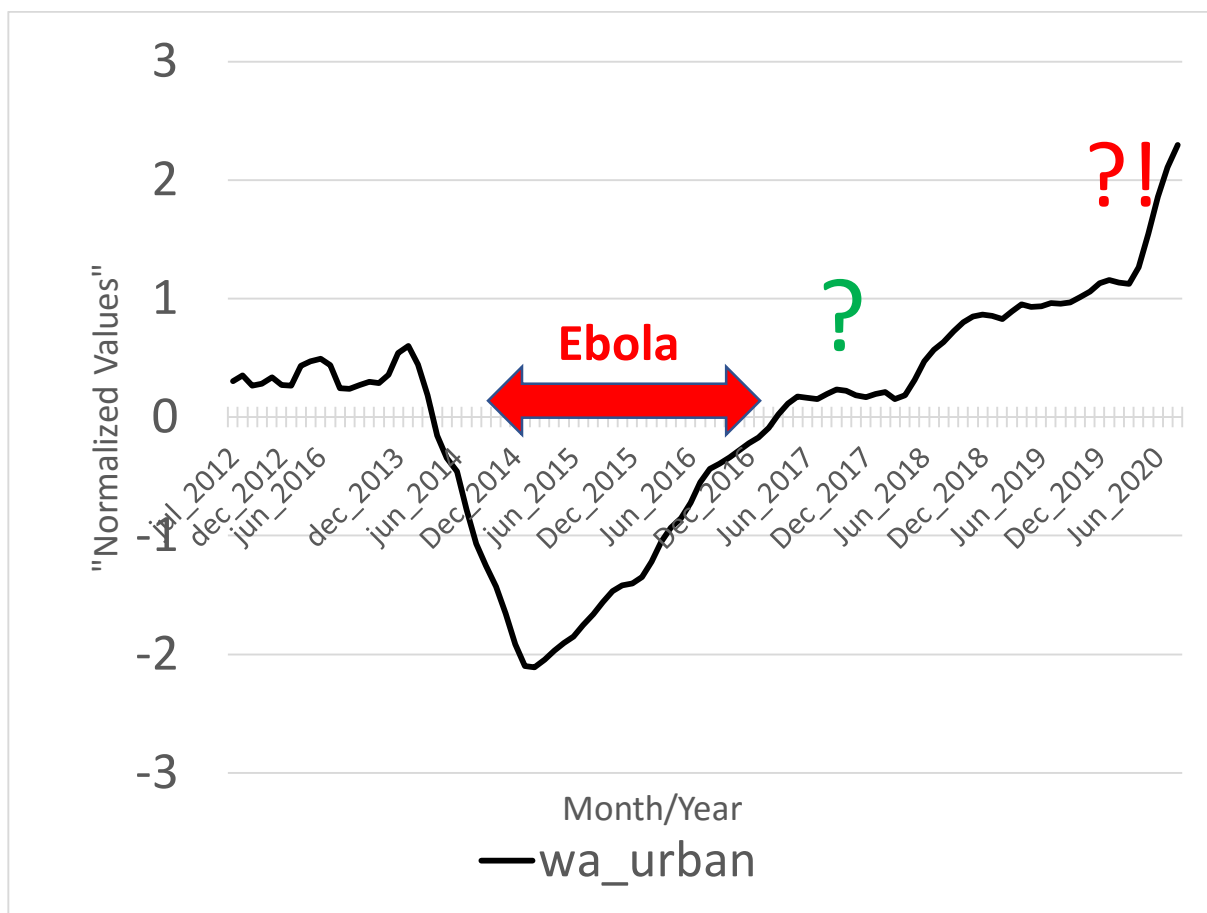


Figure 3: Trends in Fever Cases Health-seeking Behaviour during Outbreaks in the Western Area Urban (y-axis is normalized, i.e., Observation minus Mean values divided by the Standard Deviation)

The six districts (seen in Table 1) recorded a total of 247,641 positive malaria cases in the third quarter of 2013 pre-EVD period, but dropped drastically to 172,370 in the third quarter of 2014, at the peak of the epidemic, and 224,689 in the third quarter of 2015 during the EVD outbreak, while 261,140 was recorded in the third quarter of 2016, post-EVD period. Since the COVID-19 pandemic is ongoing, we only considered malaria case totals before and during the first surge in COVID-19 cases in 2020. The positive number of malaria cases reported in the third quarter of 2019 was 256,933, while during the first surge in COVID-19 cases after Sierra Leone’s index case was 202,748 in the third quarter in 2020. Numbers broken down by districts are found in the supplementary list.

