Predictors of Quality of Life of Frontline Health Care Workers Caring for Patients with Covid-19 In Lagos State

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Abstract:

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes COVID-19 disease, has become a global health threat since its emergence. Healthcare workers are at the frontline defense against the COVID-19 pandemic. Therefore, this study was conducted to explore the predictors of quality of life of frontline health care workers caring for COVID-19 patients in Lagos State. The study was adopted a quantitative design, using descriptive cross-sectional method. The population for this study consisted of Nurses, Doctors and Hygienists caring for covid-19 patients at the covid-19 isolation centers of Lagos University Teaching Hospital (LUTH), Infectious Disease Hospital (IDH) and First Cardiology Consultant Hospital in Lagos State. A convenience sample of 150 frontline health care workers were selected. A structured questionnaire adapted from WHO was used to collect data. The research questions were answered via descriptive statistics while inferential statistics were used to test the formulated hypotheses. From the result, it can be observed that the respondents had a good level of knowledge of COVID-19. Over an average of respondents 99(67.8%) showed positive attitude. Regarding the QoL, the respondents scored a mean of 71.4±12.3 this gives the quality-of-life score of 75.9%. Findings further showed that there is a significant relationship between age and the quality of life (X^2= 379.863; P= 0.000). The level of the respondents' knowledge of infection control has a

negative significant prediction on quality of life (**β=** -.902, t= 9.455; P= 0.00). The level of knowledge has 5.2% (R^2= 0.052) level of prediction on quality of life. The study concluded that the healthcare workers in Lagos State have good knowledge of COVID-19 infection as more than half of the respondents had good knowledge of infection and that that majority of respondents had positive attitude towards COVID-19 in Lagos State. It was found that younger nurses, unmarried workers, males and workers with higher years of experienced reported better quality of life than their counterparts.

Keywords: Attitude, COVID-19, Healthcare workers, Knowledge, Quality of Life,

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Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes COVID-19 disease, has become a global health threat since its emergence (Azlan, 2020). Initial estimates suggest that front-line health-care workers could account for 10–20% of all diagnoses, with some early evidence that people from Black, Asian, and minority ethnic backgrounds are at higher risk (Bhagavathula & Shehab, 2020). The healthcare workers are at the frontline of COVID- 19 pandemic defense and are exposed to, not only infection with COVID-19 due to their frequent exposure to infected individuals, but also psychological distress, long working hours, fatigue, occupational stigma and physical violence.

Evidence that Covid-19 pandemic impacts significantly on the well-being and quality of life of Health Care Workers (HCWs) exists. Frontline Health care workers often must respond to demanding and unforeseen medical emergencies, worry about contracting and spreading the disease, competency concerns when redeployed without adequate training, inadequate and cumbersome personal protective equipment (PPE), and frequent exposure to patients' suffering and dying. Additionally, quarantine may result in prolonged separation from family and other support systems. Many frontline health care workers feel conflicted between their sense of duty and their willingness to work during a pandemic and trying to strike a balance between professional responsibility and altruism and personal fear and anxiety can result in further dissonance and moral distress (Bhagavathula, Aldhalee, Rahmani, Mahabadi & Bandari, 2020).

Covid-19 has had severe economic, social, political and cultural consequences on human life and these consequences will be experienced well into the future. The emergence of this pandemic has been a massive test for health-care systems in terms of their capabilities and weaknesses. A crucial effect of this pandemic has been its' impact on staff mental health (Liang & Li, 2020). The high mortality rate, high disease transmission capacity, and the shortcomings of health systems have had a significant impact on the mental health of employees, and these effects are ongoing (Greenberg, Docherty, Gnanapragasam, Wessely, 2020).

Several studies showed that the frontline health care workers experienced mental and psychology stress related problems and poor quality of life during crisis (Greenberg et al, 2020). Some of these challenges are linked to negative attitude and inadequate knowledge about COVID-19 infection. A cross-sectional study from Iran reported that 53.0% of frontline health care workers were burned out in the pandemic COVID-19 period and this was associated with poor knowledge and negative attitude (Lai, et al, 2020). Additionally, social isolation, particularly when staff were exposed to prolonged quarantine, and the fear of infecting their family or having an infected family member were reported as reasons for higher rates of stress related illnesses in HCWs during crisis (Liu, et al, 2020) Moreover, staff may be worried due to feelings of uncertainties faced with critically ill patients (Chen, et al, 2020).

Frontline health care workers are a crucial tool in public health safety as well as response to combatting COVID-19, particularly in sub-Saharan Africa (SSA), such as Nigeria, where manpower is low (Wang, et al., 2020). Presently, a dearth of data on the impact of COVID-19 on the mental health of frontline HCWs in SSA countries, such as Nigeria, precludes necessary

evidence to support the design and implementation of mental health services for frontline HCWs in order to succeed at mitigating the effects of COVID-19.

