



UTILIZATION OF ESSENTIAL UNDER 5 HEALTH SERVICES IN SIERRA LEONE DURING THE COVID 19 OUTBREAK

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ABSTRACT

Background: In a health crisis the focus of health systems shifts away from providing essential health services to the management and containment of the crisis. This has devastating effects on vulnerable children under the age of five. This study was conducted to determine the utilization of essential health services for children under 5 in the Western area rural district of Freetown during the COVID-19 outbreak.

Methods: An explanatory mixed-methods cross-sectional study was done in two phases. First, a quantitative household survey of 300 caregivers of children under 5 from the two most populous communities within the western area rural district was done. Data was collected using questionnaires and analyzed using Microsoft Excel and SPSS. Then a qualitative exploration of the views of healthcare workers in the study area using focus group discussion was done. The qualitative data was analyzed with thematic analysis.

Results: Over 90% of respondents stated that they had under 5 health cards and 99% had sought routine immunization services for the under 5 children at a health care facility at least once. Of respondents surveyed 26% stated that there was a decrease in their utilization of essential under 5 health services as a consequence of the COVID-19 outbreak. Healthcare workers also noticed a decreased demand for under 5 health services in healthcare facilities across the district.





Conclusion: *There has been a decline in the utilization of under 5 healthcare services as a result of the COVID 19 outbreak. Health authorities and policy makers have to prioritize maintaining services to mitigate the potential consequences on children under the age of 5.*

Keywords: *COVID-19, under 5 Children, essential healthcare services, healthcare workers, Sierra Leone*

INTRODUCTION

People, efforts and medical supply all shift to respond to an emergency health crisis leading to a neglect of basic and regular essential services.¹ Sierra Leone recorded its first COVID-19 case on the 31st of March 2020 and by the 20th of June 2020 there were over a thousand confirmed cases of COVID-19 nationwide.² The collapse of essential health services is likely to have serious adverse health effects, especially on the most vulnerable populations including children.³

Mortality rates directly from COVID-19 appears to be lower in children and adolescent.⁴ However, children may be disproportionately affected by a disruption in routine health care services provision due to the COVID-19 pandemic.⁵ Modelling studies estimate that a disruption to essential health services lasting up to 12 months could lead to as many as 2.3 million additional deaths in children under 5 in low- and middle-income countries.⁶

A survey conducted in 105 countries found at least a partial disruption in routine immunization services in at least half of the countries surveyed since the start COVID-19 outbreak.³ Similar disruptions in Sierra Leone may therefore put vulnerable population of children under 5 at increased risk of vaccine-preventable deaths. The Sierra Leone Demographic Health Survey noted that as many 86% of children with acute respiratory infections symptoms, 75% of children that presented with fever and 75% of children with diarrhea all sought treatment from a health facility.⁷ If people may also stay away from health care facilities for fear of contracting COVID-19, it could have devastating effects on vulnerable children.

Health care workers are at the forefront in the response to emerging infectious disease outbreaks and are exposed to psychological stresses, stigma and burnout, increasing their risk of becoming infected⁸. A study found that non-front-line health care workers were even more at risk of contracting



the virus as they had less access to full PPE and their services are seen as less priority⁹. It is imperative to protect and support the health care workers that deliver essential services to under 5 children.

As a result of a dearth of studies determining the indirect impact of COVID-19 on essential Under 5 Health Services in a vulnerable nation like Sierra Leone previously ravaged by the EVD outbreak. This study was undertaken to determine if there was any change in the utilization of essential under 5 health services by caregivers of children under 5 as a result of the COVID-19 outbreak. The study also aimed to capture the views of the healthcare workers on the demand for under 5 services since the start of the COVID-19 outbreak and determine their confidence in the preparedness of the health system to cope with the outbreak without disruptions to rendering of essential under 5 services.

METHODOLOGY

An explanatory mixed-methods study combined a quantitative household survey and qualitative focus group discussion among healthcare workers.

Quantitative Study

Study Design

A descriptive cross-sectional study was conducted to determine the utilization of essential health care services during the COVID-19 pandemic using self-administered, structured and anonymous questionnaires. These were administered to caregivers of under 5 children within the Western Area Rural District.

Study Site

Waterloo community accounted for almost 48.1 per cent of the study area population in the 2015 housing and population census. Together with the York rural Ward, both communities accounted for 77.3 percent of population of the Western Area Rural district's population. These two communities; Waterloo and York were therefore selected due to their large population densities and ethnic diversity.

