

Perceived Risk of Covid-19 And Socio-Demographic Determinant Among Healthcare Workers in Rivers State, Nigeria

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ABSTRACT

This study investigated the perceived risk of covid-19 and socio-demographic determinant among healthcare workers in Rivers State. Four objectives, and three hypotheses were stated to guide the study. The study adopted the descriptive research design with a population which comprised of all the healthcare workers at the secondary and tertiary health facilities in Rivers State. A sample size of 383 was selected using the multi-stage sampling procedure. Data was collected using a structured questionnaire and analysed with the aid of the statistical product for service solution (SPSS) version 23.0, using statistical tools such as percentage, mean, and chi-square test at 0.05 level of significance. The result showed that 78.7% felt that their job is putting them at great risk of contracting COVID-19 and 76.1% felt they were unlikely to survive if they get infected with COVID-19. overall, there was a high perceived risk to COVID19 among healthcare workers. The result showed that there was no significant association between age and perceived risk of COVID-19 (X^2 -value = 6.76, $df = 4$, p -value > 0.05). There was no significant association between religion and perceived risk of COVID-19 (X^2 -value = 3.73, $df = 2$, p -value > 0.05). There was no significant association between cadre of health worker and perceived risk of COVID-19 (X^2 -value = 3.73, $df = 2$, p -value > 0.05). It was concluded that healthcare workers had high perceived risk of Covid-19 and the socio-demographic determinants were age, religion and cadre of the workers. It was recommended that, more non-governmental organizations should partner with the government to continually provide all necessary resourced for COVID-19 prevention among healthcare workers.

Keywords: COVID-19, Determinants, Demographics, Health, Risk Workers

Introduction

Coronavirus Disease -19 (COVID-19) is a ravaging infectious viral disease that is caused by severe acute respiratory syndrome coronavirus 2 (SAR-COV-2), it is a single-stranded RNA virus belonging to the Coronaviridae family (Hassan et al., 2020). Iorfa et al. (2020) noted that due to the rapidly increasing contagious nature of the Coronavirus, which is overwhelming critical care and frontline health care staff and the possibility of transmission by asymptomatic carriers, government around the world closed the borders, announced total or partial lockdown, restricted movements, initiated social distancing and facemask regulations as preventive measures to limit or prevent the spread of the Coronavirus within their population during the early stage of the start of the epidemics. The total number of infected persons in Nigeria as at February 7, 2021 has laboratory confirmed cases at 139, 242 with 25,038 active cases and 1,647 deaths (NCDC). The population in recent time could be said to be generally at risk of infection as it now said that there is community transmission of the virus, thus individual at the community may play pivotal role in the transmission of the virus. According to DeZwart et al. (2009), the behaviour of the general population or specific risk group can play an important role in both the spread and control of infectious diseases.

They stated that the effectiveness of new emerging infectious diseases would largely be dependent on the behaviour of the population and their willingness to adhere to the recommended preventive measures like social distancing, use of face mask, hand washing, covering of the mouth and nose when sneezing or coughing, and staying at home as stipulated by the World Health Organization. COVID-19 is an infectious disease that has a little information on how its threat is perceived, i.e. its perceived susceptibility which is, the perception of the risk the individual has that he/she will contract the disease, and its perceived severity which is defined as the belief of the individual in how serious contracting the illness would be for him/herself, as a new form of infectious disease (Brewer et al., 2004). Preventive action is assumed to be most likely when perceived severity and perceived susceptibility are high, while the costs of behavioural change are low. Most studies found a positive association between susceptibility and preventive behaviour but several negative results have also been reported. Also Iorfa et al., (2020), noted that the trajectory of an infectious disease outbreak is often affected by the behaviour of individuals and the behaviour is often related to individual's perception of threat.

Perceived risk is the perception about the threat of a disease. Perceived risk of covid-19 among healthcare workers can influence how often and consistent they use PPEs. When healthcare workers feel that they are at high risk of being exposed and contracting the Covid-19 virus, they will be encouraged to consistently use the equipment (Savoia et al., 2020). In the study of Alao et al. (2020), it was concluded that though perceived risk and perceived severity triggers high perceived threat, but had not met with corresponding adoption of behaviour change.