The experiences of frontline health workers involved in COVID-19 outbreaks in Lagos State facilities represent a valuable perspective that can be best captured to strengthen manpower capacity. By exploring the experiences of frontline workers and their quality of life, one can capture their critical perspectives and identify those factors that predict quality of life among them. These insights can help to inform policy and practice for healthcare system improvement, such as improving the management of outbreaks.

Healthcare workers are at the frontline defense against the coronavirus disease 2019 (COVID-19) pandemic. Inadequate knowledge and incorrect attitudes among frontline healthcare workers can directly influence practices and lead to delayed diagnosis, poor infection control practice, and spread of disease. Frontline healthcare workers' burden is associated with health problems such as compassion fatigue and poor quality of life that often force some health care workers to relinquish care roles to long-term care. Frontline health care workers are not only often exposed to high levels of stress, anxiety, and depression, but are equally exposed to sleep disturbances, frustration, hopelessness, and poorer quality of life during their care giving roles due to fragile nature of such disease. However, little is known about the factors that predict quality of life of healthcare workers in the fight against COVID-19. In unprecedented times like the COVID-19 crisis, it has become extremely challenging for front liners because of the loneliness brought about by the confinement and isolation that exacerbates the mental wellbeing of caregivers (Baloch, et al., 2020).

The transmission of the disease among frontline healthcare workers is exaggerated by overcrowding, absence of isolation facilities, contaminated environment and is likely enhanced by insufficient knowledge and awareness of infection control practices among healthcare workers. COVID-19 has affected the life and health of more than 1 million people across the world. This overwhelms many countries' healthcare systems, and, of course, affects healthcare providers such as nurses fighting on the frontlines to safeguard the lives of everyone affected. Exploring the issues that nurses face during their battle will help support them and develop protocols and plans to improve their preparedness. Thus, this study explored the issues facing nurses during their response to the COVID-19 crisis and the factors that predict their quality of life.

While some researchers have explored quality of life among healthcare workers, there is dearth of literature on how knowledge and attitude towards COVID-19 will predict quality of life among healthcare workers. That inadequate knowledge and the incorrect attitudes among healthcare workers can directly influence practices and lead to delayed diagnosis, poor infection control practice, spread of disease and poor quality of life. Therefore, this study was conducted to explore the predictors of quality of life of frontline health care workers caring for COVID-19 patients in Lagos State. The specific objectives were to:

1. assess knowledge of COVID-19 infection among frontline healthcare workers in Lagos State;
2. assess the attitude of frontline healthcare workers towards COVID-19 in Lagos State;
3. determine the quality of life of frontline healthcare workers in Lagos State;

4. ascertain if knowledge of COVID-19 infection will predict the quality of life of frontline workers in Lagos State and
5. ascertain if attitude of frontline healthcare worker towards COVID-19 will predict quality of life of the health workers.

Research Questions

1. What is the knowledge level of COVID-19 infection among healthcare workers towards COVID-19 in Lagos State?
2. What is the attitude of frontline healthcare workers towards COVID-19 in Lagos State?
3. What is the Quality of life of frontline healthcare workers in Lagos State?

Research Hypotheses

H_o1: There is no significant relationship between socio-demographic characteristics and quality of life of the healthcare workers in Lagos State.

H_o2: Knowledge level of COVID-19 infection will not predict the quality of life of the healthcare workers in Lagos State.

H_o3: Attitude toward COVID-19 infection will not predict the quality of life of the healthcare workers in Lagos State.

Methodology

This study adopted a quantitative design using a descriptive cross-sectional method. The study was carried out in three hospitals in Lagos state. The population of the study consisted of Nurses, Doctors and Hygienists caring for covid-19 patients at the covid-19 isolation centers of Lagos university Teaching Hospital (LUTH), Infectious Disease Hospital (IDH) and First Cardiology Consultant Hospital in Lagos State. They are 150 in number while in LUTH, they are 74 Frontline healthcare workers. In first cardiology clinic, there are 14 frontline healthcare workers making 238 in all. The inclusion criteria are frontline healthcare workers who are nurses, doctors and hygienists at the study areas. Frontline health care workers other than nurses, doctors and hygienist were excluded from this study. The total sample size was calculated using the Leslie Kish`s formula. The sample size of 150 was used for this study. Convenience sampling method was used to select all frontline health care workers in three selected isolation centers in Lagos State.

A structured questionnaire adapted from WHO was used to elicit information from the respondents, the questionnaire was developed using study objectives and research questions in line with the literature reviewed. It comprises of four sections, section A is socio-demographic variables while section B is on knowledge of COVID-19, section C is on the attitude of health care workers toward COVID-19 while section D is on quality of life of frontline health care workers caring for of COVID-19 patients it has 25 items.

The instrument was subjected to face and content validity. The items in the questionnaire was presented to experts in the tests and measurement, in nursing field and infections expert for reviewing, correction and appraisal after which necessary corrections were made.