Participants and Data Collection



The sample size was calculated using the Yamane's formula.

$$n = \frac{N}{1 + Ne^2}$$

Where n is the required sample size

N is the population size (Western area rural had a population of 442,951 in the 2015 population census)

e is the confidence level (applied at 0.05)

Substituting into the formula $n = \frac{442,951}{1 + 442,951(0.05)^2}$

The sample size required was approximately 400 respondents

300 completely filled questionnaires from respondents were eventually analyzed. There was difficulty in finding willing participants who met the inclusion criteria while some questionnaires were discarded due to them containing incomplete data.

The households included in the study had to meet the criteria of having at least one child aged under 5 whose caregiver was present at the time of the study and consented to participate in the study. No more than one caregiver from a single household was surveyed and where a caregiver had more than one child under the age of five, questions were only asked about one randomly selected child.

The enumerators were university students who were recruited and trained. They were provided with masks and hand sanitizers and instructed on adequate social distancing and ethical protocols.

Data Analysis

Data was analyzed using Microsoft Excel 2020 software and the SPSS software version 20.0. The data was then presented in frequencies and percentages using tables.

Qualitative Study



Study Design

The qualitative aspect of this study used a phenomenological approach in the form of a focus group discussion with health workers working in community health centers in the study area which was conducted on the 13th of August 2020 to explore the experiences of these health workers in rendering essential care to under 5 children before and during the COVID-19 outbreak. There are 12 community health centers in this district and they were targeted in this study as they provide preventive, promotive and curative health care functions for children under 5 years.

Focus Group Discussion

Visits were made to six community health centers around the Western Area community and the participation of two representatives from each center was requested for a group discussion which was scheduled to be held at the community center at Lakka. Seven participants from four community health centers across the western area rural district honored this invitation and were eventually selected to participate in this study.

Data collection and Analysis

A semi-structured topic guide containing prompt questions to elicit response was used. All participants were asked to wear masks. The focus group discussion was held at the Lakka Community health center. Discussions were led by a trained facilitator in Krio, audio-recorded and subsequently transcribed and translated to English. The interview materials were reviewed and summarized and meaningful statements were extracted and formulated into the themes present.

Ethics

Ethical clearance was obtained from the Sierra Leone ethics and scientific review committee at the Ministry of Health and Sanitation. The respondents for both the quantitative and qualitative study provided informed consents before participating in the research. The information obtained in this study were kept confidential and used only for this research



QUANTITATIVE FINDINGS

Overview of participants

Of the 300 caregivers interviewed in the two communities, the majority (84%) were female; 242 respondents were aged between 18 and 35; only 1.3% of caregivers were older than 56 and they mostly identified as grandparents. Most of the participants had no tertiary education with 48% of them either having no formal schooling or just a primary level of education attained. The vast majority of respondents (69.3%) cared for children between the age of 1 and 5.

1. Distribution of parents/guardians' demographic and socio-economic characteristics

Demographic and Socio-economic Characteristics	Frequency (n)	Percentage (%)
Age		
Less than 18years	11	3.7
18 - 35years	242	80.7
36 - 55years	43	14.3
56years and above	4	1.3
Sex		
Male	48	16.0
Female	252	84.0
Educational Level		
Postgraduate	5	1.7
Degree	35	11.7
SSS	55	18.3
JSS	61	20.3
Primary	75	25.0
No formal schooling	69	23.0
Number of children in your care		
Less than three children	167	55.7



Three to five children	121	40.3
Six children and above	12	4.0

Number of children in your care who's aged is under five

One child	167	55.7
Two children	106	35.3
Three children	21	7.0
More than 3 children	6	2.0

Age of the child

0 -28 days	26	8.7
29 days -1year	66	22.0
1-5years	206	69.3

Source field data 2020

Utilization of under 5 healthcare services

Over 90% of respondents had under 5 health cards with 28.3% of them reporting that they had missed at least one scheduled routine vaccination. 85% of respondents the primary facility from which they obtained essential healthcare services for their children under 5 was the nearby community health center.

Of the respondents interviewed 99% had sought routine immunization services for the under 5 children at a health care facility at least once. This was confirmed verbally, and caregivers were not required to provide their children under 5 health cards for inspection. A total of 91.3% of respondents reported taking their children to a health facility when children displayed some common childhood symptoms while 8.7% said they treated the child at home mostly with over-the-counter medication or traditional herbs.