Risk perception is a psychological term that refers to the individual's perception and understanding of various objective risks existing in the outside world and emphasizes the influence of the experience acquired by individuals from intuitive judgement and subjective feelings on cognition. Healthcare workers risk perception refers to their knowledge, feelings and understanding of risk factors and risk characteristics in the healthcare profession. A high perception of risk can influence the retention of healthcare workers within the workforce and their willingness to care for infected patients, particularly if they are concerned about their own and their family's health and safety

from the risk. In contrast HCWs with very high risk perceptions may be compliant to protective behaviours such as vaccinations and personal protective equipment (Yan et al., 2020).

The perception healthcare workers have towards the risk of COVID-19 its key to their adherence to any preventive measure. COVID-19 had impacted lives of several people negatively, including healthcare workers in Rivers State and as part of the strategies in the prevention and control of the infection, the State government in the earlier stage implemented preventive strategies to curb the spread of the diseases by putting in place lock down measures and curfews, enforcing the use of face mask and the restriction of large gathering. Just after all these stringent measure and the ease of movement, observation showed that some do not care or border about the disease. This study thus investigated the perceived risk of COVID-19 and socio-demographic determinant among healthcare workers in Rivers State. The objectives of the study are to:

1. examine the perceived risk of COVID-19 among healthcare workers in Rivers State.
2. investigate age as a factor associated with perceived risk of COVID-19 among healthcare workers in Rivers State.
3. investigate religion as a factor associated with perceived risk of COVID-19 among healthcare workers in Rivers State.
4. investigate cadre of health worker as a factor associated with perceived risk of COVID-19 among healthcare workers in Rivers State.

Hypotheses

The following hypotheses postulated were tested at 0.05 level of significance:

1. There is no significant association between age and perceived risk of COVID-19 among healthcare workers in Rivers State.
2. There is no significant association between religion and perceived risk of COVID-19 among healthcare workers in Rivers State.
3. There is no significant association between cadre of health worker and perceived risk of COVID-19 among healthcare workers in Rivers State.

Methodology

This study adopted the descriptive research design. Nworgu (2018) stated that the descriptive survey research design involves collection of data to describe certain features as they exist at a particular time, through a sample that represents a particular population. The study population comprised of 2,696 healthcare workers in secondary and tertiary health facilities in Rivers State which included eight hundred and fifty-nine (859) doctors, one thousand one hundred one hundred and ninety (1,190) nurses, sixty-four (64) pharmacists, fifty three (53) Pharmacy Technician, three hundred and fifty two (352) Laboratory Scientist, fifty two (52) Laboratory Technicians, one hundred and three (103) social workers and twenty three (23) drivers. A sample size of 383 was determined using the Taro Yamane formula: $n = N/1+N(e)^2$. A multi-staged sampling procedure was adopted for the study. The procedure involved four stages. Firstly, the stratified sampling technique was used to group the State into three strata based on Rivers senatorial districts; Rivers East, Rivers Southeast and Rivers West; secondly, a simple random sampling method using balloting was used to select three health facilities from each of the Senatorial district. The third stage involved the determination of number of participants. A proportionate sampling technique was used to select the number of participants to sample in each facility selected while the fourth stage involved the selection of participants using the simple random sampling technique.

The instrument for data collection was a semi-structured and validated questionnaire title: COVID-19 Perceived Risk Questionnaire (CPRQ). The instrument has a reliability coefficient of 0.61 and was administered to the respondents directly by the researcher. The aim of the study and methods to be adopted were clearly explained to the respondents before the administration of the instrument. Questions asked about the study were answered. The researcher sought the consent of the respondents before delivering the questionnaire which were retrieved later after completion of the filling. Data collected was analyzed with the aid of the Statistical Product for Service Solution (SPSS V-25). Statistical tools such as percentage, mean and Chi-square at 0.05 level of significance were used.

