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HEALTH WORKERS CONCERNS DURING LETHAL EPIDEMIC: AN EXPERIENCE OF LASSA FEVER OUTBREAKS IN EBONYI STATE

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Abstract

This study examined Health Workers concerns during Lethal Epidemic: An experience of Lassa Fever outbreaks in Ebonyi State. Two hundred and eighty four (284) health workers from Alex Ekwueme Federal University Teaching Hospital, Abakaliki participated in the study. Health Workers Concerns were measured using Health Workers Concern Scale (HWCS), a self-developed questionnaires that assesses health workers concern during lethal epidemics. The design of the study was cross sectional survey. ANOVA and Bonferoni Post Hoc Test were used to analyze the data. Result showed that poor risk allowances, lack of reward for hard work, lack of Protective equipment, no definitive plan for either a staff who died while trying to contain an outbreak or their relatives, non-availability/poor state of the equipment to work with and poor response strategies to emergencies by government and healthcare institutions etc with weighted mean >3.0 were the major concerns of Health Workers. Findings equally revealed that Health Workers' areas of specialization have no significant influence on their commitment to duty during outbreak of deadly disease (F = 1.820; P = 0.109 > 0.05). Years of professional experience was found to significantly influence health workers attitude to work (F = 2.193; P = 0.049). Marital status was found not to be a determinant of commitment to duty among healthcare providers at such moment of health crisis (F = 1.705; P = 0.184) while gender was found to have no statistical significant influence on health workers' commitment to duty during outbreaks of deadly diseases (t = 0.315; P = 0.753 > 0.05). Finally, the study recommends that during health emergencies, the older and much younger health workers be utilized in combating disease outbreaks while less emphasis be paid to those with average/moderate year of experience.

Keywords: Health workers, Lethal epidemic, Lassa fever, Concerns, Outbreak

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Introduction

Over the years, the world allover witnessed series of epidemic outbreaks which threatened human existence. These epidemic included plague, cholera, smallpox, Asian flu, tuberculosis, malaria, Spanish flu, measles, chickenpox, hepatitis, yellow fever, meningitis, dengue fever, Japanese encephalitis, severe acute respiratory syndrome (SARS), Zika virus, syphilis, HIV/AIDS etc. Each of these diseases has at one point in time been described as lethal epidemic, or pandemic depending on the severity, temporal or geographic reach, or their ability to cause devastating effect. Most recently, the world has been bedeviled with unprecedented epidemic attack which has created serious concern among human folk. Africa and Nigeria in particular have had their own share of this lethal epidemic outbreaks. Amongst these deadly epidemics which have recently reared their ugly heads in Africa include, Covid-19, Ebola virus, Lassa fever and Human Immunno Virus. Apart from HIV/AIDS which has gained global recognition as a pandemic and also seem to defy medical research in the area of discovering appropriate vaccines for its cure, Africa has equally been grossly devastated by Ebola and Lassa fever in the recent times and thereby creating serious concerns among health-care professionals. Consequently, Lassa fever has been acknowledged to be endemic in Nigeria and other West African countries including Sierra Leone, Guinea, and Liberia. Other countries where Lassa fever cases have been reported include Mali, Ghana, Côte d'Ivoire and Burkina Faso, Togo and Benin (US. CDCP, 2018). The menace of Lassa fever in West Africa and Nigeria in particular cannot be under estimated. Being endemic in Africa, Lassa fever accounts for about 300,000 to 500,000 cases and 5000 deaths occurring annually across Nigeria, Sierra Leone, Guinea, and Liberia. However, about 70-80% of Lassa virus infections remain asymptomatic, mild or self-limiting and in most cases may pass unnoticed (Nasir, et al, 2015; WHO, 2017; Ogbu, et al, 2007; Azeez-Akande, 2016). In Nigeria, the devastating effect of Lassa fever has become quite worrisome and has literarily engulfed all the geopolitical zones as well as individual states. This no doubt may have created serious anxiety and concern in the whole nation and among the healthcare practitioners as they seem to be the major victims of this epidemic. Ajayi, et al, (2013) acknowledged it as an epidemic-prone disease dreaded by health workers and the community. The threat of Lassa fever as an epidemic-prone disease in Nigeria is indicated by an alert threshold of a single suspected case and an epidemic threshold of a single confirmed case, by the Nigeria Federal Ministry of Health (Inegbenebor et al, 2005). In fact, the seroprevalence of Lassa fever in Nigeria is about 21% (Tomori, et al, 1988; Ekaete, et al, 2015). Since 1969 when Lassa was discovered in Borno State, Nigeria, Lassa fever has been found intermittently to be ravaging different states of the nation such as Plateau, Anambra, Kaduna, Imo, Edo, Enugu, Lagos, Yobe, Akwa Ibom, Taraba, Rivers, Zamfara, Nasarawa. Others include Ebonyi, Ondo, Bauchi, Benue, Kogi, Delta, Osun, FCT, Gombe, Ekiti etc. (NCDC, 2012, 2017; 2018, Fisher-Hoch, et al, 1995; FMOH, 2005; McCormick, 1987, Omilabu, et al, 2005 & Emmerich P, et al. 2003 & 2004). The case of Ebonyi State and how it affects health workers in Nigeria generally is particularly a thing of concern. Since the first case of Lassa fever in Ebonyi State in 2005 (Ogoina, 2013), Lassa fever outbreak has become an annual event in the State occurring between January – March each year with its attendant death