Participants were enlightened at the beginning to get them prepared for the questionnaire administration. Informed consent was obtained from each of the participants. Data collected from the questionnaire were analyzed using the Statistical Package for the Social Sciences software (SPSS) version 23.0.The data were coded and analyzed using both descriptive and inferential statistics. The research questions were answered via descriptive statistics while

inferential statistics were used to test the formulated hypotheses. The hypotheses were tested at 0.05 level of significance.

Results

Table 1: Frequency Distribution of Respondents Demographic Data

S/No.	Variable	Category	Frequency	Percentage
1.	Age (in years)	20-29	34	23.3
	Mean=37.2	30-39	52	35.6
	S.D= 8.6	40-49	47	32..2
		50 and above	13	8..9
		Total	**146**	**100**
2.	Gender	Male	29	19.9
		Female	117	80.1
		Total	**146**	**100.0**
3.	Marital Status	Single	27	18.5
		Married	109	74.7
		Divorced	9	6.2
		Widowed	1	.7
		Total	**146**	**100.0**
4.	Profession	Nursing	111	76.0
		Medicine	21	14.4
		Hygienists	14	9.6
		Total	**146**	**100.0**
5.	Work Experience	0-5	33	22.6
		6-10	47	32.2
		11-15	31	21.2
		16 and above	35	24.0
		Total	**146**	**100.0**

Source: Field Survey 2021

Table 1 shows the respondents demographic distribution. The result indicated that the average age of the respondents is 37 years, though 34(23.3%) were within the ages of 20-29 years, 52(35.6%) were within the age range of 30-39 years, 47(32.2%) were within the ages of 40-49 years, while 13(8.9%) were within the ages of 50 years and above. The gender distribution showed that 29(19.9%) of the respondents are male, while 120(80.1%) are female. Indicating that most of the respondents are female. The marital status distribution of the respondents revealed that 27(18.5%) of the respondents were single, 109(74.7%) were married, 9(6.2%) were divorced while only 1(.7%) is a widow. Hence, majority of the respondents were married. Profession distribution indicated that 111(76%) of the respondents were nurses, 21(14.4%) were medicine, while Hygienist were 14(9.6). This shows that majority of the respondents' profession were Nursing. It could be deduced from the tables that 33(22.6%) of the respondents' work is experience was within 5years and below, 47(32.2%) work experience is within 6-10years, 31(21.2%) was within 11-15years, while 35(24%) was within 16years and above. This, by implication, implies that most of the respondents' work experience is within 6-10years.

Research Question 1: What is the knowledge level on COVID-19 among healthcare workers in Lagos State?

Table 2: Knowledge of COVID-19

Items	Yes (%)	No (%)
COVID-19 is a viral disease	109 (74.7)	37(25.3)
COVID-19 is transmitted by direct contact with infected persons	92(63.0)	54(37)
COVID-19 is transmitted by dealing with domestic animals	79(54.1)	67(45.9)
The incubation period of disease is from 2 to 14 days	56(38.4)	90(61.6)
There is an available vaccine for COVID-19	117(80.1)	29(19.9)
PPE can protect a person from COVID-19	83(56.8)	63(43.2)
PPE are used to reduce the risk of spreading COVID-19 infections in the healthcare settings	91(62.3)	55(37.7)
Infection control for COVID-19 include washing of hands only	64(43.8)	82(56.2)
Hand hygiene for COVID-19 should be practiced only when the hands are dirty	71(48.6)	75(51.4)
Hand hygiene is not required if you wear gloves	88(60.3)	58(39.7)
COVID-19 may be more dangerous in patients with chronic diseases	93(63.7)	53(36.3)
The virus may be more dangerous for the elderly	90(61.6)	56(38.4)
Heath care workers are more prone to COVID-19	72(49.3)	74(50.7)
COVID-19 always causes death	69(47.3)	77(52.7)
COVID-19 is transmitted by droplets	112(76.7)	34(23.3)
COVID-19 is transmitted through arthropods	89(91.0)	57(39.0)
COVID-19 is transmitted through eating contaminated food	63(43.2)	83(56.2)
Headache, fever, cough, sore throat, and flu are symptoms of COVID-19	101(69.2)	45(30.8)
COVID-19 leads to pneumonia, respiratory failure, and death	93(63.7)	53(36.3)
Preventive measures against COVID-19 includes washing hands with soap, water or alcohol	106(72.6)	40(29.4)
Preventive measures against COVID-19 includes avoiding touching the eyes, nose and mouth	121(82.9)	25(17.1)
Preventive measures against COVID-19 includes putting on facemask	117(80.1)	29(19.9)
Preventive measures against COVID-19 includes covering the nose and mouth while coughing	92(63.0)	54(37)
Preventive measures against COVID-19 includes avoiding crowdedness in public places	82(56.2)	64(43.8)
Preventive measures against COVID-19 includes frequently cleaning and disinfecting surfaces	102(69.9)	44(30.1)
Preventive measures against COVID-19 includes keeping at least	69(47.3)	77(52.7)

one meter distance between people		
Preventive measures against COVID-19 includes washing nose with a salty solution	39(26.7)	107(73.3)
Preventive measures against COVID-19 includes avoiding direct contact with colleagues (others)	57(39.0)	89(61.0)
COVID-19 always leads to death and disability	82(56.2)	64(43.8)
Drinking of alcohol is proven to prevent COVID-19	46(31.5)	100(68.5)
Our immunity has a lot to do with the susceptibility to and severity of COVID-19	69(47.3)	77(52.7)

