KNOWLEDGE, ATTITUDE AND PREVENTION OF CORONAVIRUS DISEASE AMONG NURSING STUDENTS IN SOUTHWEST NIGERIA

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Abstract

The ravaging coronavirus has brought a huge burden to the health sector, and the nurses, as part of front-line workers, bear part of this burden. Even with this burden, much is yet to be known about the novel coronavirus. This study assessed the knowledge, prevention, and attitude towards coronavirus disease among nursing students in southwest Nigeria. It is a descriptive quantitative study and a cluster sampling technique was used to select three hundred respondents. The data was collected through an online self-structured q questionnaire with a reliability index of 0.72. The data were analyzed using SPSS 22.0 using descriptive statistics presented as tables and charts while inferential statistics were tested with Chi-square. The hypotheses of the study were tested at a p=0.05 level of significance. The findings of this study revealed that the mean age of the respondents was 22.16 ± 3.11 years. The respondents are knowledgeable about coronavirus, with the mean score of above 16.16 ±1.840; The level of prevention of the coronavirus disease is high. Also, the respondents had a positive attitude towards coronavirus disease. Findings also observed that there was no association between knowledge of coronavirus and the attitude towards it with p=0.401. Also, there was no association between knowledge of coronavirus and prevention of coronavirus disease with p=0.375. It is therefore recommended that nursing students should be encouraged to maintain their level of knowledge, attitude and prevention on corona virus and all other infectious diseases. Nursing students should be given adequate consideration by their institutions and provided with materials and information for caring in a pandemic situation,

Keywords: Attitude, Knowledge, Prevention, Coronavirus Disease, Nursing Students

Introduction

Coronaviruses are a large family of viruses that may cause illness in humans and animals. They are known to cause respiratory infections in humans. These may range from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS), Backer, Klinkenberg & Wallinga, (2019). Coronavirus disease 2019 (abbreviated "COVID-19") is an emerging respiratory disease that is caused by a novel coronavirus and was first detected in December 2019 in Wuhan, China. (Munster, Koopmans, Doremalen, Van & De Wit, 2020). The disease is highly infectious, and its major clinical symptoms include fever, dry cough, fatigue, myalgia, and dyspnea (Ministry of Health, Ontario, 2020). In China, 18.5% of the patients with COVID-19 develop to the severe stage, which is characterized by acute respiratory distress syndrome, septic shock, difficult-to-tackle metabolic acidosis, and bleeding and coagulation dysfunction (Chen, Dong, Qug & Gong, 2020).

The World Health Organization (WHO) declared it a public health emergency of international concern on January 30 and called for collaborative efforts of all countries to prevent the rapid spread of COVID-19 (WHO, 2019). During the first week of March 2020, an alarming number of new cases were reported globally, and COVID-19 emerged as a pandemic. Globally, as at the time of this study, there were 130,643,579 confirmed cases of COVID-19, including 2,844,807 deaths (WHO, 2020). The index case was confirmed in Lagos, Nigeria in February 2020, and as at the time of this study, Nigeria had total confirmed cases of 163,113, and 2,058 deaths, with Lagos being the epicenter with 57,398 confirmed cases. The disease is spread by human-to-human transmission through droplets, feco-oral, and direct contact and has an incubation period of 2-14 days (Backer et al., 2019). According to the International Council of Nurses (ICN, 2020), based on information collected from 30 countries' National Nursing Associations, government figures, and media reports, over 230.000 health workers are believed to have been infected with COVID-19 and possibly twice that, mainly due to lack of protective equipment. Also, ICN reported that more than 600 nurses have died as a result of the disease. Therefore, applying preventive measures to control COVID-19 infection is the most critical intervention. Healthcare workers, especially the nurses, are always in contact with patients, and thus, they (nurses) are at high risk of infection (Nguyen, Drew, Graham, et al., 2020).

The World Health Organization initiated training programs on preventive strategies against coronavirus disease; it included raising awareness and training nurses and other healthcare workers in readiness for the care of coronavirus patients (WHO,

2020; CDCP, 2019). The initiative was necessary because misunderstandings, lack of adequate knowledge, wrong perception, and poor technical know-how of operating the required equipment might affect the efforts to provide the necessary treatment. The above issues could lead to the rapid spread of infection in hospitals and within the community (Hoffman & Silverberg, 2020).