2. Utilization of Essential under 5 Health Services by respondents

Characteristic	Frequency (n)	Percentage (%)
Children with under five health cards		
Yes	272	90.7
No	28	9.3
Children who have missed any routine vaccines		



Yes	85	28.3
No	205	71.7
Caregivers who primarily take their children to the nearby community health center		
Yes	255	85.0
No	45	15.0
<u>Healthcare Services Utilized by Care givers</u>		
Routine Immunization services		
Yes	297	99.0
No	3	1.0
Supplementary Immunization services		
Yes	291	97.0
No	9	3.0
Supplemental feeding program		
Yes	29	9.7
No	271	90.3
Routine health services (weighing of child, milestone check, to collect medication like ARVs, Anti-TB drugs etc)		
Yes	162	54.0
No	138	46.0
Treatment of common childhood symptoms		
Yes	274	91.3
No	26	8.7
Symptoms treatment was sought for		
Fever	212	38.76
Respiratory symptoms	165	30.16
Diarrhea	141	25.78
Weight loss	29	5.3

Source field data 2020

Service utilization during COVID-19 outbreak

26% of respondents stated that there was a decreased utilization of essential health services for their children under 5 as a consequence of the COVID-19 outbreak. The most frequent reason for this was the fear of their children contracting COVID-19 at health facilities. 5.7% of caregivers stated that they had being discouraged/prevented from accessing essential health services despite their willingness to utilize these services. Only two caregivers mentioned that there had been a closure of health facilities due to the outbreak that prevented them from accessing care.



When asked the effect of not being able to access health care facilities had had on their children 25 caregivers stated that their child had missed a routine vaccination while nine caregivers stated their child had suffered a severe illness due to being unable to access timely care and 33 caregivers mentioned the inconvenience of having to take their child to another facility. Only one caregiver stated that she had temporarily being unable to collect ARV medication for her child and the reason for this was due to lockdown measures.

3. Utilization of Essential under 5 health services Since COVID-19 Pandemic

Characteristic	Frequency (n)	Percentage (%)
Has there being a decline in your demand for essential health services for your under-five due to COVID-19?		
Yes	78	26
No	222	74
Reasons for this		
Scared of child/children contracting COVID-19	51	58.0
No trust in health care workers	23	26.1
Lock-down measures and restrictions	8	9.1
Cannot afford health care services due to reduced earnings	6	6.8
Have you being discouraged/prevented from seeking health care service due to COVID-19		
Yes	17	5.7
No	283	94.3
Reasons of discouragement		
Closure of nearby health centers due to COVID-19	2	12.5
Inadequate medical supply for child	4	25.0
Poor attitude of healthcare workers	10	62.5
Result of not accessing health care services		
Missed vaccination	25	32.9
Severe illness of child	9	11.9
Not able to access supplemental food for malnourished children	8	0.5



Unable to access ARVs and Anti TB medication	1	1.3
Had to self-medicate/take my child to another facility to access care	33	43.4

Source field data 2020

Qualitative findings

Participants

A total of 7 HCWs (3 community health workers, 2 midwives and 2 nurses) were recruited for the study. All respondents were employed at community health centers around the western area rural district where they offered among other services essential health care to children under 5. Respondents were all non-front-line health care workers and their ages ranged from 31 to 50 years. Among the respondents, 4 (57.1%) were males, and 3 (42.9%) were females.

Two themes were identified from the analysis of the interviews. These were:

1. Perceived change in the utilization of essential under 5 health care services since the start of the COVID-19 outbreak

'Even before we had the first case of COVID-19, I mean when we were just hearing about it in China, Italy and America, people were panicking and some of them stopped coming to the hospital. The month after we got the first case was the worst but I think it is better now. Some children are now taking the vaccines they had missed. More parents are bringing their children and we are always ready to receive them'

The health workers all agreed that while there had not been a halt in the essential services rendered, there had been a change in the utilization of under 5 essential health services. Caregivers believed health facilities were unsafe and could potentially become a source of infection.

When asked about the effects of these actions, all the health workers agreed that children had missed out of important interventions due to the virus especially in the previous months. When speaking about the current state of affairs there was a general sense of optimism with the initial fear now replaced by a sense of confidence. Caregivers had become more confident and were utilizing under 5 healthcare facilities.



HCWs stated that as at the time of interview they were seeing a large volume of patients that was very close to pre-pandemic numbers.

2. Preparedness of health-care systems for the continuity of essential under 5 health services during the outbreak

'Even before COVID-19 these NGOs and government people are always conducting one IPC training or the other. We are grateful for that, when the outbreak started, we did other trainings to refresh our memory but it was nothing new to us. We are grateful for the trainings but that is not the main issue. We are suffering in terms of supply. Sometimes masks finish or even gloves. We have to use our own money because we are here to treat and can't send the children away. And we can't be waiting for supplies until we fall sick and die but it is really demotivating.'

The healthcare workers were doubtful that the health system was prepared to continue offering services seamlessly during the course of the outbreak. The health care workers were of the opinion that their roles were not valued and their needs not prioritized, with the government and its partners focusing on providing protective equipment for frontline staff at treatment and isolation centers. They acknowledged that some of their colleagues had temporarily left for frontline COVID 19 work which they claimed was more lucrative but denied that there were any staff shortages enough to affect delivery of essential care to under 5.