Source: Computed from field survey, 2021

Table 2 reveals the respondents view on the knowledge of COVID-19. It could be deduced from the Table that majority of the respondents, 109(74.7%), were of the opinion that COVID-19 is a viral disease, most the respondents, 117(80.1%) believe that there is an available vaccine for COVID- 19. It was also revealed that majority of the respondents, 112(76.7%), were of the opinion that COVID-19 is transmitted by droplets and most of them, 101(69.2%) were of the view that Headache, fever, cough, sore throat, and flu are symptoms of COVID-19. It could be deduced from the results that majority of the respondents, 106(72.6%), believed that preventive measures against COVID-19 includes washing hands with soap, water or alcohol. Most of the respondents, 121(82.9%), were of the view that Preventive measures against COVID-19 includes avoiding touching the eyes, nose and mouth. Majority of the respondents, 117(80.1%), were of the view that Preventive measures against COVID-19 includes putting on facemask. Majority, 102(69.9%), were also of the opinion that Preventive measures against COVID-19 includes frequently cleaning and disinfecting surfaces.

Table 3:   Respondents' knowledge level on COVID-19

Category	Freq. (n=146)	Per (%)
Poor	11	7.5
Fair	49	33.6
Good	86	58.9
Total	**146**	**100.0**

Source: Computed from field survey, 2021

From the result, it can be observed that the respondents had a good level of knowledge of COVID-19. It was further revealed that most of the respondents had good knowledge of COVID-19.

Research Question 2: What is the attitude of frontline healthcare workers towards COVID-19 in Lagos State?

Table 4: Respondents' attitude towards COVID-19

Items	SA (%)	A (%)	D (%)	SD (%)	Mean	SD
COVID-19 is a severe disease	10(6.8)	12(8.2)	30(20.5)	94(64.4)	2.42	0.91
COVID-19 can be prevented	61(41.8)	50(34.2)	25(17.1)	10(6.8)	3.11	0.93

Standard precaution can protect us against COVID-19	74(50.7)	41(28.1)	14(9.6)	17(11.6)	3.77	0.86
COVID-19 cases will increase	24(16.4)	5(3.4)	87(59.6)	30(20.5)	2.36	0.90
I am confident that Nigeria can overcome COVID-19	75(51.4)	34(23.3)	23(15.8)	14(9.6)	3.47	0.51
I am confident in the information disseminated by the ministry of Health and NCDC about COVID-19	100(68.5)	31(21.2)	9(6.2)	6(4.1)	3.54	0.79
There are cases recovered from disease	66(45.2)	59(40.4)	14(9.6)	7(4.8)	3.26	0.82
Regulation taken by the government are enough to combat disease	68(46.6)	49(33.6)	25(17.1)	4(2.7)	3.64	0.57
COVID-19 is accurately diagnosed	71(48.6)	40(27.4)	19(13.0)	16(11.0)	3.54	0.79
I am confident in hospitals dealing with and treating COVID-19 patients	69(47.3)	42(28.8)	21(14.4)	14(9.6)	2.11	0.93

Table 4 revealed the respondents' attitude towards COVID-19. The table shows that majority of the respondents, 94(64.4%) strongly disagreed that COVID-19 is a severe disease. Most of the respondents, 61(41.5%) strongly agreed that COVID-19 can be prevented. It could be deduced from the result that most of the respondents,74(50.7%), strongly agree that standard precaution can protect us against COVID-19. It was further revealed that majority of the respondents, 87(59,6%), disagree that COVID-19 cases will increase. Most of the respondents, 75(51.4%), strongly agree and were confident that Nigeria can overcome COVID-19. Majority of the respondents, 100(68.5%), also strongly agree and were also confident in the information disseminated by the ministry of Health and NCDC about COVID-19. Majority of the respondents, 66(45.2%), strongly agree that There are cases recovered from disease. Most of the respondents, 68(46.6%), strongly agree and believe that regulations taken by the government are enough to combat disease. It was further revealed that majority of the respondents, 71(48.6) strongly agreed that COVID-19 is accurately diagnosed and most of the respondents 68(47.3%), also, strongly agreed that they have confident in hospitals dealing with and treating COVID-19 patients.

