

Original Article

Coronavirus: Nursing Students' Knowledge and Risk Perception of Clinical Practice during the Pandemic

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ABSTRACT

Background: The attendance of nursing students in clinical settings is an inherent element of the nursing education, and it is the same even with the coronavirus disease 2019 (COVID-19) pandemic. Globally, more than 260 nurses have been killed by the COVID-19 disease and the number is still increasing. **Objective:** The study assessed nursing students' perception of clinical practice amidst coronavirus pandemic in southwest Nigeria. **Methods:** This is a cross-sectional study that utilized a multistage sampling method to select 300 respondents from the selected nursing institution in southwest Nigeria. The questionnaire is made up of three sections namely, sociodemographic variables, knowledge of COVID-19, and students' perception of clinical practice. Data were collected with Google Form and analyzed using descriptive and inferential statistics. **Result:** The mean age of the respondents was 22.16 ± 3.11 years and the mean year exposed to clinical practice was 2.73 ± 0.91 years. Majority (71%) had good knowledge of coronavirus, with mean \pm standard deviation (SD) 16.16 ± 1.84 , while 57.7% had a positive perception of clinical practice during coronavirus pandemic, with a mean \pm SD of 3.62 ± 1.22 . There was no significant difference between knowledge and perception of clinical practice post coronavirus pandemic, $P = 0.088$. There is a significant relationship between nursing students' perception of clinical practice with coronavirus and nursing institution ($P = 0.001$) and level of study ($P = 0.001$). **Conclusion:** The study showed that nursing students were willing to continue with their clinical practice even with coronavirus patients in the wards.

KEYWORDS: *Clinical practice, Coronavirus, Nursing student, Perception*

INTRODUCTION

Coronavirus infections are emerging respiratory viruses that are known to cause illness ranging from the common cold to severe acute respiratory syndrome.^[1,2] The World Health Organization declared the novel coronavirus disease 2019 (COVID-19) a public health emergency of international concern on January 30.^[3] In the sense that, COVID-19 outbreak was unique in terms of high pathogenicity and mortality compared to the previous epidemics by coronaviruses.^[4-6]

The pattern of sporadic spread and importation of COVID-19 in Africa affirms a previously published report assessing the preparedness and vulnerability of African countries against importations of COVID-19^[7,8] In March 2020, Nigeria reported its

first case of COVID-19 and as of the date, an estimate of 27,020 cases with over 624 deaths have been recorded.^[9] The first case of COVID-19 in Nigeria was reported in Ogun state and Lagos state is the Epi-center of COVID-19 both are located in the Southwestern part of Nigeria.

Nursing training consists of theoretical and practical learning experiences that enable nursing students to acquire the knowledge, skills, and attitudes necessary

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Submitted: 31-Aug-2020 **Revised:** 21-Sep-2020 **Accepted:** 12-Jan-2021
Published: 20-Apr-2021

How to cite this article: Abazie OH, Okwuikpo MI, Adetunji AJ, Nweke CI. Coronavirus: Nursing students' knowledge and risk perception of clinical practice during the pandemic. *Nurs Midwifery Stud* 2021;10:107-13.

Access this article online	
Quick Response Code: 	Website: www.nmsjournal.com
	DOI: 10.4103/nms.nms_76_20

for providing nursing care. Clinical experience plays a vital role in proper clinical-based nursing education, and this affects the quality of learning in nursing students. The attendance of nursing students in clinical settings is an inherent element of the nursing education.^[10] Clinical learning experiences require the interaction of nursing students, with other health-care workers, patients, and utilization of all the hospital units. Such interactions can simplify or inhibit the learning process in nursing students and impact on their transition to clinical practice after graduation. The learning environment on hospital wards has a lot of external stimuli which can bring advantages or disadvantages to nursing students.^[11] In the presence of a pandemic like coronavirus, a timely understanding of the risk perception of nursing students toward clinical practice with COVID-19 is still lacking in Nigeria.