Knowledge can influence nurses' perceptions due to their past experiences and beliefs (Vinck, Pharm, Bindu, Bedford & Nilles, 2019). Also, lack of knowledge can cause a delay in the recognition and handling of potential COVID-19 patients during the pandemic period. The high infection rate of the disease in Lagos (the epicenter of the disease, sharing interstate boundary with Ogun State) poses a threat to the nurses, and this may affect the nursing students significantly.

Thus, this study investigated the knowledge, attitude, and prevention towards coronavirus disease among nursing students in South-West Nigeria, as they are the future nurses that need to be well informed about public health issues; this will help them to be better equipped to render their professional nursing care competently in the future.

Objectives of the Study
1. To determine the knowledge of coronavirus disease among nursing students.
2. To determine prevention measures against coronavirus disease among nursing
3. To assess the attitude towards coronavirus disease among nursing students.

Research Questions
1. What is the knowledge of coronavirus disease among nursing students?

2. What are the preventive measures adopted by nursing students towards coronavirus diseases?

3. What is the attitude of nursing students towards coronavirus diseases?

Methodology
The research design adopted was a cross-sectional quantitative design.   The research setting is South-West region of Nigeria: The South-West region of Nigeria is made up of six states: Lagos, Ogun, Oyo, Osun, Ondo, and Ekiti. It is bounded in the east by Edo and Delta states, in the north by Kwara and Kogi states, in the west by the Republic of Benin, and in the south by the Gulf of Guinea. The climate of South-West Nigeria is tropical in nature and characterized by wet and dry seasons. The Scheaffer, Mendenall, and Ott formula (2018) was used to determine the sample size of 300 respondents using

a proportionate quota. Cluster sampling technique was used to select 48 respondents from institution A in Lagos, 50 from institution B in Lagos, 95 respondents from institution C in Ogun state, 61 respondents from institution D in Lagos, and 46 respondents from an institution in Ogun state.

The research instrument was a self-structured questionnaire. It consists of four sections with closed-ended questions that assessed: the demographic profile of the respondents; the knowledge of coronavirus disease of the respondents; the attitudes towards coronavirus disease among the respondents and the preventive measures against coronavirus disease among the respondents. The validity of the instrument was determined through the face and content validity test by experts in the field of nursing research and public health. While the reliability of the instrument was established by the test-retest method; here, the instruments were administered to 10% of the total respondents from another nursing institution, which was not one of the selected institutions in the South-West. The reliability index was r= 0.72.

The data was collected through electronic means using Google Forms via WhatsApp and email. The socio-demographic variables were analysed using SPSS version 22. Results were interpreted with descriptive and inferential statistics (Chi-square) at a significant level of p = 0.05 and presented in tables, graphs, and charts. Ethical approval was sought from Health Research Ethics Committee, Lagos University Teaching Hospital, to conduct the study. Confidentiality of the personal information of the respondents was maintained throughout the study by making respondents' information anonymous, and asking respondents to provide honest answers. Eligible nursing students' participation in the study was voluntary, and they were informed that there would be no compensation. Informed consent was obtained electronically from the respondents.

Results
Table 1 showed that the mean age of the respondents was 22.16±3.11 years, 289 (96.3%) were single, 79 (26.3%) were from 400 level, and 116(38.6%) of the respondents had up to 3 years of clinical experience. The majority, 260 (86.7%), were Christians. This study observed that majority of the respondents are from monogamy family and their parents responsible for their school fees. Majority of the respondents' parents have tertiary education and are Yoruba by tribe.

Research Question One
What is the knowledge of coronavirus disease among nursing students?

Figure 1 showed that the mean knowledge was 16.16 ±1.840, 86 (28.7%) had below-average knowledge of coronavirus, 73(24.3%) respondents had average knowledge and 141 (47.0%) had above-average knowledge of coronavirus. This study conclude that respondents are knowledgeable about coronavirus