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toll on the increase despite several steps taken by the health care professionals both local and foreign to curb the menace. Surprisingly, health workers have been reported victims of this epidemic. For instance, in 2017 out of eight (8) cases reported (confirmed + probable + suspected) between (Feb. 4 – 10, 2017) in the State, three (3) were confirmed dead (NCDC, 2017). Out of which health workers were involved both the recorded death incidents and the casualties. The story also is not different in 2018. From 1st January to 4th March 2018, a total of 1121 suspected cases were recorded (NCDC, 2017). Of these, 353 were confirmed positive, 8 were probable, 723 were negative and 37 were awaiting laboratory results (pending). During the period under review, 18 States were said to be active with the disease. They included (Edo, Ondo, Bauchi, Nasarawa, Ebonyi, Anambra, Benue, Kogi, Imo, Plateau, Lagos, Taraba, Delta, Osun, Rivers, FCT, Gombe and Ekiti). Out of this total cases identified, sixteen health care workers were reported to be affected in six states of the federation. Ebonyi (9), Nasarawa (1), Kogi (1), Benue (1), Ondo (1) and Edo (3) with four deaths in Ebonyi (4) and Kogi (1). Cumulatively, 110 deaths were recorded within the stated period in Nigeria (NCDC, 2018). The illustrated scenario is similar to the experience of 2014, 2015 and 2016 particularly in Ebonyi State (NCDC, 2018). However, the situation seem to be wearing new look lately (from 2021 till date) owing to the aggressive intervention by the Medicine San Frontiers (MSF) (Doctors without border). From the above statistics, it could be seen beyond doubt that Ebonyi health workers have had higher cases comparatively from the disease. Since the recent past, no year passes by in the state without 1 or 2 health workers being a victim of Lassa fever. This no doubt increases the concern of health workers with every new case diagnosed. As a result, this has regularly created anxiety, worry, panic and serious concerns among healthcare givers leading to unwholesome practices including absenteeism, increased excuses from duty and outright abandonment of duty. Thereby leaving the innocent victims of these epidemics to their fate. The hospital authorities on the other hand, often seemed to be handicapped or lack the willpower to influence the attitude/behavior of their employees during these critical moments. This however, may explain why it appears relatively difficult to nib some of these diseases in the bud since people who are meant to tackle the menace are not readily available at all time for fear of uncertainties, lack of working tools, poor motivation, lack of conducive environment etc. For instance, during the outbreak of Lassa fever in Ebonyi State in 2018 that claimed many lives, it was observed that most health workers including doctors, nurses, pharmacists, laboratory scientists, psychologists and other support staff of Alex Ekwueme Federal University Teaching Hospital, Abakaliki temporarily stopped coming to work and the entire hospital community was almost deserted. Likewise, it was reported that during this period most of the patients referred from Ebonyi State to other neighbouring hospitals within the South East of Nigeria were all rejected for fear of contracting the virus or infecting their facilities thereby undermining their ethical principles. This scenario was equally similar to the experience of 2016 and 2017 outbreaks. This particular attitude negates the standard of International best practices as advanced by Gates, (2015) which maintained that the best way to prepare for an epidemic is to have a disease surveillance system, be able to quickly dispatch emergency workers, especially local-based emergency workers, and have a legitimate way to guarantee the safety and health of health workers (Gerson, 2015). This poor