Results

The results of the study are shown below in Charts and Tables:

Table 1: Perceived risk to COVID-19

SN	Item	Yes	No	Remark
1	Do you think your job is putting you at great risk of contracting COVID-19	280(78.7)	76(21.3)	High
2	Feeling more stressed at work	294(82.6)	62(17.4)	High
3	There are risks of caring for COVID-19 Patients	267(75.0)	89(25.0)	High
4	Afraid of falling ill with COVID-19	271(76.1)	85(23.9)	High
5	Having little control over being infected or Not	271(76.1)	85(23.9)	High
6	Unlikely to survive if you get infected with COVID-19	271(76.1)	85(23.9)	High
7	Immune to COVID-19	227(63.8)	129(36.2)	High
Overall = high 268(75.3%); low 88(24.7%)				High

Table 1 showed the perceived risk to COVID-19. The result showed that 78.7% felt that their job is putting them at great risk of contracting COVID-19 and 76.1% felt they were unlikely to survive if they get infected with COVID-19. overall, there was a high perceived risk to COVID19 among healthcare workers.

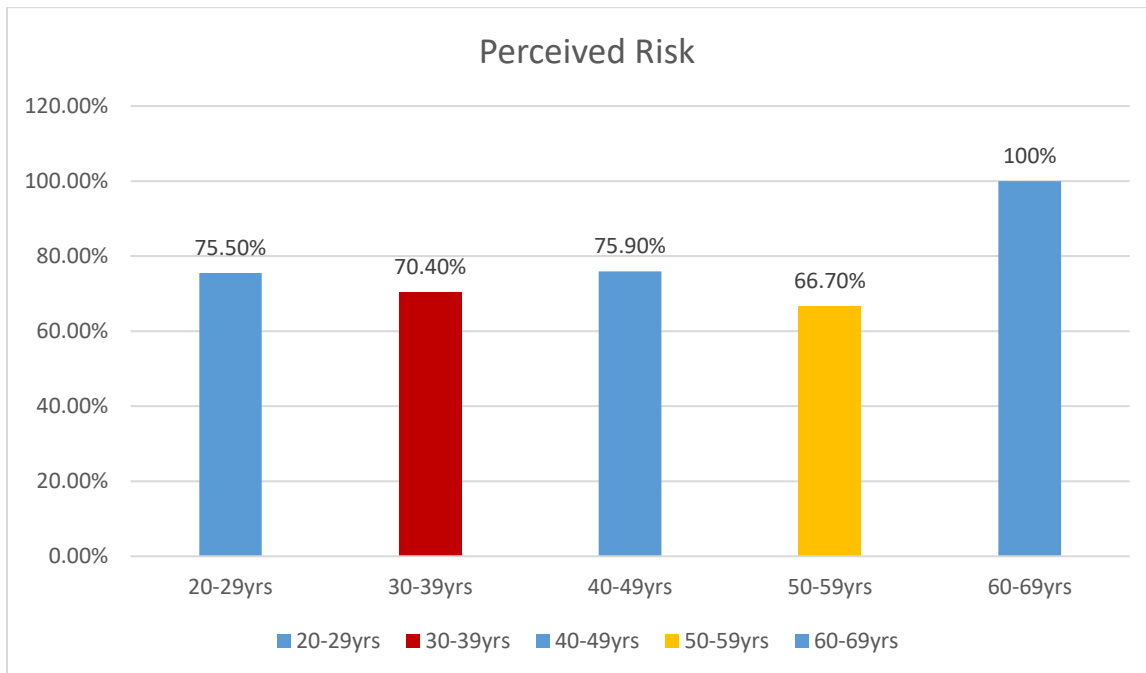


Fig 1: Bar chart showing age and perceived risk among healthcare workers

The result in Fig 1 showed that high perceived risk was found more among those aged 60-69 years (100%), followed by those aged 40-49 years (75.9%), 20-29 years (75.50%), 30-39 years (70.40%) and those aged 50-59 years (66.70%). Thus based on age, high perceived risk of COVID-19 was more among the older healthcare workers.

