



Fear status and level of confidence among frontline health care workers managing covid-19 cases in a private tertiary hospital in Ogun State, Nigeria.

Ogunkoya John Omotola¹, Uduagbamen Peter Kehinde², Ladele Emmanuel Akindele³, Imishue Onome Tobore⁴, Eigbe Solomon¹

1. Division of Respiratory Medicine and Allergy, Babcock University Teaching Hospital/ Department of Medicine, Benjamin Carson (Snr) College of Health and Medical Sciences, Babcock University Ilishan- Remo, Ogun State, Nigeria.
2. Division of Nephrology and Hypertension, Babcock University Teaching Hospital/ Department of Medicine, Benjamin Carson (Snr) College of Health and Medical Sciences, Babcock University, Ilishan- Remo, Ogun State, Nigeria.
3. Department of Family Medicine, Babcock University Teaching Hospital/ Benjamin Carson (Snr) College of Health and Medical Sciences, Babcock University Ilishan- Remo, Ogun State, Nigeria.
4. Mental Health Unit, Babcock University Teaching Hospital/ Department of Medicine, Benjamin Carson (Snr) College of Health and Medical Sciences, Babcock University Ilishan- Remo, Ogun State, Nigeria.

Corresponding author: Dr. Ogunkoya John Omotola

Division of Respiratory Medicine and Allergy, Babcock University Teaching Hospital/ Department of Medicine, Benjamin Carson (Snr) College of Health and Medical Sciences, PMB 4003, Ilishan Remo, Ogun State, Nigeria

ABSTRACT

Introduction\

The spread of novel coronavirus 2019 has led to loss of lives all over the world. This increased morbidity and associated increase in mortality rate, has led to severe negative effects among healthcare workers. Also, the stress experience to this situation by healthcare workers (HCWs) heightened the fear of being infected, falling ill, being hospitalized and subsequently dying from the virus in the line of duty. This may have had negative effects on the mental state of these HCWs. The aim is to determine the fear and the confidence status of frontline healthcare workers in a private tertiary hospital in Ogun State, Nigeria and how they are affected by socio-demographic factors.

Materials and methods

This study was a prospective cross-sectional survey conducted using a structured self administered questionnaire. 198 study participants were selected for this study using random sampling method. . Data on socio-demographic variables, level of fear and confidence of managing COVID-19 infection were obtained using Likert scales. Data was analyzed using SPSS version 26. The Data was subjected to univariate and bivariate analysis. Proportions Mean and Standard Deviation was generated using univariate analysis. Descriptive statistics was employed in the confidence and fear scores. The association between categorical or nominal data (socio-demographic factors) and the means of confidence and fear scores (continuous data) were analyzed using student t- test.

Results

The mean age of study participants was gender distribution shows that 84 respondents (42.4%) were males, while 114 (57.6%) was females. Majority (n=93, 46.9%) of healthcare workers who participated in this study were somewhat confident of managing cases of COVID-19. Only 16.8% (n=33) of health care workers had confidence level of 5/10. More than one-fifth of HCWs (n=44, 22.4%) had scale of fear of 7/10. There were no significant associations between age, gender and specialties of the study participants and their mean fear and confidence scores

Conclusion

The study showed that male healthcare workers had a higher mean confidence score compared to their female counterparts. Also, there were no positive significant associations between socio-demographic characteristics and workplace fear and confidence levels of COVID-19.

KEYWORDS: COVID-19, Pandemic, healthcare workers, COVID-19 variant.

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I. INTRODUCTION

The spread of novel coronavirus 2019 has led to loss of lives all over the world since it was declared a pandemic by the World Health Organization. [1] The singular daily number of cases of 1,823 in Nigeria was recorded on August 19th 2021. At the time of writing this article, Nigeria has recorded 187,023 positive cases with about 2,200 deaths overall. Figures show that the highest numbers of cases in Nigeria were registered between May and August 2020 as well as between December 2020 and January 2021. [2] The later being the period of the third wave of COVID-19 believed to have been driven by the highly infectious delta variant of the virus.