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attitude to work among health care workers during outbreak of infectious diseases appear to cut across borders. The findings of Deepa, et al, 2015 and Wafaa, et al, 2020 gave credence to the assertion. From the above, outbreak of contagious diseases connotes a lot to Healthcare Workers and to a reasonable extent influences their commitment to duty. The psychological component, also, is of great essence. Apart from the physical effect of the disease, most Health Care providers exhibit a great deal of psychological symptoms and effects, such as death anxiety, fear of intermittent witness of the dead and the dying, fear of infecting the family, emotional distress of delivering bad news, fear of being contaminated, the emergence of obsessive thoughts, the bad feeling of wearing personal protective equipment, conflict between fear and conscience, and the public ignorance of preventive measures (Galehdar, et al, 2020). Galehdar, et al (2020) also opined that during the last outbreak of COVID – 19, Health Workers experienced a variety of psychological distress during care of patients with COVID-19 in Iran. According to them, through proper planning by authorities, it is possible to manage the risk factors of mental health distress in nurses and improve their mental health status. Also, Khanal, et al, (2020), reported that Health care workers exposed to COVID-19 might be at increased risk of developing mental health problems. Their finding revealed a considerate proportion of anxiety, depression and insomnia symptoms among health workers during the early phase of the pandemic in Nepal. Health workers facing stigma, those with history of medication for mental health problems, and those reporting inadequate precautionary measures in their workplace were more at risk of developing mental health outcomes (Khanal et al, 2020). According to Khanal et al, (2020), focus on improving mental wellbeing of health workers should be immediately initiated with attention to reduction of stigma, ensuring an adequate support system such as personal protective equipment, and family support for those with history of mental health problems. Finally, in another study by Cabarkapa, Sarah, Jerome, Chee, (2020) on the psychological impact of COVID-19 and other viral epidemics on front-line healthcare workers and ways to address it. Findings suggest that the psychological implications to HCWs were variable with several studies demonstrating increased risk of acquiring trauma or stress-related disorders, depression and anxiety. Fear of the unknown or becoming infected were at the forefront of the mental health challenges faced. Being a nurse and being female appeared to confer greater risk. The perceived stigma from family members and society heightened negative implications; predominantly stress and isolation. Coping strategies varied amongst the contrasting sociocultural settings and appeared to differ amongst doctors, nurses and other HCWs. Implemented changes, and suggestions for prevention in the future consistently highlighted the need for greater psychosocial support and clearer dissemination of disease-related information.It is as a result of this backdrop that the researcher intends to find out the underling factors that explain the behavior of health workers during outbreaks of deadly infectious diseases. What are their concerns during such moments that informed their perceived poor attitude to work? Whether their areas of specialization (profession) influences their commitment to duty during outbreaks of deadly diseases? To ascertain whether their years of professional experience contribute to their attitude to work when there is an epidemic of infectious diseases. To determine the role of marital status on occupational involvement/commitments during outbreaks

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of lethal epidemics? Finally, to ascertain whether there are attitudinal differences among the genders on occupational involvement/commitments during health emergencies.

Method

Participants

Two hundred and eighty four (284) health workers participated in the study. All the participants were purposively drawn from Alex Ekwueme Federal University Teaching Hospital, Abakaliki. The hospital has two campuses and staff from both campuses had equal chances of participating in the study. In this study, Health workers designated as doctors, nurses, laboratory scientists, pharmacists, psychologists, radiographers. Other participants included, orderlies and other support staff such as health information management officers, account, medical & social welfare and administrative staff. These workers are so selected because their responsibilities in the named institution related to patient's care and welfare that are pare of patients' overall treatments. Demographically, the selected workers consisted of one hundred and two (102) males, while one hundred and eighty-two (182) were females. Their ages are 18years and above. They were all literate and were able to communicate in English. Participation was strictly based on voluntary basis and was stated in the questionnaires completed by participants.

Procedure

Approval for the study was granted by the research ethics committee of Alex Ekwueme Federal University Teaching Hospital, Abakaliki. All procedures performed in this study were in accordance with the ethical standards of the approving research committee, and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Five health workers were recruited and trained by the researchers on how to fill the questionnaires, guide the respondents and for the purpose of data collection. The research assistants consisted of 2 nurses, 1 doctor, 1 orderly and 1 administrative officer. Eligible health workers were approached in their respective Departments, Units, Clinics and Wards. The purpose of the study was explained to them. In order to ensure anonymity/confidentiality, the health workers were informed that their name(s) was not required in completing the questionnaire. Health workers who consented to take part in the study by signing the informed consent form were given the paper and pencil questionnaire form for completion. The research assistants were on ground in the setting to inspect the questionnaire and participants were encouraged to provide every required information in the form before returning the questionnaire.

Instrument

The data for the study were collected using Health Workers Disease Outbreak Concerns Scale (HWDOCS), a self-developed questionnaires designed to assess health workers concern during lethal epidemics. The questionnaire consisted of 20 items with a 5-point Likert form of responses (strongly disagree, disagree, undecided, agree and strongly agree) designed to assess the concerns of health workers during outbreak of infectious diseases. The scoring of all the items was by direct scoring. To guaranty the reliability and validity of the instrument, after the development of the scale, it was given to two independent Senior lecturers at the Department of Psychology, University of

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Nigeria, Nsukka for both construct and face validity assessment of which they unanimously agreed to be suitable for the study. Thereafter, the scale was given to a Professor of Clinical Psychology at Nnamdi Azikiwe University, Awka for a review and later was confirmed to be apt after minor corrections. To further justify the validity of the instrument, a factor analysis was done. Internal consistency of the items were examined using Cronbach's alpha. The alpha were moderate: .835 and standardized .834. Overall, this analysis indicated that the factors were moderately internally consistent.

Design/Statistics:

The study adopted a cross-sectional survey design. Student t-Test, ANOVA and Post Hoc (Bonferoni pairwise test) were utilized as the statistical tools. The student t-Test was used for comparison between two factors, while ANOVA was used for comparison between more than two factors. More so, the significant factors in ANOVA were further tested with Post Hoc (Bonferoni pairwise test).