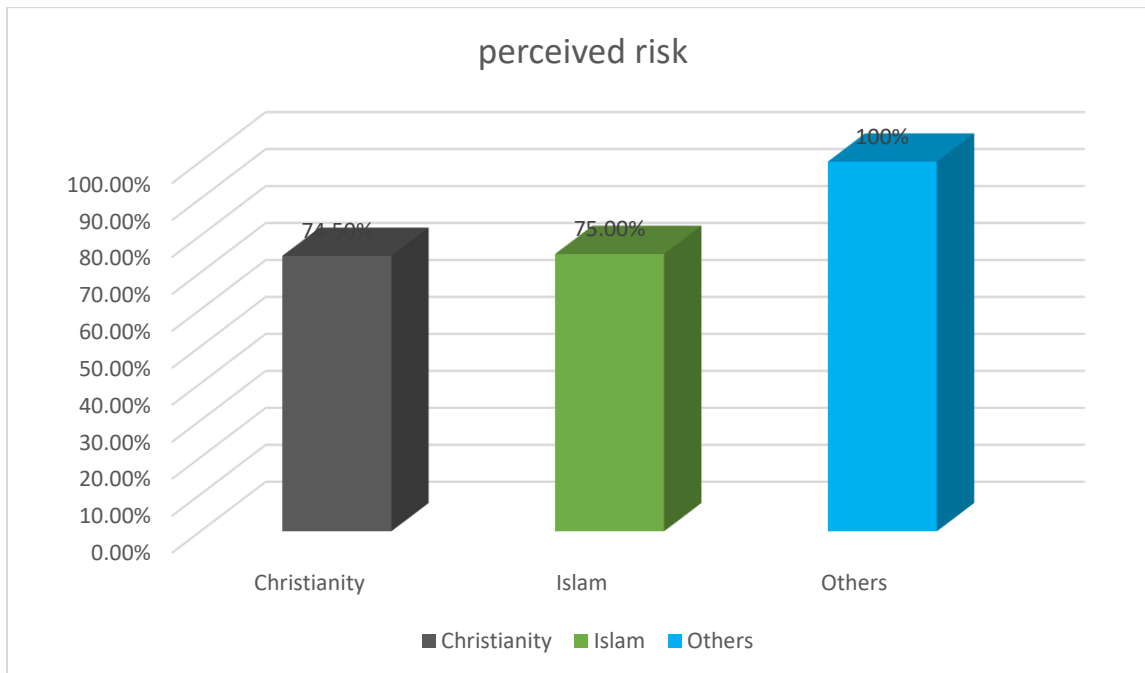


Fig 2: Bar chart showing religion and perceived risk among healthcare workers
The result in Fig 2 showed that high perceived risk was found more among those of other religion (100%) followed by Muslim (75.00%), and Christianity (74.5%). Thus based on religion, high perceived risk of COVID-19 was more among healthcare workers.