Table 5: Level of respondents' attitude towards COVID-19 in Lagos State

	(n=146)	
Items	**Freq.**	**(%)**
Negative	47	32.2
Positive	99	67.8
Total	146	100.0

Source: Computed from field survey, 2021

Table 5 reveals that the respondents have positive attitude towards COVID-19 in Lagos as 99(67.8%) majority of the respondents showed positive attitude.

Research Question 3: What is the Quality of life of frontline healthcare workers in Lagos State?

Table 6: Respondents perception on their quality of life

S/No	Items	VP	P	NPNG	G	VG	Mean	St.D
1.	How would you rate your quality of life?	3(2.1)	74(50.7)	49(33.6)	20(13.7)	-	2.33	0.79
2.	. How satisfied are you with your health?	10(6.8)	103(70.5)	27(18.5)	6(4.1)	-	2.23	0.86

VP- Very poor; P- Poor; NPNG- Neither poor nor good; G- Good; VG- Very good

Table 6 reveals that respondent view on their quality of life. It could be presumed from the result that majority of the respondents, 74(50.7%) rated their quality of life poor and rate of their satisfaction with their health poor as majority of the respondents indicated poor.

Table 7: Respondents view on how often they have felt or experienced certain things in the last two weeks

S/No	Item	NAA	AL	AMA	VM	EM	Mean	St.D
1.	To what extent do you feel that physical pain prevents you from doing what you need to do?	11(7.5)	21(14.4)	49(33.6)	65(44.5)	-	3.14	0.95
2.	How much do you need any medical treatment to function in your life?	47(32.2)	33(22.6)	32(21.9)	34(23.3)	-	2.31	1.24
3.	How much do you enjoy life?	83(56.9)	32(21.9)	6(4.1)	11(7.5)	14(9.6)	1.89	1.36
4.	To what extent do you feel your life to be meaningful?	56(36.3)	28(19.2)	17(11.6)	36(24.7)	9(6.2)	2.39	1.40
5.	How well are you able to concentrate?	50(34.2)	41(28.1)	12(8.2)	27(18.5)	16(11)	2.40	1.45
6.	How safe do you feel in your daily life?	78(53.4)	36(24.7)	16(11)	9(6.2)	7(4.8)	1.89	1.39
7.	How healthy is your physical environment?	59(40.4)	43(29.5)	14(9.6)	16(11)	14(9.6)	2.19	1.36

NAA-Not at all; AL- A little; AMA-A moderate amount; VM- Very much; EM- Extremely much

Table 7 reveals the respondents experience on certain things in the last two weeks. Majority of the respondents, 65(44.5%), to a very much extent, feel that physical pain prevents them from doing what they need to do. Majority of the respondents, 47(32.2%), believe they do not need any medical treatment to function in their life. Most of the respondents, 83(56.9%), were of the view that they do not enjoy life at all. It was also revealed that majority of the respondents, 56(36.3%), do not feel their life is meaningful at all. Most of the respondents, 50(34.2%), were of the view that they do not concentrate at all. It could be deduced from the table majority of the respondents, 78(53.4%), believe they are not safe in their daily life at all. Majority of the respondents, 59(40.4%), were of the view that their physical environment is not healthy at all.

Table 8: Respondents opinion on how completely they were able to do certain things in the last two weeks

S/No	Items	NAA	AL	M	M	C	Mean	St.D
1.	Do you have enough energy for everyday life?	36(24.7)	48(32.9)	3(2.1)	40(27.4)	19(13)	2.03	2.67
2.	Are you able to accept your bodily appearance?	8(5.5)	8(5.5)	2(1.4)	38(26)	90(61.6)	4.31	1.18
3.	Have you enough money to meet your needs?	19(13)	64(43.8)	10(6.8)	33(22.6)	20(13.7)	2.68	1.51
4.	How available to you is the information that you need in your day-to-day life?	19(13)	30(20.5)	56(38.4)	5(3.4)	36(24.7)	2.22	1.45
5.	To what extent do you have the opportunity for leisure activities?	5(3.4)	67(45.9)	26(17.8)	42(28.8)	6(4.1)	2.89	1.08

NAA-Not at all; AL-A little; M-Moderately; M-Mostly; C- Completely

Table 8 reveals the respondents' ability to do some certain things in the last two weeks. It was revealed that most of the respondents, 48(32.9%), were of the view that they a little energy for everyday life. Majority of the respondents, 90(61.6%), were of the view that in the last two weeks they have been able to completely accept their body appearance. Most of the respondents, 64(43.8%), were of the view that they have just a little money to meet their daily needs. Majority of the respondents, 56(38.4%), were of the view that in the last two weeks they have had=d moderate available information they need in their day-to-day life. Finally, most of the respondents, 67(45.9%), they have had a little opportunity for leisure activities.