Results

Table 1: Socio-demographic characteristics of the health workers

Characteristics	Respondent	Percentage
Gender		
Male	102	35.9
Female	182	64.1
Age Group		
<=25yrs	13	4.6
26 - 30yrs	37	13.0
31 - 35yrs	53	18.7
36 - 40yrs	73	25.7
41 - & above	108	38.0
Marital Status		
Single	60	21.1
Married	212	74.6
Widowed	12	4.2
Highest Level of Education		
Primary	1	0.4
Secondary	14	4.9
Tertiary	147	51.8
Post graduate	122	43.0
Designation/Profession		
Doctor	73	25.7
Nurse	132	46.5
Laboratory Scientist	29	10.2
Pharmacist	24	8.5

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Orderlies	18	6.3
Others (Specify)	8	2.8
Year of professional experience		
1 – 5	44	15.5
6 – 10	83	29.2
11 – 15	91	32.0
16 – 20	31	10.9
21 – 25	17	6.0
26 and above	18	6.3
Religion		
Christian	280	98.6
Traditionalist	2	0.7
Others (specify)	2	0.7

The demographic information as presented in table 1, shows majority of the participants 182 (64.1%) were females. Majority 73 (25.7%) and 108 (38.0%) were between 36 – 40years and 41 & above, respectively. Greater proportion of the health workers, 147 (51.8%) and 122 (43.0%) had tertiary and post graduate. The result also indicate, almost half 132 (46.5%) of the health workers were Nurses and 73 (25.7%) were Doctors. While 91 (32.0%) and 83 (29.2%) respectively have worked 11 – 15years and 6 – 10years. They were predominantly Christians 280 (98.6%)

Table 2: Concerns of health workers during outbreaks of deadly infectious disease

S/N	Item	SD (%)	D (%)	U (%)	A (%)	SA (%)	Sum	Mean ±Std
1	Risk allowance are not encouraging enough for me	19 (6.7)	14 (4.9)	17 (6.0)	34 (12.0)	200 (70.4)	1234	4.35 ±1.20
2	Workers are not adequately motivated or rewarded for their commitment and hard work	29 (10.2)	19 (6.7)	6 (2.1)	36 (12.7)	194 (68.3)	1199	4.22 ±1.36
3	I am concerned with the Poor response strategies to emergencies by government and healthcare institutions during outbreaks of infectious diseases	24 (8.5)	20 (7.0)	20 (7.0)	53 (18.7)	167 (58.8)	1171	4.12 ±1.30
4	Protective equipment to work with are not readily available at all times	21 (7.4)	22 (7.7)	23 (8.1)	80 (28.2)	138 (48.6)	1144	4.03 ±1.24
5	Our hospitals are poorly equipped with the required instruments to manage disease outbreaks	27 (9.5)	25 (8.8)	28 (9.9)	59 (20.8)	145 (51.1)	1122	3.95 ±1.36
6	I think the authorities/governments do not adequately fund the effort to tackle disease outbreaks	39 (13.7)	16 (5.6)	30 (10.6)	50 (17.6)	149 (52.5)	1106	3.89 ±1.45
7	My hospital does not have definitive plan for either a staff who died while trying to contain an outbreak or the relatives	46 (16.2)	23 (8.1)	29 (10.2)	37 (13.0)	149 (52.5)	1072	3.77 ±1.54
8	It worries me that the disease may not present with clear/notable clinical symptoms	36 (12.7)	35 (12.3)	40 (14.1)	71 (25.0)	102 (35.9)	1020	3.59 ±1.41
9	I am not confident that my facility have sufficient equipment (e.g. isolation units, protective gears etc) to protect health workers from contagious diseases	52 (18.3)	22 (7.7)	31 (10.9)	65 (22.9)	114 (40.1)	1019	3.59 ±1.52

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10	I fear that required vaccines are in shortage or not available at all	32 (11.3)	40 (14.1)	52 (18.3)	59 (20.8)	101 (35.6)	1009	3.55 ±1.39
11	Regular training/education required to face emergencies or outbreaks are not often provided by my hospital	48 (16.9)	45 (15.8)	33 (11.6)	81 (28.5)	77 (27.1)	946	3.33 ±1.45
12	Poor knowledge of the symptoms or other diagnostic criteria of some of the diseases or epidemics adds to the concern	50 (17.6)	37 (13.0)	46 (16.2)	78 (27.5)	73 (25.7)	939	3.31 ±1.43
13	I fear I will be infected	75 (26.4)	27 (9.5)	17 (6.0)	74 (26.1)	91 (32.0)	931	3.28 ±1.62
14	I am afraid I will abandon or lose my loved ones	57 (20.1)	56 (19.7)	53 (18.7)	46 (16.2)	72 (25.4)	872	3.07 ±1.48
15	My social life suffer greatly during epidemics including reduction in the number of social visitors I get.	19 (6.7)	55 (19.4)	116 (40.8)	75 (26.4)	19 (6.7)	872	3.07 ±1.00
16	I am scared of going through the treatment process if I get infected	90 (31.7)	46 (16.2)	23 (8.1)	47 (16.5)	78 (27.5)	829	2.92 ±1.64
17	I am worried the stigma associated with the disease will affect my living in the community.	74 (26.1)	49 (17.3)	46 (16.2)	66 (23.2)	49 (17.3)	819	2.88 ±1.46
18	Health workers lack the basic skills or technical knowhow to handle some epidemic outbreaks	97 (34.2)	47 (16.5)	32 (11.3)	61 (21.5)	47 (16.5)	766	2.70 ±1.53
19	My family tends to isolate me during epidemic for fear of infection	63 (22.2)	88 (31.0)	71 (25.0)	59 (20.8)	3 (1.1)	703	2.48 ±1.08
20	I am scared I will die	142 (50.0)	36 (12.7)	30 (10.6)	41 (14.4)	35 (12.3)	643	2.26 ±1.49
	Global Mean						**971**	**3.42 ±0.69**