At the last count, seven different types of human coronaviruses have been identified with distinct genetic differences: the HKU1, NL63, 229E and OC43 all which cause mild infections. Others are severe acute respiratory syndrome coronavirus (SARS-CoV), Middle East respiratory syndrome coronavirus (MERS-CoV) and SARS-CoV-2 which often cause severe respiratory distress and atypical pneumonia. [3] SARS-CoV-2, the causative cause of the ongoing pandemic, an enveloped single stranded RNA virus had undergone genetic mutation leading to the evolution of the delta variant with increased number of hospitalization and death especially among the unvaccinated with comorbidities such as diabetes, heart diseases, chronic kidney diseases, immune-compromised individuals such as HIV/AIDS and organ transplant patients. [4]

Despite the introduction of vaccines in late 2020, the delta variant was detected in the UK in January 2021 with its subsequent spread all over the world. [5] The delta variant has been identified to be responsible for the third wave of the infection in Nigeria. [6] The progress of vaccination has been promising despite widespread hesitancy in the uptake of COVID-19 vaccination mainly fueled by mis-information and conspiracy theories about unfounded possible side effects of these vaccines. Indeed, claims have been made on unconfirmed consequences from the administration of some vaccines such as autism developments have been made, even though there is no clinical evidence to support such. [7, 8] At the time of this study, 40.8% of the world population has received at least one dose of COVID-19 vaccine with 5.56 billion doses administered globally and 31.21 million administered each day. However, only 1.9% of people in low income countries like Nigeria have received at least one dose. In these countries, the skepticism about COVID-19 vaccine is being compounded by lack of access to the vaccines. In Nigeria, only 1.6% of the population has received at least a dose of COVID-19 vaccines consisting of 0.73% of fully vaccinated and about 1.8% of individuals, who had received a dose of the vaccine as at the 3rd of September, 2021. [9]

Healthcare workers by WHO definition as all people engaged in actions whose primary intent is to enhance health. This include doctors, nurses, paramedics, midwives, paramedical staff, hospital administrators, social workers, counselors, support staff and community health extension workers as they all at increased risk of being exposed to and infected with COVID-19. Protecting this group of individuals should actually be prioritized, however. Shortages in the supply of PPE, lack of enthusiasm in taking available vaccines by the general population and recently the advent of highly transmissible delta variants has resulted in more and more health care workers being infected and dying from COVID-19. [10] Amnesty International, Public Service International and UNI Global Union estimated that 17,000 health workers have died from COVID-19 as at March 5, 2021. [11] As a result of this turn of events and its associated increased morbidity and mortality rate, the pandemic has caused public-health issues worldwide with severe negative effects among healthcare workers. [12] Also, the stress people experience in response to these situation especially healthcare workers (HCWs) heightened the fear of being infected, falling ill, being hospitalized and subsequently dying from the virus in the line of duty. This may have had a negative effect on the mental state of these HCWs. [13, 14] Furthermore, rapid rise in the number of confirmed cases, overwhelming work-loads, widespread media coverage of negative news on COVID-19 vaccines and an increased risk of being infected and transmitting it to one's own family may have also put health-care workers under a lot of psychological stress. [15]

It is therefore necessary to evaluate both the psychological and the health effect of the pandemic on HCWs. Failure to do this may lead to job fatigue which may cause physical, social and mental damages with long term consequences such as anxiety, depression and even suicide. [14] The study objectives were to determine the underlying fear and the confidence status of managing COVID-19 among frontline healthcare workers in a private tertiary hospital in Ogun State, Nigeria and how they are affected by socio-demographic factors.

II. METHODOLOGY

2.1 Study design and study population

This study was a prospective cross-sectional survey conducted using a structured self administered questionnaire from July 1 to September 2, 2021 among frontline healthcare workers at Babcock University Teaching Hospital, Ilishan Remo, Ogun State, Nigeria. The hospital is a 140 bedded hospital and the only private tertiary health care facility admitting and treating COVID-19 positive cases in the state.