Table 1. Quarterly Malaria Case Totals from 2012 – 2020

YEAR	QUARTER	TOTAL	TREND
2012	1	127,430	161193
	2	184,187	174824
	3	239,927	188007
	4	211,886	202038
2013	1	176,388	209185
	2	215,077	215234
	3	247,641	222074
	4	235,106	225405
2014	1	201,030	223642

	2	215,973	215376
	3	172,370	204954
	4	162,629	197208
2015	1	158,545	184882
	2	195,712	193399
	3	224,689	201244
	4	207,988	210175
2016	1	194,812	219641
	2	232,578	226982
	3	261,140	228414
	4	214,840	228002
2017	1	203031	223936
	2	224559	219413
	3	232949	214473
	4	207305	210469
2018	1	186523	210421
	2	208430	215783
	3	246144	222940
	4	238142	231293
2019	1	210217	237584
	2	249794	239199
	3	256933	239903
	4	241715	237485
2020	1	215639	232067
	2	218425	229001
	3	202748	225082
	4	225889	221127

Several quotes from the FGD expressed the people's loss of confidence in the healthcare system during public health emergencies, especially the EVD and COVID-19 epidemics.

Quotes from the Focus Group Discussions

FGD 001. Discussion held at Lumley Community on the 3rd October 2020 at 4:30 pm. Participants included young men within the ages of 20 – 35 years. Among them were students – from tertiary institutions (colleges, universities, technical and vocational) and secondary/high school; petty traders, community volunteers; heads of some youth groups within the Lumley community and its environs.

Responses: They all reported of being affected in one way or the other. Some lost relatives and household members to the deadly Ebola, some suffered stigmatization as a result of their infections, or being suspected and taken to holding centers. Others said their family members were infected by both conditions which led them into quarantine with hard suffering including but not limited to inadequate food, and safe water supply. This group reported that all sectors were greatly affected by these two (EVD and COVID-19) outbreaks in the country. Those that were students complained of great disruption in their studies, the hustlers and petty traders complained of bad economy especially during lock-downs at national as well as inter-district levels.

A young man (within the ages of 32 – 35 years) who was a petty trader and also peddling over-the-counter drugs had this story to tell: *“My experience during the Ebola outbreak was pathetic. One day, I went out to sell as usual and a customer called me in their house to buy some drugs. He was complaining that he has not been able to eat well for the past days so he wants some ORS and appetizer. I sold to him and went my way. The next day while I was about going out to for my survival, I had two visitors at my doorstep saying to me that they are searching for people who have been with people that has Ebola. To cut the long story short, they told me that my customer at such and such address whom I sold ORS to and some vitamins for appetite has died of Ebola and my household should be quarantined. I pleaded with them to allow me to go out and sell for that day so that my family can have enough as we stay in the quarantine, but before I could even finish speaking, the army officers that came along with the man and woman that were talking to me tied the rope around our ‘panbody’ instructing us to abide by the rules. We suffered from lack of food, safe water and stigma from our neighbors. My mom could not bear it up but took to mind. After about 12 days in quarantine with too many human right abuses, my mom started complaining severe headache as a result of stress. It became unbearable and we told the health workers about her condition. They called for the ambulance to take her to the isolation center and we later heard that she was taken to the Ebola treatment center (weeps! Weeps!) where she was reported dead. We had to start the quarantine all over again which was very terrible. I hate to recall my quarantine experience because it caused great suffering for me and my family.”*

Different responses were given by the participants. Some confirmed their visit to government hospitals/clinics during the Ebola epidemic, while others confessed of not seeking treatment at any of the government hospitals due to fear of Ebola, misconception and the inconsistent health education messages from the officials. Those that didn’t seek treatment at health facilities were involved in self-medication, and may sometimes seek treatment at drug stores. A handful of the group participants also expressed that they’ve been reluctant in visiting hospitals for care during COVID, especially within May-August 2020 due to their former experiences during the Ebola epidemic. They asserted that their withdrawal from seeking healthcare services at government facilities was as a result of the surge in COVID-19 cases within that period.

A third year Engineering student from Fourah Bay College, University of Sierra Leone, as one of the participants said:

“As for me, I never sought treatment at the public health facilities during Ebola, neither did I encourage any of my relatives nor close friends because, the illness we often suffer from in our household is malaria and common cold. These illnesses have similar symptoms to that of Ebola. I observed keenly that most patients that were actually suffering from malaria were been diagnosed of Ebola and hardly survive whenever they were taken to the Ebola treatment center.”