Table 2 shows the items that describe the concerns of the health workers during outbreak of deadly infectious disease. The items were rated based on their weighted mean. Items with weighted mean >3.0 were accepted as concerns of the health workers. The items with weighted mean more than 4.00 include; "Risk allowance are not encouraging enough for me" (4.35), "Workers are not adequately motivated or rewarded for their commitment and hard work" (4.22), "I am concerned with the Poor response strategies to emergencies by government and healthcare institutions during outbreaks of infectious diseases" (4.12), and "Protective equipment to work with are not readily available at all times" (4.03). Other items with weighted mean between 3.50 – 4.00 include; "Our hospitals are poorly equipped with the required instruments to manage disease outbreaks" (3.95), "I think the authorities/governments do not adequately fund the effort to tackle disease outbreaks" (3.89), "My hospital does not have definitive plan for either a staff who died while trying to contain an outbreak or the relatives" (3.77), "It worries me that the disease may not present with clear/notable clinical symptoms" (3.59), "I am not confident that my facility have sufficient equipment (e.g. isolation units, protective gears etc) to protect health workers from contagious diseases" (3.59), and "I fear that required vaccines are in shortage or not available at all" (3.55). However, only five (5) items were rejected because their weighted mean were not up to 3.0 mean criterion. They include items number 16 (2.92), 17 (2.88), 18 (2.70), 19 (2.48) and 20 (2.26) respectively as shown in table 2 above. Generally with the global mean and standard

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deviation of (3.42, SD = 0.69) more than mean criterion of 3.0, we accept the items. This implies that the concerns of the health workers during outbreak of deadly disease were significant and a serious source of concern.

Table 3: Comparison of influence of area of specialization of health workers' on their commitment to duty during outbreaks of deadly diseases

Profession	N	Mean±SD	F	P-value
Doctor	73	3.36±0.58	1.820	0.109
Nurse	132	3.36±0.76		
Laboratory Scientist	29	3.56±0.59		
Pharmacist	24	3.54±0.74		
Orderlies	18	3.78±0.53		
Others (Specify)	8	3.25±0.78		
Total	284	3.42±0.69		

Result in table 3 shows that area specialization does not have significant influence on health workers' commitment to duty during outbreak of deadly disease (F = 1.820; P = 0.109 > 0.05) on a cumulative point of view. However, when the result were further subjected to Bonferoni Post Hoc Test, a significant difference was noted between Doctors and Orderlies (P = 0.019 < 0.05), Nurses and Orderlies (P = 0.015 < 0.05) with respect to their concerns and attitude to work. This implies, based on the weighted mean of their concern Orderlies (3.78) were more concerned than Doctors and Nurses (3.36).

Table 4a: Comparison of year of professional experience influence on health workers' commitment to duty during outbreaks of deadly diseases

Prof. Experience (Years)	N	Mean ±SD	F	P-value
1 – 5	44	3.39 ±0.66	2.193	0.049
6 – 10	83	3.52 ±0.74		
11 - 15	91	3.32 ±0.64		
16 - 20	31	3.61 ±0.74		
21 - 25	17	3.53 ±0.44		
26 and above	18	3.10 ±0.79		
Total	284	3.42 ±0.69		

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Table 4b: Pair-Wise Comparison (t-Test)

(I) Prof. Experience (Years)	(J) Prof. Experience (Years)	Mean Diff.	Std. Error	P-Value
1 – 5	6 – 10	0.13947	0.12770	0.276
	11 – 15	0.06984	0.12574	0.579
	16 – 20	0.22445	0.16058	0.163
	21 – 25	0.14124	0.19556	0.471
	26 and above	0.28801	0.19160	0.134
6 – 10	11 – 15	0.20931*	0.10394	0.045
	16 – 20	0.08498	0.14414	0.556
	21 – 25	0.00177	0.18230	0.992
	26 and above	0.42748*	0.17805	0.017
11 – 15	1 – 5	0.06984	0.12574	0.579
	16 – 20	0.29429*	0.14241	0.040
	21 – 25	0.21109	0.18093	0.244
	26 and above	0.21816	0.17665	0.218
16 – 20	21 – 25	0.08321	0.20667	0.688
21 – 25	26 and above	0.42925	0.23159	0.065

From the table (4a) above, a cumulative analysis showed that year of professional experience did not have statistical significant influence on health workers' commitment to duty during outbreak of deadly disease ($F = 2.193$; $P = 0.055 > 0.05$). However, when the results were further subjected to Bonferoni Post Hoc Test (table 4b), a significant difference was noted on health workers' attitude to work with particular reference to the duration of their year of work experience. For instance, health workers with working experience between 6 – 10years and 11 – 15years ($P = 0.045 < 0.05$), 6 -10years and 26 & above ($P = 0.017 < 0.05$). Again, there was a significant difference on commitment to duty between health workers that have 11 – 15years and 21 – 25years working experience ($P = 0.040 < 0.05$). This implies, based on the weighted mean of their concern, years of experience has a significant influence on the health workers concerns and involvement during deadly disease outbreak.