2.2 Inclusion criteria

Both male and female health care workers, aged between 18 to 65 years and were able to respond to the questionnaire were included in the study.

2.3 Questionnaire

A structured questionnaire was designed by the authors to fulfill the objectives of the study. The questionnaire included socio-demographic variables, questions on level of fear and confidence of managing COVID-19 positive cases during the ongoing 3rd wave of the virus. The Fear of COVID-19 Scale (Likert scale 1-10) was used and reported to be valid and reliable in measuring fear attributed to coronavirus disease. The respondents were also asked if they were confidence to manage COVID-19 patients with Likert scale 1-10 and a 5 point likert scale (very confident, somewhat confident, do not know, some what not confident, totally not confident) was used to evaluate the confidence level. Also, a pilot study was conducted before the commencement of the study.

2.4 Ethical clearance

Ethical permission was obtained from Babcock University health research and Ethical Committee (BUHREC/642/21). Participation was voluntary and respondents provided informed consents before participating in the study. The information obtained during this study was kept confidential.

2.5 Sample Size Determination:

The minimum required sample size for this study was calculated using the formula for estimating proportions of population where the significance level was set to 0.05, standard normal variate was set at 1.96 (at 95% Confidence Interval), absolute error of 0.05 and prevalence level of 70% (average from previous studies). It resulted in a required final sample size of 165 individuals. Therefore, to minimize the errors, the sample size taken for this study was 198.

2.6 Sampling Technique and Data collection procedure

The names of healthcare workers were compiled and random sampling technique was used to select study participants. Self-administered validated questionnaire was used to collect appropriate data from July to September 2021. A total of 208 questionnaires were administered and only the data found 198 responses could be analyzed and included in this study.

2.7 Statistical analysis

Data was analyzed using SPSS version 26. The Data was subjected to univariate and bivariate analysis. Proportions Mean and Standard Deviation was generated using univariate analysis. Descriptive statistics was employed in the confidence and fear scores. The association between categorical or nominal data (socio-demographic factors) and the means of confidence and fear scores (continuous data) were analyzed using student t- test.

III. RESULT

The table 1 highlights the socio-demographic characteristics of respondents who participated in this study. Age distribution shows that 16.2% (n=32) of respondents were 16- 26 years old, 44.9% (n=89) were between the ages of 26 and 35, 26.8% (n=53) were between the ages of 36 and 45, 10.6% (n=21) were between the ages of 46 and 55 years and 1.2% are between the ages of 56 and 65. The gender distribution shows that 84 respondents (42.4%) were males, while 114 (57.6%) were females. Therefore, it can be concluded that there were more female respondents than males.

In terms of academic qualification, 14.1% (n=28) study respondents had diplomas as their highest academic qualifications while 57.1% (n=113), 21.7% (n=43) and 7.1% (n=14) respondents had Bachelors degrees, Masters' degrees and Doctorate degrees as their highest academic qualifications respectively. 181 (91.4%) respondents were Christians while only 17 (8.6%) respondents were Muslims. The marital status distribution showed that, 77 (38.9%) respondents were single, 108 (54.5%) were married and 13 were divorced or separated from their spouses. Also, 36.4% (n=72) study participants were doctors, 54.05 (n=107) were nurses while the remaining 9.6% (n=19) were laboratory scientists.