Nurses play a central role in providing quality healthcare for those affected by COVID-19. To prevent nurses becoming infected and to prevent nosocomial spread of COVID 19, standard precautions should be used for nursing procedures.^[12,13] There are significant pressures on nurses in providing care in pandemic conditions and the student nurses will not be left out. The use of personal protective equipment (PPE) can be burdensome and the risk of infection for the nurse is high. There is also a risk of stigma due to perceptions that nurses have a high risk of spreading infection.^[14]

Over 90,000 health workers are believed to have been infected with COVID-19. Furthermore, more than 260 nurses have been killed by the disease.^[15] Nurses and nursing students are always in contact with patients and are at risk of exposure to infected cases in health-care settings; thus, nurses are at high risk of contracting COVID-19.

Nursing students have not been on clinical practice since the lockdown and closure of schools in Nigeria. Knowledge can influence the perceptions of clinical practice among the nursing students due to their past experiences and beliefs.^[2] Indeed, it can delay acceptance of the nursing students to resume clinical practice with COVID-19 patients still in the wards. However, the level of knowledge and risk perception of nursing students toward COVID-19 remain unclear. This study was conducted to fill this gap.

Objectives

1. To assess the level of knowledge of COVID-19 among the nursing students in southwest Nigeria
2. To determine the risk perception of nursing students toward clinical practice with COVID-19 on resumption
3. To identify the influence of sociodemographic

variables on the nursing students' perception of clinical practice with COVID-19 on resumption.

METHODS

Study design and participants

This is an online cross-sectional study that utilized a multistage sampling method to determine the perception of nursing students toward clinical practice with COVID-19 on resumption. A purposive sampling method was used in selecting Ogun and Lagos states from the six states in the southwestern states in Nigeria. Lagos as the Epi-center of COVID-19 has a boundary with Ogun state where the first case was reported in Nigeria. Simple random sampling was used in selecting three departments of nursing and two

Table 1: Sociodemographic variables of the nursing students in southwest Nigeria

Variable	Frequency (%)
Age (years)	
15-19	59 (19.7)
20-24	209 (69.7)
25-29	25 (8.3)
>30	7 (2.3)
Mean	22.16 ± 3.11
Nursing institution	
UNILAG	48 (16.0)
LASUCOM	50 (16.7)
Babcock	95 (31.7)
Son Luth	61 (20.3)
Son Abeokuta	46 (15.3)
Academic years	
2 nd	74 (24.7)
3 rd	72 (24.0)
4 th	78 (26.0)
5 th	76 (25.4)
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)
Mean	2.73 ± 0.91
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 (0.3)
Others	5 (1.7)

schools of nursing in the southwest of Nigeria for the study. Convenience sampling was used in selecting 300 respondents from year 2 to year 5 because of the lockdown.

The sample size was calculated using the following formula, where N is the total population (i.e., 646), P was given as 0.5, and d was considered as 0.042.

$$n = \frac{N \left(N \frac{\alpha}{1-\frac{\alpha}{2}} \right)^2 \times pq}{(N-1)d^2 + \left(Z_{1-\frac{\alpha}{2}} \right)^2 \times pq}$$

Data collection instruments

A questionnaire was developed after the literature review, made up of three sections, namely sociodemographic variables with seven questions, knowledge of COVID-19 (20 questions), and perception of clinical practice among students (7 questions). The face and content validity of the questionnaire was confirmed by experts on COVID-19. A pretest of the questionnaire was carried out using 20 students from

the School of Nursing Igando Lagos state, the reliability coefficient was $r = 0.80$. Data were collected using Google Form.

The mean of the correct options on knowledge of coronavirus questions was determined; scores below the mean 16.16 were rated poor, while scores above the mean were rated good knowledge. The mean of the perception of coronavirus questions was determined and scores below the mean 3.62 were rated negative perception, while scores above the mean were rated positive perception.

Ethical consideration

Ethical approval was from Lagos University Teaching Hospital Health Ethical Committee with clearance number, LUTHHREC/EREV/0620/55. The respondents were made to understand that they can decide not to participate in this study with no penalty and that their information would be treated with optimum confidentiality. The informed consent form was attached to each questionnaire.