Healthcare workers generally believed that while they had continued to render essential services without interruptions; during the outbreak they worried that they were not supported in their efforts and in case of escalating COVID-19 cases they would be unable to continue providing care.

DISCUSSION

Caregivers were asked about their utilization of healthcare services for their children under 5. 90.7% of caregivers stated that their children had under 5 cards while 71.7% stated that their child had not missed any scheduled routine vaccination for their age. The SLDHS 2019 survey found that only 56% of children have received all basic vaccinations.⁷ This difference can be explained by the fact that this study was restricted to one district and had a smaller sample size. Other essential services utilized



by health care workers include: weighing of children, collecting routine medications, feeding supplies and the treatment of common childhood symptoms.

From the findings 26% of caregivers stated that there had been a decline in their utilization of these services as a result of the COVID 19 outbreak. A study conducted in Brazil showed an initial 20% decline in vaccination of children as a result of the outbreak.¹⁰ while a decrease in children attending hospitals has been seen in South Africa¹¹ and Ethiopia.¹² Almost 7% of caregivers had been actively prevented or discouraged from seeking care at health facilities. The major reason given for this is poor attitude of health care workers which they insist was worse as a result of the outbreak. Health care workers interviewed in this study admitted to a distrust of their patients. We postulate might result in unfriendly attitudes to caregivers. The major effect of being unable to access care was the need to self-medicate or take child to other medical facilities where care could be accessed. A study conducted found a similar trend of decreasing hospital visits and increased number of people self-medicating.¹³ Another frequent consequence stated was the missed vaccination of a child.

From our findings, 85% of caregivers of children under 5 recruited into this study stated that they took their children under 5 primarily to the nearby community health center for vaccination and other essential health services highlighting the role of health workers in community health centers in the provision of essential health services for under 5 children. It was therefore important to capture the views of these health care workers.

Overall, the health care workers interviewed believed that health systems are ill-prepared to cope with the COVID-19 outbreak. They spoke about a lack of PPE and other essential medical supplies at the facilities as one of the major challenges they were faced with. A recent study conducted among health care workers in Sierra Leone revealed similar findings with 78% of respondents revealing concerns about a lack of adequate PPE in their facilities¹⁴. In Zimbabwe lack of access to PPE and basic consumables including medicines and sundries was also seen as a barrier to health service delivery¹⁵. HCWs also spoke that some workers had temporarily being redeployed from community health centers to serve as front-line-health care workers. WHO notes that one of the key issues that can affect the supply of essential health services is the recruitment of staff into providing COVID



relief³. The HCWs denied that this had had any effect on their ability to provide care for under 5 children at the facilities. They insisted that there had not been any disruption in the provision of essential health services for under 5 children. This contrasts with a WHO survey conducted by WHO in 105 countries that found at least partial disruptions in half of the countries for rendering of essential services to children³. Health care workers however expressed concerns that such disruptions could become inevitable in the case of escalating cases of COVID-19.

The health care workers felt they were more at risk as non-front-line workers providing essential health services than the front-line health care workers but had been largely overlooked in terms of measures being put in place for their protection. These fears were similarly expressed in Tan BYQ et al which found that non-front-line health workers are at risk of nosocomial transmission and are worried about transmitting the infection to their families as they receive less intensive training on PPE and infection control measures than front-line health care workers.¹⁶ Despite challenges faced, they emphasized their commitment to continuing to provide essential care for under 5 children regardless of the risks involved. Similar commitment was made by HCWs in Lagos, Nigeria to continue their service irrespective of challenges.¹⁷

Health care workers described the utilization of essential health services by caregivers as fluctuating over the past months since the start of the COVID-19 outbreak. At the start of the outbreak caregivers avoided healthcare centers due to fear and mistrust and there was a decline in the utilization of services for children under 5. They however stated that over the weeks preceding the study, these fears were abating among the members of the community and there was a gradual return to pre-pandemic numbers of caregivers visiting facilities to access care. They attributed this renewed confidence to the low mortality rates of the virus. Identical views were confirmed in a community-based study in Nepal where over time fears about the outbreak decreased due to the low mortality rate¹⁸. Health care workers in this study were knowledgeable about the importance of caregivers continuing to utilize essential under 5 health services.



The household survey was subject to limitations as the sample size was restricted to 300 respondents in only two communities in the western area rural district. The qualitative research was also subject to limitations as it relied on participants' responses which may have been subject to desirability bias.

CONCLUSION

The findings suggest that there has been a decline in the utilization of essential under 5 health services in the western area rural district. This was confirmed by the caregivers of under 5 children and the healthcare workers providing these services in community health centers across the district. This could deeply impact under 5 health leading to increased morbidity and mortality. Maintaining under 5 health care services should therefore be a priority during the COVID-19 outbreak in Sierra Leone.

Conflict of Interest: None to declare

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