Table I shows the socio-demographic characteristics of study participants

Variables	Age range	Frequency (N=198)	Percentage (%)
Age	16- 26	32	16.2
	26-35	89	44.9
	36-45	53	26.8
	46-55	21	10.6
	56-65	3	1.5
Gender	Male	84	42.4
	Female	114	57.6
Level of education	Diploma	28	14.1
	Bachelor's degree	113	57.1
	Master's degree	43	21.7
	Doctorate degree	14	7.1
Religion	Christianity	181	91.4
	Islam	17	8.6
Marital status	Single	77	38.9
	Married	108	54.5
	Separated/divorced	13	6.6
Specialties	Doctors	72	36.4
	Nurses	107	54.0
	Laboratory Scientists	19	9.6

Mean age: 34.14± 21.18

Confidence level of managing COVID-19 cases and fear status

This study revealed that majority (n=93, 46.9%) of healthcare workers who participated in this study were somewhat confident of managing cases of COVID-19. This comprised of 44 doctors, 42 nurses and 7 laboratory scientists. The difference was not statistically significant (p=0.127). (Table II) However, on Richter scale of 0-10, majority of health care workers (n=33, 16.8%) had confidence of 5/10 followed by confident scale of 10/10 in 30(15.3%) of HCWs. (Table III)

More than one-fifth of HCWs (n=44, 22.4%) had scale of fear of 7/10 followed by 41(20.9%) with fear scale of 6/10. The least level of fear in this study (1/10 and 9/10) were seen in only 3(1.5%) HCWs. (Table III)

Table II: The confidence of managing COVID-19 patients among study participants

Variable	Specialty	Confidence grade					Total frequency (%)
		Very confident	Somewhat confident	Do not know	Somewhat not confident	Totally not confident	
Confidence in managing COVID-19 infected patients	Doctors	13(6.7)	44(22.2)	3(1.5)	9(4.5)	3(1.5)	72 (36.4)
	Nurses	29(14.6)	42(21.2)	19(9.6)	13(6.7)	4(2.0)	107(54.0)
	Laboratory scientist	2(1.0)	7(3.5)	0(0.0)	1(0.5)	9(4.5)	19(9.6%)
TOTAL		44(22.3)	93(46.9)	22(11.1)	23(11.7)	16(8.0)	198(100.0)

X²=17.629, p-value= 0.127

Table III: The distribution scale of fear and level of confidence of managing COVID-19 patients among study respondents

Scale	Confidence score Frequency (%)	Fear score Frequency (%)
0	10(5.3)	0(0.0)
1	6(3.1)	3(1.5)
2	17(8.4)	12(6.0)
3	17(8.4)	9(4.5)
4	18(9.2)	18(9.0)
5	33(16.8)	32(16.4)
6	16(7.6)	41(20.9)
7	18(9.2)	44(22.4)
8	24(12.2)	24(11.9)
9	9(4.6)	3(1.5)
10	30(15.3)	12(6.0)
TOTAL	198(100.0)	198(100.0)

Mean scores: 5.96±2.03 (level of confidence), 5.67±2.95 (level of fear)

Associations between socio-demographic characteristic and the confidence and fear scales

Table IV shows the associations between socio-demographic characteristic and the confidence and fear scales of study participants. The highest mean confident score (9.06±4.13) was in the 36-45 year age range while the highest mean fear score (8.01±4.24) was seen among HCWs age between 56-65 years. The differences were not statistically significant (p=0.937 and p=0.444 respectively).

The mean confidence score was higher in female (8.13±4.68) HCWs compared to their male (6.56±3.89) counterparts. The difference was not statistically significant (p=0.135). However, the reverse was the case on the fear scale in which the mean fear score is higher in male (6.63±4.54) HCWs compared to females (4.97±2.04). The difference was not statistically significant (p=0.990). The highest mean confidence score was seen among doctors (7.73±1.39) while the mean fear score was among nurses (6.02±4.22). (Table IV)

Table IV shows the associations between socio-demographic characteristic and the confidence and fear scales of study participants