A community volunteer that was attached to the Lumley Health Center who was within the ages of 25 -30 said: *“When I started having body pains and fever as a community volunteer that needed to lead by example, I immediately went to the center for treatment as I already knew that my diagnosis will be typhoid-malaria. Immediately the nurses screened me, they referred me to the isolation unit where I was left all by myself throughout the day. When I asked one of the nurses why they were not coming to treat me, she told me to keep to myself until my Ebola test result was out. From that moment, I became worried and regretted going for there for treatment. As I kept waiting, one of my inmates was sentenced to death because his test result came positive and was taken to the Ebola treatment center. The nurses could not even come closer to me anymore and I spent over 24 hours there. All I did was to pray to God to save me and my prayers were answered as the Ebola test came negative but I suffered quiet a lot. At the end of the day, I was only sent home without any medication given to me, as if I went to the hospital for Ebola test. Such experience made me swear never to go to hospital nor any of my relatives until this trouble is taken away from our country. I then realized that the death of many patients during Ebola was mostly not because of the disease itself but the emotional torture.”*

However, a petty trader as one of the group participants had this to say: *“We have our ‘peppe doctor’ who treats us at home and we are ok with his treatment for now because anytime there is a disease outbreak, the hospitals will only focus on that disease and call any patient going for other treatment there as a suspect and that will make the community to push away”.*

Also, a young man within the ages of 36-40 years that was one of the ‘ataya bases’ head in that community said: *“If my pregnant wife was left to die in cold blood (crying...) just because she was bleeding during the time of Ebola, do you expect me to go or take my family members to hospital for treatment when they have brought another sickness, they call COVIV? God forgive.”*

The participants responded by saying that they never had much confidence and trust in the health system due their personal encounters and experiences as well as updates they got from others and the media. According to them, the healthcare system was never equipped to fight Ebola and at the same time provide treatment for other diseases. The healthcare workers had little or no knowledge about the disease and they were giving the public very confusing information about Ebola, the tools used by the laboratory technicians were doubtful as most of their results were false or misleading, not enough healthcare staff to serve the population as was required because so many people were left unattended even when the public was forced to report all illnesses to the hospital, etc. They were very much assertive pointing out evidences including the community volunteer's story. People who were forced to report any illness to the hospitals ended up not being attended to and some were misdiagnosed which also created doubt in the laboratory technicians, their tools and investigation results.

FDG 002. Discussion held at the Brookfields Community on the 4th October 2020 at 2:30 pm. Participants included the frontline healthcare workers such as Medical Officers, Community Health Officers, Nurses and Maternal and Child Health Aides. They were brought together in groups of like-professions and cadres with an hour and 30 minutes' discussion session for each group.

Responses: The Medical Officers (also known as doctors) expressed that they were taken unaware by the epidemic with little or no knowledge of the disease. They confessed that they were fighting an "unknown enemy" that claimed the lives of many senior colleagues in the medical profession which led to fear and panic among them. They said their practice and service provision was greatly affected as they became frightened by the daily increase in Ebola cases and deaths among the healthcare staff. They expressed that their patients also began losing confidence in them by accusing them of infecting their patients with Ebola. They continued that the challenges faced during COVID was much better than Ebola. Even though the memories of Ebola were revived, yet the insignificant case fatality had led to the nonchalant attitude of patients, and also making it difficult for them to believe that COVID is really in Sierra Leone.

A young medical officer from the group that was attached at the Connaught Teaching Hospital said thus: *"I became very much devastated after the demise of Dr. Cole, one of the senior physicians at Connaught Hospital due to Ebola that I hid myself from work. I was pressured by my friends and family members to stop work so that I won't infect them and later die just like the others have. I therefore had to go into voluntary isolation for fear of my life and the protection of my family."*

The Community Health Officers (commonly called CHOs) had their discussions immediately after the Medical Officers. This group of healthcare staff works alongside the medical officers in almost all of the district hospitals across the country. They played very significant role during the epidemic by working as frontline staff. According to them, their experience with patients was cordial initially and went aloof as the country recorded more cases with high fatality. They said they were stigmatized by most of their colleagues that stayed back from working in the frontline and that affected them emotionally, as well as socially. Some of them confessed that their only motivation was the bi-weekly remuneration and recording survivors from the Ebola Treatment Center (ETC). They said that most in-patients absconded from hospitals, while others failed to seek care at health facilities due to misconceptions and fear.