Table 9: The respondents' view on the level of satisfaction they had felt about various aspects of their life over the last two weeks

S/No	Item	VD	D	NSND	S	VS	Mean	St.D

		VD	D	NSND	S	VS	Mean	SD
1.	How satisfied are you with your sleep?	10(6.8)	49(33.6)	48(32.9)	35(24)	4(2.7)	2.39	1.48
2.	How satisfied are you with your ability to perform your daily living activities?	5(3.5)	47(32.2)	50(34.2)	34(23.3)	10(6.8)	2.51	1.37
3.	How satisfied are you with your capacity for work?	42(28.8)	30(20.5)	33(22.6)	15(10.3)	26(17.8)	2.32	1.32
4.	How satisfied are you with yourself?	9(6.2)	23(15.8)	57(39)	48(32.9)	9(6.2)	2.81	1.31
5.	How satisfied are you with your personal relationships?	7(4.8)	14(9.6)	46(31.5)	39(26.7)	40(27.4)	3.68	1.28
6.	How satisfied are you with your sex life?	14(9.6)	10(6.8)	33(22.6)	43(29.5)	46(31.5)	3.66	1.27
7.	How satisfied are you with the support you get from your friends?	14(9.6)	61(41.8)	17(11.6)	29(19.9)	25(17.1)	2.92	1.31
8.	How satisfied are you with the conditions of your living place?	7(4.8)	41(28.1)	3(2.1)	33(22.6)	62(42.5)	3.69	1.40
9.	How satisfied are you with your access to health services	41(28.1)	55(37.7)	31(21.2)	19(13)	-	2.25	0.97
10	How satisfied are you with your mode of transportation	13(8.9)	70(47.9)	-	51(34.9)	12(8.2)	2.68	1.27

VD-Very Dissatisfied; D-Dissatisfied; NSND-Neither satisfied nor dissatisfied; S-Satisfied, VS-Very satisfied

Table 9 reveals the respondents' view on the level of satisfaction they had felt about various aspects of their life over the last two weeks. It was revealed that most of the respondents, 49(333.6%), were of the view that they were dissatisfied with their sleep in last two weeks. Majority of the respondents, 50(34.2%), were neither satisfied nor dissatisfied with their ability to perform their daily living activities. It was also revealed that most of the respondents, 42(28.8%), were of the view that they were very dissatisfied with their capacity for work. The result further showed that majority of the respondents, 57(39%), were neither

satisfied nor dissatisfied with themselves. Most of the respondents, 46(31.5%) also revealed that they were neither satisfied nor dissatisfied with their personal relationships, most ot the respondents, 46(31.6%), were however very satisfied with their sex life. Most of the respondents, 61(41.8%), were dissatisfied with the support they get friends. It could further be deduced from the results that majority of the respondents, 62(42.5%) were very satisfied with the conditions of their living place, most of the respondents, 55(37.7%) were dissatisfied with their access to health services, and majority other respondents, 70(47.9%) were dissatisfied with their mode of transportation.

Table 10: The respondents' view on how often they have felt or experienced certain things in the last two weeks.

S/No	Item	N	S	QO	VO	A	Mean	St.D
1.	How often do you have negative feelings, such as blue mood, despair, anxiety, depression?	22(15.1)	95(65.1)	-	29(19.9)	-	2.10	1.18

N- Never; S- Seldom; QO- Quite Often; VO- Very Often; A- Always

Table 10 reveals the respondents' view how often they have felt or experienced certain things in the last two weeks**.** It was revealed that most of the respondents, 95 (65.1%), were of the view that they seldom have negative feelings, such as blue mood, despair, anxiety, depression in last two weeks.

Table 11: Level of respondents' quality of life

Items	Freq. (n=146)	Per (%)
Poor	89	61.0
Fair	30	20.5
Good	27	18.5
Total	146	100.0

Source: Computed from field survey, 2021

The construct measuring the respondents' quality of life was measured on a 125-point rating scale and the result showed that the respondents scored mean of 71.4±12.3 this gives the quality-of-life score of 75.9%. The proportion of the respondents who have good quality of life is 27(18.5%), while those with poor quality of life is 89(61%). It was observed that most of the respondents had poor quality of life.

Test of Hypotheses

H₀1: There is no significant relationship between socio-demographic variables and quality of life among frontline healthcare workers.

Table 12: Chi-Square Analysis on the relationship between socio-demographic variables and quality of life among frontline healthcare workers

S/No.	Variable	Category	Quality of life			Chi-Square (X^2)	p-value
			Observed	Expected	Residual		
1.	Age (in years)	20-29	34	10.4	23.6	379.863ᵃ	.000
		30-39	52	10.4	41.6		

#								
		40-49	47	10.4	36.6			
		50 and above	13	10.4	2.6			
2.	Gender	Male	29	73	-44	19.973	.000	
		Female	117	73	44			
3.	Marital Status	Single	27	36.5	-9.5	201.726	.000	
		Married	109	36.5	72.5			
		Divorced	9	36.5	-27.5			
		Widow	1	36.5	-35.5			
4.	Profession	Nursing	111	48.7	62.3	230.562	.000	
		Medicine	21	48.7	-27.7			
		Hygienists	14	48.7	-34.7			
5.	Work Experience	0-5	33	36.5	-3.5	4.247	.236	
		6-10	47	36.5	10.5			
		11-15	31	36.5	-5.5			
		16 and above	35	36.5	-1.5			

Hypothesis one was tested using Chi-Square analysis at 5% level of significant. The table shows that there is a significant relationship between age and the quality of life (X^2= 379.863; P= 0.000). there is a significant relationship between gender and quality of life, marital status and quality of life and profession and quality of life, while there is no significant relationship between work experience and quality of life of the respondents. Based on this result it could be concluded that there is a significant relationship between socio-demographic variables and quality of life.