Table 2: Knowledge of coronavirus disease-19 among nursing students in southwest Nigeria

Items	True, n (%)	False, n (%)	I do not know, n (%)
Coronavirus is a respiratory disease	295 (98.3)	3 (1.0)	2 (0.7)
Clinical symptoms of coronavirus are fever, fatigue, dry cough, and myalgia	278 (92.7)	16 (5.3)	6 (2.0)
Unlike the common cold, stuffy nose, runny nose, and sneezing are less common in persons with the coronavirus	151 (50.3)	128 (42.7)	21 (7.0)
Currently, there is no effective cure for coronavirus, but early symptomatic and supportive treatment can help most patients recover from the infection	297 (99.0)	2 (0.7)	1 (0.3)
Not all persons with coronavirus will develop to severe cases	275 (91.7)	13 (4.3)	12 (4.0)
Only the elderly infected persons and those with chronic illnesses are more likely to be severe cases	239 (79.7)	53 (17.7)	8 (2.7)
Eating or contact with wild animals would result in the infection by the coronavirus	47 (15.7)	197 (65.7)	56 (18.7)
Persons with coronavirus cannot infect others when a fever is not present	24 (8.0)	250 (83.3)	26 (8.7)
Coronavirus spreads through respiratory droplets of infected individuals	293 (97.7)	4 (1.3)	3 (1.0)
Coronavirus spreads by direct contact with infected persons	255 (85.0)	34 (11.3)	11 (3.7)
Coronavirus spreads by contact with contaminated objects and surfaces	285 (95.0)	8 (2.7)	7 (2.3)
Coronavirus spreads by handshake with infected persons	255 (85.0)	37 (12.3)	8 (2.7)
Coronavirus spreads through sharing of cutleries with an infected person	212 (70.7)	55 (18.3)	33 (11.0)
Ordinary residents can wear general medical masks to prevent the infection by coronavirus	247 (82.3)	44 (14.7)	9 (3.0)
It is not necessary for children and young adults to take measures to prevent the infection by coronavirus	30 (10.0)	265 (88.3)	5 (1.7)
To prevent the infection by coronavirus, individuals should avoid going to crowded places such as train stations and avoid taking public transportations	294 (98.0)	2 (0.7)	4 (1.3)
Isolation and treatment of people who are infected with coronavirus are effective ways to reduce the spread of the virus	292 (97.3)	4 (1.3)	4 (1.3)
People who have contact with someone infected with the coronavirus should be immediately isolated in a proper place	290 (96.7)	5 (1.7)	5 (1.7)
An infected person may show symptoms within 2-14 days	285 (95.0)	12 (4.0)	3 (1.0)
There is a proven cure for COVID-19	41 (13.7)	229 (76.3)	30 (10.0)

COVID: Coronavirus disease

Data analysis

Data were collected and analyzed using Statistical Package for Social Science used for data analysis (SPSS) software version 20. Descriptive and inferential statistics were presented in tables, charts, mean standard deviation, and Chi-square. All statistical relationships were presented at $P < 0.05$.

RESULTS

Majority of the participants (69.7%) aged 20–24 years, with mean \pm standard deviation (SD) of 22.16 ± 3.11 years, 26% were in the 4th academic year, and 96.3% were single. Furthermore, 38.6% were exposed to clinical practice for 3 years with mean \pm SD of 2.73 ± 0.91 years, 56.7% were Christian, and 84.3% were from monogamy families [Table 1].

On the assessment of knowledge, 295 (98.3%) respondents indicated that coronavirus is a respiratory disease, 293 (97.7%) indicated that coronavirus spreads through respiratory droplets of infected individuals, and 255 (85.0%) indicated that coronavirus spreads by direct contact with infected persons. Only 30 (10.0%) indicated that it is not necessary for children and young adults to take measures to prevent the infection of coronavirus. Meanwhile, 294 (98.0%) indicated that to prevent the infection by coronavirus, individuals should avoid going to crowded places such as train stations and avoid taking public transportations [Table 2].

Overall, majority of the participants (71.3%) had good knowledge of coronavirus, while 28.7 showed poor knowledge in this area. The mean \pm SD of the students' knowledge was 16.16 ± 1.84 . Furthermore, a majority of the participants (57.7%) had a positive perception about presenting in the clinical setting during the coronavirus pandemic, while 42.3% showed a negative perception in this area. The mean \pm SD of the students' perception was 3.62 ± 1.22 .

Assessment of perception showed that majority of the participants (59%) had mixed feeling when coronavirus is mentioned, 85.3% perceived coronavirus as a pandemic, while 67% wanted to go for clinical practice during coronavirus. Furthermore, 88% indicated that coronavirus would change the way nursing clinical practices are carried out. On a scale of 1–10, 46.3% indicated 7 as the effect of coronavirus on clinical practice in nursing, while 63% were not satisfied with clinical practice in the presence of coronavirus disease. Only 8.3% of the participants indicated that they do not want to continue with clinical practice in nursing because of the coronavirus [Table 3].