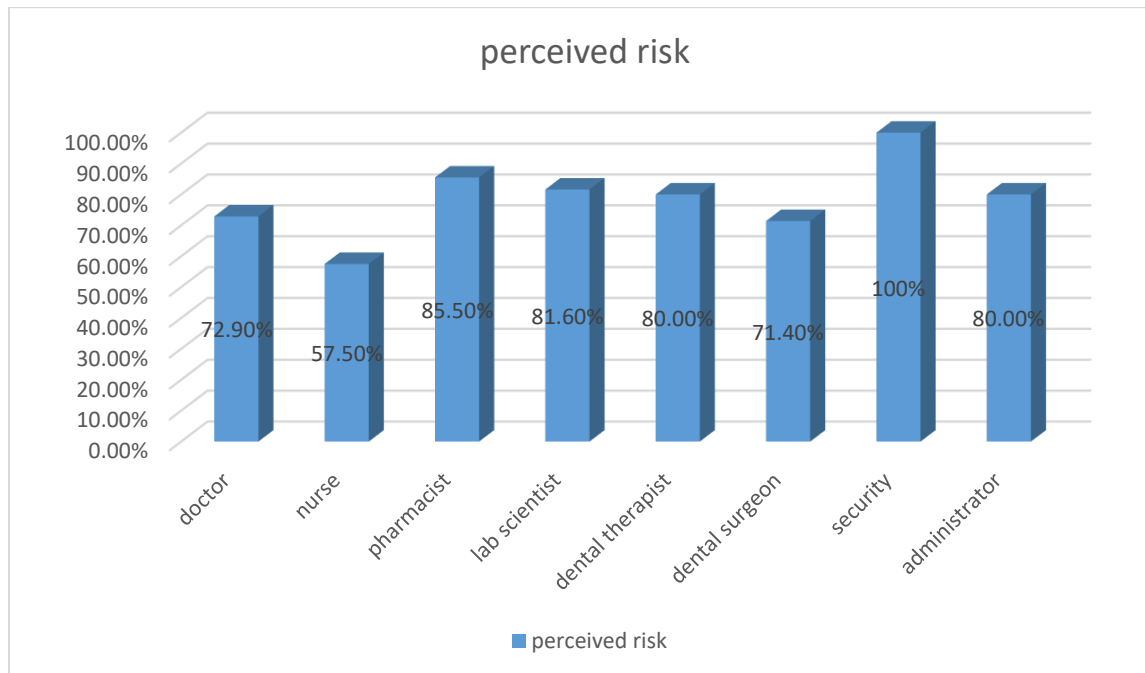


Fig 3: Bar chart showing cadre of health worker and perceived risk among healthcare workers
The result in Fig 3 showed that high perceived risk was found more among the security personnel (100%), followed by pharmacists (85.5%), administrators and dental therapists (80.0% each), doctors (72.90%) and nurses (57.5%). Thus based on cadre of workers, high perceived risk of COVID-19 was more among the security personnel on the healthcare system.

Table 2: Chi-square test of significant association between age and perceived risk of COVID-19 among healthcare workers

Age	Perceived Risk		Total F(%)	df	X ² -value	p-value	Decision
	High F(%)	Low F(%)					
20-29yrs	148(75.5)	48(24.5)	196(100)	4	6.76	0.04*	Rejected
30-39yrs	50(70.4)	21(29.6)	71(100)				
40-49yrs	44(75.9)	14(24.1)	58(100)				
50-59yrs	10(66.7)	5(33.3)	15(100)				
60-69yrs	16(100)	0(0.00)	16(100)				
Total	268(75.3)	0(0.00)	356(100)				

***Significant; p<0.05**

Table 2 showed the Chi-square test of significant association between age and perceived risk of COVID-19 among healthcare workers. The result showed that there was no significant association between age and perceived risk of COVID-19 (X^2 -value = 6.76, df = 4, p < 0.05). Thus, the null hypothesis which stated that there is no significant association between age and perceived risk of COVID-19 among healthcare workers in Rivers State was rejected.

Table 3: Chi-square test of significant association between religion and perceived risk of COVID-19 among healthcare workers

Religion	Perceived Risk		Total F(%)	df	X ² -value	p-value	Decision
	High F(%)	Low F(%)					
Christianity	245(74.5)	84(25.5)	329(100)	2	3.73	0.01*	Rejected
Islam	12(75.0)	4(25.0)	16(100)				
Others	11(100)	0(0.00)	11(100)				
Total	268(75.3)	0(0.00)	356(100)				

***Significant; p<0.05**

Table 3 showed the chi-square test of significant association between religion and perceived risk of COVID-19 among healthcare workers. The result showed that there was a significant association between religion and perceived risk of COVID-19 (X^2 -value = 3.73, df = 2, p-value > 0.05). Thus, the null hypothesis which stated that there is no significant association between religion and perceived risk of COVID-19 among healthcare workers in Rivers State was rejected.