Table 5: Comparison of marital status influence on health workers' commitment to duty during outbreaks of deadly diseases

Marital Status	n	Mean ±SD	F	P-value
Single	60	3.31 ±0.70	1.705	0.184
Married	212	3.43 ±0.70		
Widowed	12	3.69 ±0.37		
Total	284	3.42 ±0.04		

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There is no significant difference on health workers' attitude to work when compared their marital status during a deadly disease outbreak (F = 1.705; P = 0.184). Even after subjecting the comparison to Bonferoni Post Hoc test, there is still no significant influence noticed among the different marital status of the health workers.

Table 6: Comparison of Gender influence on health workers' commitment to duty during outbreaks of deadly diseases

Gender	N	Mean ±SD	t	P-value
Male	102	**3.40 ±0.55**	**0.315**	**0.753**
Female	182	**3.43 ±0.76**		

The finding revealed that gender does not have statistical significant influence on health workers' commitment to duty during outbreaks of deadly diseases (t = 0.315; P = 0.753 > 0.05). This implies that the gender of the health workers plays no significant role to their commitment to duty during outbreak of lethal diseases.

Discussion

This study investigated Health Workers Concerns during Lethal Epidemic: A case study of Lassa fever in Alex Ekwueme Federal University Teaching Hospital, Abakaliki. Interests were to determine what these Concerns are and also to assess whether other variables of Health workers such as areas of specialization, years of professional experience, marital status and gender can contribute to health workers' attitude to work during periods of health emergencies. The findings revealed that all the test items were strong indicators of health workers' concerns. However, fifteen (15) out of the twenty (20) items of the instrument that described Health Workers' Concerns were generally endorsed by the workers as major sources of concerns and by extension contribute to their perceived poor attitude to work when there are outbreaks of deadly infectious diseases. They include item 1-15. This finding is consistent with the findings of the previous researchers (Omeh, et al, 2017; Saranya, et al, 2018; Duval, et al, 2020; WHO, 2020; Wang, et al, 2020; Sahashi et al, 2021) which maintained that for a Health worker (s) to function well in moment of health emergencies, the government or institutions must endeavor to address the described items which unarguably influence their commitment to duty. However, although the last five (5) items mean were seemingly less than 3.0 global mean on individual account but generally with the global mean and standard deviation of (3.42, SD=0.69) more than mean criterion of 3.0, we accept the items. The response in table 2 above, does not necessarily imply that there are not factors to Health Worker's attitude to work during outbreaks of deadly infectious diseases but simply may reflect an attempt by the Workers to protect their integrity and stake as professionals. For instance in item 18

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in the same table 2 above which stated "Health workers lack the basic skills or technical knowhow to handle some epidemic outbreaks", in this regards, no Health Worker will wholeheartedly agree to it even when they maybe element of truth in it in order not to portray themselves in a negative dimension to the public since they are the last hope of common man on the street at such moment. This could be justified with their responses on items 8, 11 and 12 where they expressed serious concerns over their limited knowledge of the disease symptoms or other diagnostic criteria, pattern of presentation of some of the diseases as well as the quest for regular training to enhance their competency. This no doubt, may suggest that Health Workers lack the technical knowhow required to face some of the emerging disease outbreaks but only tried to protect their stake, hence such cannot be denied by anyone and therefore should be regarded as a serious factor that may account for Health Workers involvement during health emergencies. The same is the case when they denied the stigma associated with some of the infectious lethal epidemics, its treatment, and death anxiety as well the family isolation they suffer at such moment as reflected in items 16, 17, 19 and 20 respectively. Unarguably Health Workers like every other human beings perpetuate some of the above feelings most especially in Africa and Nigeria in particular where some of these diseases come with different connotations and interpretations. Also most of them suffer greatly serious family detachment and isolation either for fear of infecting the family members or its economic burden if affected. This is because no health worker would intentionally want to infect his/her family, hence would rather prefer remaining at the secluded areas, and call rooms or quarters thereby amplifying isolations and detachment. Thus, it would be ridiculous to deny that such factors have no role to play in Health workers participation in period of disease outbreaks. This is supported by the assertion of (Zhou, Tang, Wang, 2020; Maleki, Najafi, Farhadi, 2020) who found that 85% and 92% of Healthcare Workers (HCWs), respectively, were afraid of getting infected with the disease and transmitting it to the family. In addition, Wafaa, et al (2020) equally gave credence to this position. According to Wafaa et al, (2020), the first and the most frequently mentioned items that make HCWs afraid of getting infected is their fear to transmit the infection to their families followed by their belief that the disease is highly transmissible. They noted that the stigma associated with infection was mentioned by about two-thirds of their participants. This was somehow comparable to the findings of Abdelhafiz, Mohammed and Ibrahim, (2020) where about 23% of respondents reported stigma associated with the disease. Abdelhafiz, et al (2020), explained this stigma by fear of its fatality and high transmissibility. Thus, the role of stigma, family isolation and economic burden in terms of treatment are very critical in determining HWCs involvement in period of disease outbreaks.