H$_o$2: Knowledge level of COVID-19 will not predict the quality of life of the healthcare workers in Lagos State.

Table 13: Simple regression analysis on the prediction of healthcare workers' knowledge level of COVID-19 infection on the quality of life

Variables	β	Std. E Beta		t	Sig.	R	R²	F	P-Value
(Constant)	110.126	11.647		9.455	.000	.229	.052	7.934	.006
Knowledge	-.902	.320	-.229	-2.817	.006				

Dependent Variable: Quality of Life

Hypothesis two was tested using a simple linear regression analysis. The result revealed that the level of the respondents' knowledge of infection control has a negative significant prediction on quality of life (**β=** -.902, t= 9.455; P= 0.00). The result further showed that the level of knowledge has 5.2% (R2= 0.052 level of prediction on quality of life. Based on this result the null hypothesis is rejected. This implies that knowledge level will significantly predict the quality of life.

H$_o$3: Attitude towards COVID-19 will not predict the quality of life of the healthcare workers in Lagos State.

Table 14: Simple regression analysis on the prediction of healthcare workers' attitude of frontline healthcare worker towards COVID-19 on the quality of life

Variables	B	Std. Error	Beta	t	Sig.	R	R²	F	P-Value
(Constant)	83.582	3.413		24.491	.000	.155	.024	3.554	.061
Attitude	-.223	.118	-.155	-1.885	.061				

Hypothesis three was tested using a simple linear regression analysis. The result revealed that the level of the respondents' attitude towards COVID-19 has no significant prediction on quality of life (**β= -.223**, t= -1.885; P= 0.00). Based on this result the null hypothesis is not rejected. This implies that the healthcare workers attitude will not significantly predict the quality of life.

Discussion of Findings

The discussion of the findings of this study was based on the research questions raised and the hypotheses formulated and tested.

Research Question 1: What is the knowledge level of COVID-19 infection among healthcare workers towards COVID-19 in Lagos State?

In research question 1, the researcher sought to ascertain the knowledge level of COVID-19 among healthcare workers towards COVID-19 in Lagos State. Findings revealed that the healthcare workers in Lagos state have good knowledge of COVID-19 infection as more than half of the respondents had good knowledge of infection. While there were low responses in few of the knowledge questions, majority displayed adequate knowledge level regarding COVID-19 infection. This is consistent with the findings of Adams and Walls (2020) who reported that there is an increasing knowledge of COVID-19 among health workers. In addition, the findings of the study conducted by **Ghimire, Dhungel and Pokhre** (2020) revealed that, while health exhibited adequate knowledge about COVID-19, the level of knowledge was more significant among physicians.

Research Question 2: What is the attitude of frontline healthcare workers towards COVID-19 in Lagos State?

The findings of this study have revealed that majority of respondents had positive attitude towards COVID-19 in Lagos State. Although few participants expressed negative attitudes but the proportion is negligible. This finding corroborates the findings of Ghimire, et al., (2020) that healthcare workers in Nigeria possess a positive attitude and good preventive practice to contain the transmission of SARS-CoV-2. They further revealed that there were also areas of negative attitudes and unacceptable practices among the healthcare workers. The finding of a study conducted by Limbu, Piryani and Sunny (2020) on knowledge, attitude and fears assessment of health care workers towards the Coronavirus pandemic is in agreement with the findings of this study that the healthcare workers displayed positive attitude to the COVID-19 pandemic. In addition, Majority of the participants believed that COVID-19 could be prevented.

Research Question 3: What is the Quality of life of frontline healthcare workers in Lagos State?

Findings revealed that the respondents' quality of life was poor as majority of the respondents reported a poor quality of life. This is contradictory with the findings of Wahed et al (2020) where majority of healthcare professionals caring for COVID-19 patients reported moderate quality of life. While the level of quality of life found in the present study was lower than the findings of Wahed et al (2020), both findings represent a lower quality of life among nurses in other healthcare settings. The possible reasons behind the low quality of life reported among healthcare workers caring for COVID-19 patients could be attributed to the fact that the pathophysiology of COVID-19 was not fully known (Howel, 2021), and the prognosis was unclear compared to other diseases with well-established pathophysiology and treatment outcomes.