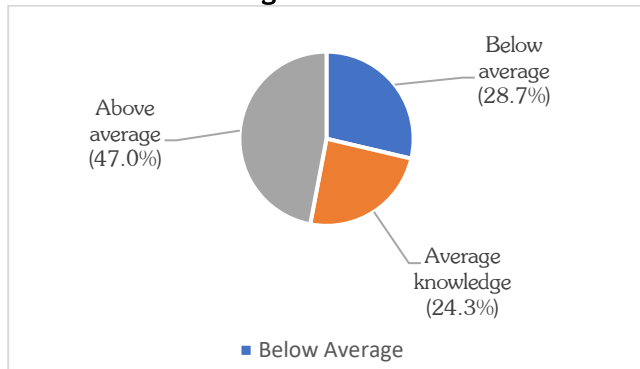**Mean knowledge score =16.16 ±1.840**

Fig 1: Overall Knowledge of Coronavirus

Research Question Two
What are the preventive measures adopted by nursing students towards coronavirus diseases?
Figure 2 showed that a little above average, 152(50.7%) respondents had a high level of prevention of coronavirus disease while 148(49.3%) respondents had a low level of prevention of coronavirus disease.
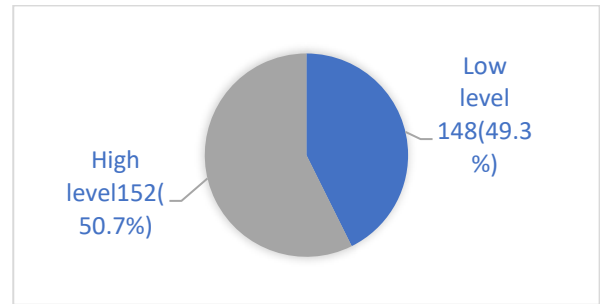

Fig 2: Overall Level of Prevention

Research Question Three
What is the attitude of nursing students towards coronavirus diseases?
Figure 3 showed that the mean score on attitude was 8.733 ±1.8692: 118(39%) of the respondents had a negative attitude towards the prevention of coronavirus, while 182(61%) had a positive attitude.
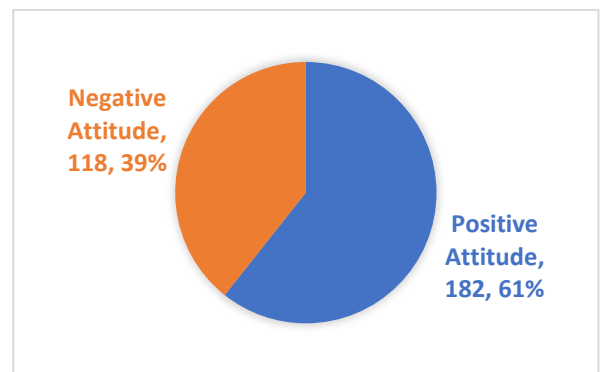

Fig 3: Attitude towards Coronavirus Disease

Mean Score 8.733 ±1.8692
Table 2 showed that there was no association between knowledge of coronavirus and attitude towards prevention of coronavirus disease among Nursing Students with p=0.401.

Table 1: Socio-Demographic Characteristics of the Respondents

Variable	Frequency (n=300)	Percentage (%)
Age (years)		
15-19	59	19.7
20-24	209	69.7
25-29	25	8.3
> 30	7	2.3
Nursing Institution		
Institution A	48	16.0
Institution B	50	16.7
Institution C	95	31.7
Institution D	61	20.3
Institution E	46	15.3
Level		
200	74	24.7
300	73	24.3
400	79	26.3
500	74	24.7
Marital status		
Single	289	96.3

Married	11	3.7
How many years have you been exposed to clinical practice		
1	29	9.7
2	89	29.7
3	116	38.6
4	66	22.0
Religion		
Christianity	260	86.7
Islam	40	13.3
Which type of family did you come from		
Monogamy	253	84.3
Polygamy	24	8.0
Single parent	17	5.7
Nuclear family	1	.3
Others	5	1.7
Your fees are paid by		
Parents	269	89.7
Relations	13	4.3
Social support	6	2.0
Others	12	4.0
Parents level of education		
Primary	5	1.7
Secondary	46	15.3
Tertiary	245	81.7
None	4	1.3
Tribe		
Yoruba	219	73
Igbo	75	25
Hausa	6	2
Total	**300**	**100.0**

Mean age= 22.16 ± 3.11 years; Mean year exposed = 2.73 ± 0.91 years

Table 2: Association between Knowledge and Attitude to Coronavirus among Nursing Students

Knowledge of Respondents		Attitude of Respondents					
		Negative	Positive	Total	X^2	Df	p-value
	Below Average	39(45.3)	47(54.7)	86(100)	1.828	1	0.401
	Average	27(37.0)	46(63.0)	73(100)			
	Above Average	52(36.9)	89(63.1)	141(100)			
	Total	**118(39.3)**	**182(60.7)**	**300(100)**			

Table 3 showed that there was no association between knowledge of coronavirus disease and its prevention among Nursing Students in South-West, Nigeria, with p= 0.375.