A CHO working at the Kingharman Road Hospital testified: *"I received influx of patients in my home for treatment and whenever I asked them to go to the health center for care, they would respond by saying to me that if I don't treat them, they would prefer going to the pharmacy rather than the hospital. When I asked why? they said whoever goes to the hospital will be taken as Ebola suspect and they will send you to the isolation unit and if you are unlucky, they will tell you that you have Ebola and start spraying chlorine around you. The chlorine will then suffocate you until you die just to confirm their lies. In this COVID period, the patients are not too bothered as they said because people are not dying much of COVID-19 when compared to Ebola."*

The Nurses and the Maternal and Child Health Aids were the last set to be interviewed from this group. Most of their experiences were very much unpleasant, to say the least. This group were the most at risk as they spent more time with patients in giving care as their profession demands.

A State Registered Nurse attached the Connaught Teaching Hospital said: *"I have never worked under pressure and fear until the Ebola struck our society and the recent surge in COVID-19 especially in the Western Area. My life, during Ebola was very much at stake and even now because of my duty station, the main referral hospital in the country. Several patients died of Ebola in my care and a*

few had died of COVID-19 also. It came to a point that patients never had trust in me and many others as they believe that we were infecting patients. That prevented them from going to hospitals for medical treatments”

FGD 008. Discussion held at Masuba Community in Makeni City, Bombali District, on 1st November 2020 at 2:30 pm.

Participants included adult women within the ages of 30 – 45 years. Among them were traders, housewives, heads of secret societies and students from higher educational and vocational institutions.

A secret societal head (Mamy Queen) as one of the group participants said: *“my pregnant women suffered a lot in Ebola time. Plenty died with their children without their husbands or other family members burying their bodies. They instead put the dead bodies in bags like rubbish and throw them into their graves. Let me tell you the truth that they were not dying for Ebola but the nurses were not attending to them when their labour begins because they were afraid that the women will give them Ebola. As a Mamy Queen, I feel very bad of that news and decided to save the other women by helping to deliver them at home. I and my companions will only refer cases that may turn to a bone in the throat. When the big ones started announcing plenty corona sickness all over, we kept a meeting warning the women to stop going to hospitals but get nurse to treat them and their families at home so that they will not go and leave them to die like Ebola time.”*

A male civil servant from the City Council who was one of the participants in Bo District said:

“I never sought treatment at any of the government health facilities during Ebola, and so did my relatives and very close friends because, our common illness that affects us is malaria which has the same symptoms like Ebola by then. While the Ebola numbers kept increasing, I, together with my friends became suspicious that most patients whose lab results said had Ebola were not true. We believed that they were actually suffering from either typhoid or malaria, but because they could not withstand the chlorine, their conditions became very serious and some died.”

He also continued saying that: “This COVID on the other hand resembles ‘fresh cold’ because of fever and cough that it has. We were again scared to go to hospitals so that the health workers will not give us COVID as they did during Ebola. That is why we are only observing them for now.”

3. DISCUSSIONS

The IDRS data showed a marked reduction in the number of malaria cases recorded in the third quarter of 2014 and 2015 for all six districts during the Ebola epidemic. Malaria and Ebola had fever as symptom, and whoever reported to the health facility with fever during the Ebola epidemic will be suspected for Ebola.^{26,33} Such encounter hindered people with fever from seeking care that led to reduction in malaria cases. By contrast in 2020 after Sierra Leone’s COVID-19 index case and the subsequent surge, only five districts recorded fewer malaria cases. The Western Area Urban (WAU) showed an increase in the number of malaria cases compared to the other districts presumably as a result of behavioral differences between people in the urban and rural settings. The self-medication by most community members especially those in the urban cities is responsible for the under-reporting of the malaria situation across the country. This is so because, most people are familiar with the signs and symptoms of malaria and no sooner they start experiencing those symptoms, they prefer going to drug stores to buy malaria pills rather than visiting health facilities for holistic care. The three Ts (test, treat, and trace) implemented by the National Malaria Control Program in the management of malaria³² are viewed by many as a mere waste of time amidst their busy schedules. Misconceptions, misinformation, fear, and the lack of adequate services came out strong as significant deterrents to seeking care at government hospitals.³³ Most of the misconceptions were generated from conflicting messages about Ebola by the country’s healthcare workers and some international agencies. The fear of the people was due to high case fatality and the belief that the frontline healthcare staff were the source of infection, and their excessive use of chlorine in ambulances and at isolation centres contributed to several deaths. They also feared that many of the laboratory results were misleading, also with the potential to cause stigmatization. They, however, preferred to self-medicate if they had any symptoms, rather than seeking care at health facilities. The inadequate staff and logistics to care for patients with other disease conditions during outbreaks compounded the public’s confidence to seek care, especially at the peak of the epidemics, as essential health program management staff were often reassigned to help control the outbreak.³⁴ Quotes from some respondents revealed that patients who attempted visiting health facilities for services were left unattended to, for several hours and later suspected as Ebola patients and taken to ETC while being suffocated with excess chlorine in the ambulance. Examining the trends in malaria cases over the period under study showed a complex pattern of peaks and troughs. A possible interpretation of this pattern was:

- i) 2014-2015 – Ebola reduces confidence in the public and the capacity of the hospitals to effectively give care to non-Ebola cases.