Hypothesis 1: There is no significant relationship between socio-demographic characteristics and quality of life of the healthcare workers in Lagos State.

According to the findings of this study, age, gender, marital status and profession showed a significant relationship with quality of life. It was found that younger nurses, unmarried workers, males and workers with higher years of experienced reported better quality of life than their counterparts. These findings are consistent with result of Kings and Fradha (2020) that younger professionals are more able to cope with the increasing incidence of COVID-19 patients on hospital admission. The findings of Woon, Mansor, Mohamad, Teoh, and Leong (2021) on the effects of the COVID-19 pandemic on the quality of life (QoL) of Malaysian healthcare workers and its predictive factors is also in agreement with the findings of this study that clinical and demographic characteristics predicted quality of life, whereas younger age and being single, and having considerable number of working experience were positively associated with quality of life. Cuartero-Castañer, Hidalgo-Andrade, and Cañas-Lerma, (2021) findings on professional quality of life, work engagement, and self-care of healthcare workers during the COVID-19 pandemic in Ecuador is in disagreement with this result that healthcare workers have an average quality of life in Ecuador. However, their findings support the findings of this study that there was a significant relationship between the socio-demographic characteristics of the healthcare givers and the quality of life in Ecuador.

Hypothesis 2: Knowledge level of COVID-19 infection will not predict the quality of life of the healthcare workers in Lagos State.

The results of the findings of hypothesis two revealed that that knowledge level significantly predicted the quality of life among healthcare workers. The findings further revealed that there was a significant positive relationship between the respondents' level of knowledge of COVID-19 and the quality of life among healthcare workers in Lagos. The findings are in agreement with the findings of Wahed, et al (2020) that the overall knowledge level of health care worker (HCWs) was found to be generally good especially among physicians which also predicted their quality of life. A positive attitude was detected among allied health professionals more than physicians in Egypt. Also, the findings is in agreement with findings of Limbu, Piryani and Sunny (2020) that there is comparably better knowledge regarding COVID-19 among healthcare workers and the group with higher knowledge also reported increased quality of life. Appropriate practice correlates with better knowledge and positive

attitude towards COVID-19 infection which eventually predict quality of life. However, the findings is in disagreement with the findings Ghimire, Dhungel and Pokhre, (2020) which aimed at determining the knowledge, attitude and practices among healthcare workers in NEPAL. Their survey findings showed deficiencies in knowledge and appropriate practice among the HCWs, in prevention of SARS-CoV-2 transmission. However, Ghimire, Dhungel and Pokhre, (2020) further reported that despite high level of knowledge, the quality of life of healthcare workers was low.

Hypothesis 3: Attitude will not predict the quality of life of the healthcare workers in Lagos State.

Findings of this study has shown that the healthcare workers attitude did not significantly predict the quality of life. Attitudes towards COVID19 were a mix of both positive and negative viewpoints. This contradicts the result of Opara (2021) that participant with positive attitude towards COVID-19 were more likely to report good quality of life. Stojanov, Malobabic, Stanjevic, Stevic, Milosevic and Stojanov (2020), in their study on the quality of sleep and health related quality of life, reported that there is a very low quality of life among the healthcare providers for of COVID-19 patients who possessed negative attitude towards it. This can be justified by the fact that healthcare workers who believed that COVID-19 can be prevented using standard precaution measures would show higher levels of satisfaction and lower fear rates.

More so, healthcare workers that feel that Nigeria can overcome this pandemic showed better quality of life. This is in tandem with the findings of Abdul-Afeez (2020) who found that individual impressions about the novel disease can either cause improved or poorer state of physical and mental wellbeing. Also, it had been reported that perceived severity of COVID-19 can impact on the quality of life. For example, respondents who felt that COVID-19 is an incurable disease are more likely to report poor quality of life.

Conclusion

The study concluded that the healthcare workers in Lagos state have good knowledge of COVID-19 infection as more than half of the respondents had good knowledge of infection and that that majority of respondents had positive attitude towards COVID-19 in Lagos State. Findings revealed that the respondents' quality of life was poor. Age, gender, marital status and profession showed a significant relationship with quality of life. It was found that younger nurses, unmarried workers, males and workers with higher years of experienced reported better quality of life than their counterparts. Knowledge level significantly predicted the quality of life among healthcare workers. The findings further revealed that there was a significant positive relationship between the respondents' level of knowledge of COVID-19 and the quality of life among healthcare workers in Lagos.

Recommendations

Based on the findings of this study, it is therefore recommended that:

1. Healthcare workers caring for COVID-19 patients should be encouraged to go for training and re-training in order to boost their knowledge and quality of life.
2. Areas of knowledge deficit observed in this study should be the focus of continuing education programs.

3. Focused attention should be paid to older nurses caring for COVID-19 patients in order to provide social support as this group of healthcare workers are prone to low quality of life.
4. Satisfaction and quality of life of healthcare workers in COVID-19 ward should be the focus of quality assurance activities in the hospitals.

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