Variables		N	Mean confident scores	t-test	p-value	Mean fear scores	t-test	p-value
Age	16-25	32	3.92±3.77	5.558	0.937	2.85±21.04	44.658	0.444
	26-35	89	4.14±3.69			3.25±44.80		
	36-45	53	9.06±4.13			5.32±45.49		
	46-55	21	4.68±2.51			2.00±25.94		
	56-65	3	4.50±7.42			8.01±4.24		
Gender	Male	84	6.56±3.89	5.564	0.135	6.63±4.54	25.037	0.990
	Female	114	8.13±4.68			4.97±2.04		
Specialty	Doctors	72	7.73±1.39	5.773	0.143	4.37±7.23	29.455	0.473
	Nurses	107	7.22±3.83			6.02±4.22		
	Laboratory scientists	19	9.02±6.32			2.33±1.25		

IV. DISCUSSION

Fear is a relevant element of psychological well-being of humans. It is a major factor that affects the ability of individuals to perform optimally in their fields of endeavors. Therefore, the assessment of confidence level and level of fear in health workers is justified especially during infectious disease outbreaks such as the world is experiencing presently. This will assist in identifying the need of health care workers and the provision of necessary assistance to this group of essential workers. [17, 18]

This study is the first from this part of Africa that evaluated a nagging question of the degree of fear and boldness being experienced by frontline healthcare workers and associated factors during ongoing COVID-19 pandemic. This study showed that despite the risk of exposure, majority of healthcare workers were somewhat confident and exhibited unmatched willingness to ensure continuous and quality care for patients infected with COVID-19. Gender disparity was a major limitation in our study, as women are more likely to train and be employed as nurses in Nigeria. [19] This leads to under representation of men among nurses which is consistent with findings from other parts of Nigeria and Africa. There are more females in the healthcare profession than men all over the world, which suggests an alternate modality be employed in future surveys.

In our study, we identified a low level of confidence in majority of HCWs and a higher level of fear of being infected with COVID-19 or dying from COVID-19 amongst healthcare workers. In particular, there were no differences in the confidence and fear scores with age and gender of HCWs. These findings are in agreement with previous studies done in other parts of the world. [16, 20, 21, 22] This finding might not be unconnected with inadequacies of personal protective devices and the slow pace of vaccine uptakes being seen all over the world particularly in the United States and African countries. This study also showed that 48.9 % (n=97) of healthcare workers had confidence level higher than 5 while a higher number (62.7%, n=124) showed a fear level higher than 5. This is similar to the finding in other studies where fear level is higher than the confidence of managing COVID-19 cases. [23, 24]

Furthermore, this study showed that the highest mean confidence score was seen in male HCWs compared to their female counterpart. This was not been seen in previous studies [19, 20, 22, 24]. This finding can be attributed to the fact that most females used in our study were nurses who had more frequent contact with patients compared to their male counterparts who were mostly doctors. This study also did not show any association between age, gender and specialties of the study participants and their mean fear or confidence scores. This differs from finding in the study done in Pakistan in which doctors showed a more severe level of fear compared to other healthcare workers thereby developing workplace panics, anxiety and avoidance. [24]

V. CONCLUSION

This study examined the level of fear and confidence status among health care workers during COVID-19 pandemic and the association between socio-demographic characteristics and workplace fear and confidence levels. The study showed that male healthcare workers had a higher mean confidence score compared to their female counterparts. Also, there were no positive significant associations between socio-demographic characteristics and workplace fear and confidence levels of COVID-19.

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AUTHORS' CONTRIBUTIONS

OJO was responsible for the conception and design, data analysis and interpretation, drafting of the manuscript, review of draft and approval of the final version.

UPK was responsible for the conception and design, data analysis and interpretation, drafting of the manuscript, review of draft and approval of the final version.

LAE was responsible for the conception and design, data analysis and interpretation, drafting of the manuscript, review of draft and approval of the final version.

IOT was responsible for the conception and design, data analysis and interpretation, drafting of the manuscript, review of draft and approval of the final version.

ES was responsible for the conception and design, data analysis and interpretation, drafting of the manuscript, review of draft and approval of the final version.

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CONFLICT OF INTEREST

The authors have no conflict of interest to declare.

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