- ii) 2018 – National distribution of bed nets brought down the number of malaria cases only for those districts that utilized them appropriately.
- iii) 2020 – Covid-19 revived Ebola memories by preventing fever cases from seeking care at health facilities for fear of misdiagnosis (Figures 1&2).

However, the WAU showed a different pattern (Figure 3) from the other three (south, east, and north) regions. It was revealed from the FGD that the patterns of behaviour of people in the Freetown municipality were quite different from those in the provinces. The respondents from the WAU disclosed that their major deterrent to seeking care from health facilities was based on high case fatality. There was a great dip (Figure 3) in the trend of malaria cases during the EVD epidemic but an upward trend during the COVID-19. It was so because a high number of deaths from Ebola were recorded compared to the insignificant number of deaths recorded from COVID-19. It is therefore evident that the WAU manifested no restraint in seeking care. The long-term trend also revealed the impact of the bed net distribution campaign in 2018 by depicting a drop in the number of malaria cases in the south, east and northern districts with an exception of the WAU. This also clearly revealed the pattern of adherence to health interventions and their impact on Western Area settlers to the others in the provinces.

Rebuilding the public's trust in the healthcare system and the provision of adequate health services during public health emergencies require tremendous and concerted efforts, through effective risk communication during the epidemic, with adequate logistics, and deployment of adequate healthcare staff to respond to the epidemic, as well as to effectively manage other endemic diseases.

4. CONCLUSION

Fewer individuals with fever illnesses sought care across the six districts during the EVD epidemic of 2013 – 2016 and also during the first surge in COVID-19 cases within the study period. However, the Western Area Urban showed an exceptional pattern in health-seeking behaviour in 2018 and 2020. Striking, is perhaps, the fact that the reduction in seeking healthcare services was not as dramatic as might have been anticipated in the WAU. This may really reflect the establishment of separate Ebola center which may have reduced fear of acquiring infection in general healthcare. Further, the recovery in healthcare seeking after the EVD epidemic was surprisingly rapid, perhaps reflecting the public's perception that the epidemic had truly ended. The separation of epidemic cases from other healthcare problems may be an effect strategy in preventing the collapse of the healthcare system. FGDs are effective methods of identifying whether health messages to the public have been adequately communicated.

Recommendations

Based on the findings and discussions, the following recommendations are proposed to improve health-seeking behavior and strengthen the healthcare system during public health emergencies:

1. Government should Enhance Public Health Infrastructure by investing in establishing dedicated and adequately equipped facilities to manage epidemic cases separately from routine healthcare services, preventing disruptions in health service delivery during outbreaks.
2. Ministry of Health and Sanitation should Provide healthcare workers with regular training on managing public health emergencies, risk communication, and community engagement to rebuild trust and improve service delivery during crises. Also, they should Develop and disseminate clear guidelines to healthcare staff to avoid contradictory messaging that could lead to public fear and mistrust.
3. Policy Makers should Strengthen Health Communication Strategies by developing policies to improve community awareness about disease symptoms and the importance of seeking professional healthcare. Ensure that health intervention campaigns, such as bed net distributions, are paired with sustained follow-ups to maximize adherence and effectiveness.
4. International Organizations should Support Surveillance and Logistical Systems by Partnering with the government to strengthen Integrated Disease Surveillance and Response (IDSR) systems for real-time monitoring and reporting of health-seeking behaviors during epidemics. Provide financial and technical assistance to ensure consistent supplies of medical resources and support for epidemic and endemic disease management.
5. **Build Local Trust and Address Misconceptions BY THE Ministry of Health in** Engaging communities through targeted education campaigns to dispel misinformation and address cultural concerns about seeking care during epidemics. Facilitate dialogues between healthcare providers and community members to address fears, especially regarding the safety and reliability of health services during crises.

What is known about this Topic?

Public's wariness and fear due to misconceptions regarding the EVD epidemic, the health system and the frontline health service providers deterred healthcare utilization in public health facilities.^{26,34}

What this study added?

Surveillance (IDSR) data can capture health-seeking patterns during public health emergencies in Sierra Leone. Distrust in the health system during epidemics, especially the Ebola and COVID-19 diseases that share most symptoms with malaria, influenced fever cases health-seeking behaviour.

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