The areas of specialization of Health Workers was found to have no significant influence on their commitment to duty during outbreak of deadly disease while utilizing Analysis of Variance (ANOVA) but when the result was further subjected to Bonferoni Post Hoc Test, a significant difference were noted between Doctors and Orderlies, Nurses and Orderlies with respect to their concerns and attitude to work. Thus, the hypothesis that stated that the Areas of specialization (profession) will not influence Health Workers' commitment to duty during outbreaks of deadly diseases were partly accepted and partly rejected. This is supported by the finding of the previous

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researchers (Wafaa, Enas, Mona, Nashwa, 2020; Zhou, Tang, Wang, 2020; Giao, Han, Van, 2020; Abdelhafiz, Mohammed, Ibrahim, 2020; Saqlain, Munir, Ur Rehman, 2020; Zhong, Luo, Li, 2020) which reported an overall positive attitude of Healthcare Workers towards deadly infectious diseases with emphasis on their general knowledge level about some disease outbreaks. They however, deemphasized the role of professional inclinations. That is to say, due to the perceived knowledge level of all Health Workers regarding disease conditions and its modes of transmission, their commitment to duty during epidemic is not in doubt, hence we accept the hypothesis.On the other hand, the notable differences between Doctors and Orderlies, Nurses and Orderlies with respect to their concerns and attitude to work was not surprised. This confirm the finding of (Wafaa, et al, 2020, Zhou et al, 2020) who found that frontline Healthcare Workers as physicians and nurses who deal directly with patients had a more optimistic attitude than other Health Workers. Also higher knowledge level was equally found to predict positive attitude among Health Workers during infectious diseases outbreaks (Abdelhafiz, et al, 2020 and Zhong, et al, 2020). By extension, Doctors and Nurses tend to be more knowledgeable on disease conditions than the Orderlies probably because of their educational level and frequent contact with patients of all sorts, as such may go a long way in influencing their attitude and concerns during disease outbreaks. It is a well-known fact that the knowledge of Health Workers is a very important prerequisite for prevention beliefs, positive attitudes, as well as promote positive practices. It also affects their coping strategies to some extent (McEachan, Taylor, Harrison, 2016) while inadequate knowledge, low education and nature of job schedule with less contact, could increase their fear/concerns and risk of infection as obtainable amongst orderlies.

The result also revealed that year of professional experience did not have statistical significant influence on health workers' commitment to duty during outbreak of deadly disease. The findings of Saqlain, et al (2020) lends support to the outcome of the present study. According to their finding, the attitude score was found not to differ significantly ($p < 0.05$) with age or years of experience in healthcare services. However, when the result of the current study was further subjected to Bonferoni Post Hoc Test (table 4b), a significant difference was noted on health workers' attitude to work with particular reference to the duration of their year of work experience. This finding is consistent with the outcome of the previous studies (Franci , Adamu, Samuel, Nanven, Solomon, Laura, Kenneth, 2020; Zhang, Zhou, Tang, Wang, Nie, Zhang, You 2020). Hence, the hypothesis that stated that year of experience will not influence Health Workers' commitment to duty during infectious disease outbreaks was partly accepted and partly rejected. The possible explanation of this mixed findings is that increased year of experience entails mastering of skills, more knowledge and self-confidence as well as adaptation of adequate coping mechanisms to face uncertainties associated with ones work. Thus, as Health Workers grow in their jobs so also their expertise flourishes and then better able to handle any situation that comes to their way including disease outbreaks while discharging their duties. The same is applicable to the younger Health Workers that come to work with much enthusiasm and would want to give in their best to showcase their professional expertise as well as impressing their masters even in the face of health challenges thereby leading to positive