Table 4: Chi-square test of significant association between cadre of health worker and perceived risk of COVID-19 among healthcare workers

Religion	Perceived Risk		Total F(%)	df	X ² - value	p-value	Decision
	High F(%)	Low F(%)					
Doctor	132(72.9)	49(27.1)	181(100)	7	13.92	0.04*	Rejected
Nurse	23(57.5)	17(42.5)	40(100)				
Pharmacist	65(85.5)	11(14.5)	76(100)				
Laboratory scientist	31(81.6)	7(18.4)	38(100)				
Dental therapist	4(80.0)	1(20.0)	5(100)				
Dental surgeon	5(71.4)	2(28.6)	7(100)				
Security	4(100)	0(0.00)	4(100)				
administrator	4(80.0)	1(20.0)	5(100)				
Total	268(75.3)	0(0.00)	356(100)				

***Significant; p<0.05**

Table 4 showed the chi-square test of significant association between cadre of health worker and perceived risk of COVID-19 among healthcare workers. The result showed that there was no significant association between cadre of health worker and perceived risk of COVID-19 (X^2 -value = 3.73, df = 2, p-value > 0.05). Thus, the null hypothesis which stated that there is no significant association between cadre of health worker and perceived risk of COVID-19 among healthcare workers in Rivers State was not rejected.

Discussion of findings

The result showed that 78.7% felt that their job is putting them at great risk of contracting COVID-19 and 76.1% felt they were unlikely to survive if they get infected with COVID-19. Overall, there was a high (75.3%) perceived risk to COVID19 among healthcare workers. The finding of this study corroborate that of Oleribe et al. (2020) conducted a study in the public perception of Covid-19 management and response in Nigeria which showed high perception towards COVID-19. The findings of the study is at variance with that of Zhong et al. (2020) whose study on risk perception and emotional states among COVID-19 patients in Wuhan, China whose findings showed low perceived risk of COVID-19 (42.%).

The result in Fig 1 showed that high perceived risk was found more among those aged 60-69 years (100%), followed by those aged 40-49 years (75.9%), 20-29 years (75.50%), 30-39 years (70.40%) and those aged 50-59 years (66.70%). Thus based on age, low perceived risk of COVID-19 was more among the older healthcare workers. The findings of the study is in line with that of Zhong et al. (2020) whose study on risk perception and emotional states among COVID-19 patients in Wuhan, China whose findings showed that middle aged and older participants (40%) reported slightly higher level of perceived risk of COVID-19. The finding of this study corroborate that of Oleribe et al. (2020) conducted a study in the public perception of Covid-19 management and response in Nigeria which showed high perception towards COVID-19 with a mean age of 42.1%.

The result in Fig 2 showed that low perceived risk was found more among those of other religion (100%) followed by Muslim (75.00%), and Christianity (74.5%). Thus based on religion, low perceived risk of COVID-19 was more among healthcare workers. The finding of this study corroborate that of Oleribe et al. (2020) conducted a study in the public perception of Covid-19 management and response in Nigeria which showed high perception towards COVID-19 with majority of the respondents who are Christians (82.6%).

The result in Fig 3 showed that low perceived risk was found more among the security personnel (100%), followed by pharmacists (85.5%), administrators and dental therapists (80.0% each), doctors (72.90%) and nurses (57.5%). Thus based on cadre of workers, low perceived risk of COVID-19 was more among the security personnel on the healthcare system. The finding of this study corroborates that of Olayinka and Aanuoluwapo (2020) whose study on the perceptions and practices during the Covid-19 pandemic in an urban community in Nigeria showed an association between COVID-19 perception and socio-demographic characteristics.

Conclusion

Based on the findings of the study, it was concluded that healthcare workers had high perceived risk of Covid-19 and the socio-demographic determinants were age, religion and cadre of the workers.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. More non-governmental organizations should partner with the government to continually provide all necessary resourced for COVID-19 prevention among healthcare workers.
2. The ministry of health should heighten their effort to protect healthcare workers from contracting diseases.
3. The healthcare workers should individually engage in preventive behaviours and its improvement by adopting various strategies which can reduce the severity of the disease.

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