Table 3: Association between Knowledge and Prevention of Coronavirus among Nursing Students

Prevention of COVID 19		Knowledge of Respondent			Total	X^2	df	p-value
		Below Average	Average	Above average				
	Low	42(28.4)	41(27.7)	65(43.9)	148(100)	1.961	1	0.375
	High	44(28.9)	32(21.1)	76(50.0)	152(100)			
	Total	**86(28.7)**	**73(24.3)**	**141(47.0)**	**300(100)**			

Discussion

This study examines the knowledge, prevention, and attitude towards coronavirus disease among nursing students in South-West, Nigeria. The demographic characteristics of the study revealed that the majority of the respondents were from the Yoruba tribe. The likely reason for this occurrence may not be far from setting the study in the South-West, Nigeria. Majority of the respondents were in 400 level, and 38.6% have had three years of clinical exposure.

Findings from this study revealed that respondents' level of knowledge on coronavirus disease was above average, with the mean score of 16.16 ±1.840. These findings are in line with a study done by Baloram (2020) and Modi et al., 2020, where the majority (73.58% and 71.2%) of the respondents had a good knowledge of coronavirus disease. The findings of this study are incongruent with a study done in India by Agarwal et al. (2020), which revealed that 40.6% out of a total of 616 respondents were not knowledgeable of coronavirus. The high level of knowledge revealed by this study may be because the coronavirus pandemic had kept the respondents out of school in the bid to maintain social/physical distancing. This peculiar situation might have cost them a lot and might indirectly call their attention to seek information and update on coronavirus disease, given that some of the respondents were students from some institutions in the epicenter of the disease. This situation probably may call their attention to seek more knowledge on the disease.

This study revealed that the respondents had a high level of prevention. These findings are also in agreement with Jang (2020), who identified the need for teaching the nurses on infection control measures. Also, Baloram (2020) revealed that students observed social distancing and wearing a face mask (60%), hand washing and sanitizing (66.42%), and staying at home (84.72%) as preventive. The high level of prevention observed among the students might have been due to the location of the study and some other factors that were not captured in this study.

These findings showed that 60.7% of the respondents had a positive attitude towards coronavirus disease. This study was not in agreement with a study done in the UK by The Children and the Young People Students Nurse Network (2020), which assessed how nursing students felt about coronavirus disease. Their study revealed that 21% of the respondents felt extremely frightened, which is a negative attitude towards coronavirus disease. Also, this study is not similar to a study done in India by Agarwal et al. (2020), which revealed that 70% were reluctant to attend a clinical practice for fear of contracting the virus.

The respondents in this study displayed positive attitude which might have emanated from the respondents' good knowledge of coronavirus, coupled with the high level of preventive practices against coronavirus disease. All these would have boosted their morale and helped to improve their attitude towards coronavirus disease while discharging their professional duty.

The inferential analysis revealed that there was no association between the knowledge of coronavirus disease and the attitude towards it with p= 0.401, and there was no association between knowledge of coronavirus and the prevention of coronavirus among nursing students in South-West, Nigeria with p= 0.375. This result implies that the respondents' knowledge of coronavirus did not affect their attitude towards the coronavirus disease and preventive measures against it. The positive attitude displayed towards coronavirus disease plus the high level of prevention of coronavirus might be related to other factors which are not under the scope of this study, factors such as affective skills and disposition for appropriate emotions and responses, for example, fear or stigma of contracting the disease and spreading it to other members of their families. This outcome might also be due to the environment of the study in the epicenter of the disease and its neighboring state (Ogun).

Conclusion and Recommendation
This study revealed that most of the respondents had a good knowledge of the coronavirus disease, a high level of prevention, and a positive attitude towards coronavirus disease. It was recommended that, nursing students should be given adequate consideration by their institutions and provided with materials and information for caring in a pandemic situation.

Implication to Nursing
For nursing students to become staff nurses, with good skills in nursing care, the students must be exposed to all aspects of nursing care that will help to prepare them in all learning domains (cognitive, affective, and psychomotor skills) as regards their profession.

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