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attitude to work. On the other hand, since higher year of service comes with improved skills, better understanding and its positive attitude to work; lower year of experience maybe associated with low skills, lack of confidence, anxiety and fear of the unknown, thereby leading to negative attitude to work. Hence, the observed difference in the concern and attitude to work among the different levels of Health Workers. In the same vein, the result also showed that Marital Status is not a significant factor in Health Workers' attitude to work during deadly disease outbreak. Thus, we accept the hypothesis that says Marital Status will not influence occupational involvement/commitments among Health Workers during outbreaks of lethal epidemics. This finding contradicts previous studies showing that Marital Status was a positive predictor of Health Workers involvement to duty during outbreaks (Reem, Majed, Hamdan, Khaled, Mohammed, Mohammed, Khalid, Noura, Bader, Rawaih and Joseph, (2020). However, the finding of Alessandra, Lucia, Maria, Silvia, Valentina, Monia, Carla, Sonia, and Carmen (2020) lends support to the outcome of the present study. Suggesting that most Health Workers are not after whether they are married or not when it comes to the discharging of their duties but mostly conscious of life saving and adhering to their professional code of conduct. The last finding of this study revealed that gender has no statistical significant on health workers' attitude to work during outbreaks of deadly diseases. Hence, hypothesis 4 that stated Health workers' gender will not influence their attitude to work during health emergencies was accepted. The reason could be whether male or female, they are both health workers and with the same training. As such, gender was not a determinant of the kind of role one performs provided such a staff was certified health professional.

Implications of the study

Health workers' concerns and their attitude to work in period of health emergencies are very critical. Hence, the findings of this study has far reaching implications to the Healthcare institutions, government, policy makers and among the Healthcare Workers. The finding revealed that several factors such as poor risk allowance, lack of motivation, poor response strategies by the government, lack of protective equipment, poor funding, poor state of hospitals, poor knowledge of the diagnostic criteria, non-availability of vaccines to work with, lack of regular education/seminars etc were the concerns of health workers and are responsible for their perceived poor attitude to work in moment of disease outbreaks. This is very interesting and revealing. Therefore, suggesting that for Health workers to function actively as expected in period of deadly disease outbreaks, relevant authorities, health mangers, hospital owners, policy makers, individuals and government must endeavor to ensure that the identified factors are adequately addressed as they are not only necessary but key to workers commitment to duty. Also areas of specialization was equally found to positively predict health workers' commitment to duty during infectious disease outbreaks. The finding revealed that Doctors and Nurses had positive attitude and were more committed than Orderlies at such moment of health crisis. This implies that the background and knowledge one has over a particular thing has a way of influencing such person's behavior and attitude. Doctors and Nurses seem to be more informed on health related matters including disease outbreaks and are constantly in touch with patients than every other healthcare providers as well as the Orderlies. This no doubt may influence their attitude positively because they are always involved caring patients even those at

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the verge of dying and of course no human that derives joy watch a fellow human dies. Thus, the nature of their job schedules has inherent disposition for doctors and nurses to be more committed than other health personnel during periods of health crisis. It therefore implies that these categories of health workers must be adequately taken care of or motivated at such moments for them to be able to give in their best.

In the same vein, years of professional experience was equally found to be a strong factor in Health Workers' attitude and commitment to duty in periods of disease outbreaks. The older and much younger health workers were found to have positive attitude to work during health emergencies. Since the older one becomes on the job, the more skillful, experienced and knowledgeable he becomes; younger age on the other hand comes with enthusiasm, energy, willingness and readiness to work. Thus, it implies that during health emergencies, the older and much younger health workers should be utilized in facing the disease outbreaks inconsideration of their peculiarities. While those with average/moderate year of experience may not be the good candidates to confront such emergencies. This is because these group of professionals would have been familiar with the system and may have had some encounters that retard their commitment to duty thereby leading to lesser affair attitude, lack of commitment, reluctance and callousness. Furthermore, the role of marital status and gender were equally highlighted. The outcome indicates that marital status and gender were not a determinants of occupational involvement among healthcare workers during disease outbreaks. This implies that while combating any disease outbreak, emphasis should not be placed on the gender or the marital status of a health worker. That is to say, what matters most is the training received, whether man or woman, married or single, widow or widower does not count on occupational commitment among health workers during epidemic of infectious diseases.

Limitations of the study

Lack of willingness to participate in the study by most health workers was a serious limitation to this study. Majority of them claimed that they were too busy and occupied with their job that they hardly have time to attend to the researcher, most especially among the doctors. Also poor reading attitude among the respondents greatly influenced the studies, many of them were found to be ticking indiscriminately just to fulfil all righteousness. As a problem with most self-report inventory, the respondents may have under-reported some of the concerns expected of them while same may have exaggerated those they think project them better.

The nature of their scheduled characterized by shift duty for nurses/ orderlies and call duty arrangements for doctors and other medical personnel equally posed serious setback to the study. This no doubt affected the retrieval of the questionnaires as well as access to the prospective respondents. Also, many were afraid to participate in the study with the view that they would not want to be seen as exposing their institution's pitfalls and possible consequences that may arise from such participation. Additionally, the number of participants was small and they were mostly Igbo persons. Thus, the geneneralizabilty of the findings across Nigerian healthcare system is not advised.

Suggestions for further studies

It is suggested that future studies on this topic should aim to correct the identified challenges of the current study by designing the study in a way that would accommodate the nature of their job schedules to ensure effective participation. It is also suggested that the number of participants be increased so as to enable generalization.

Also, subsequent studies should make their instruments for data collection very brief and concise as lengthy questionnaire may pose some difficulties to the respondents. Effort should equally be made to alleviate fears arising from anticipated consequence from the hospital authorities by assuring them of their protection and confidentiality of the information released by them.

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