No significant relationship was found between knowledge and perception of clinical practice post coronavirus

Table 3: Perception of clinical practice with coronavirus among nursing students

Variable	Frequency (%)
Type of feeling you have when coronavirus is mentioned	
Fear	48 (16.0)
Anger	11 (3.7)
Mix feeling	177 (59.0)
Nothing	64 (21.3)
Which of the following words will you use to describe coronavirus disease	
Pandemic	256 (85.3)
Epidemic	4 (1.3)
None of the above	20 (6.7)
All of the above	20 (6.7)
I do not want to go for clinical practice again because of coronavirus	
Yes	48 (16.0)
No	201 (67.0)
I do not know	51 (17.0)
Coronavirus disease would change the way the following nursing practice will be carried out	
Clinical practices	264 (88.0)
Clinical teaching	7 (2.3)
Clinical supervision	4 (1.3)
Clinical examination	16 (5.3)
Clinical communication	9 (3.0)
On a scale of 1-10, how would you grade the effect of coronavirus to clinical practice in nursing	
3	30 (10.0)
5	64 (21.3)
7	139 (46.3)
10	67 (22.3)
How satisfied are you with clinical practice with the present situation caused by coronavirus disease	
Satisfied	43 (14.3)
Very satisfied	11 (3.7)
Not satisfied	189 (63.0)
No idea	57 (19.0)
I do not feel like continuing with my clinical practice in nursing because of the coronavirus	
Yes	25 (8.3)
No	238 (79.3)
I do not know	37 (12.3)

Table 4: Relationship between perception and knowledge of coronavirus among the nursing students in southwest Nigeria

Level of perception	Level of knowledge		P
	Poor	Good	
Negative	43	84	0.088 ^a
Positive	43	130	

^aChi-square test

among nursing students [$P = 0.088$, Table 4]. There was also no significant relationship between nursing students' perception of clinical practice with coronavirus and age ($P = 0.49$), marital status ($P = 0.30$), years of exposure to clinical practice ($P = 0.63$), religion ($P = 0.75$), the one who training them ($P = 0.18$), and parent level of education ($P = 0.27$). However, significant relationships were found between nursing students' perception of clinical practice with coronavirus and the nursing institution of training ($P = 0.001$) and level of study ($P = 0.001$) [Table 5].

DISCUSSION

The study revealed that 71% of the student nurses

had good knowledge of COVID-19. This showed that nursing students are very knowledgeable about the infection. Majority of the nursing students indicated that coronavirus causes a respiratory disease and that isolation and treatment of people who are infected with coronavirus are effective ways to reduce the spread of the virus. However, despite the level of knowledge shown about COVID-19, only a little above the average of the population had a positive perception of returning to clinical practice with the COVID-19 pandemic. This shows that their knowledge of COVID-19 did not transmit to a positive perception of practicing and caring for COVID-19 patients as more than half of the population noted that they were not satisfied with

Table 5: Relationship between perception and sociodemographic variables of nursing students in southwest Nigeria

Sociodemographic variables	Perception of clinical practice with coronavirus		P
	Negative (n=127), n (%)	Positive (n=173), n (%)	
Age (years)			
15-19	24 (40.7)	35 (59.3)	0.496
20-24	94 (45.0)	115 (55.0)	
25-29	7 (28.0)	18 (72.0)	
>30	2 (28.6)	5 (71.4)	
Nursing institution			
UNILAG	30 (62.5)	18 (37.5)	<0.001
LASUCOM	27 (54.0)	23 (46.0)	
Babcock	44 (46.3)	51 (53.7)	
Son Luth	19 (31.1)	42 (68.9)	
Son Abeokuta	7 (15.2)	39 (84.8)	
Level			
2 nd	21 (28.4)	53 (71.6)	<0.001
3 rd	25 (34.7)	47 (65.3)	
4 th	46 (59.0)	32 (41.0)	
5 th	35 (47.3)	39 (52.7)	
Marital status			
Single	124 (42.9)	165 (57.1)	0.303
Married	3 (27.3)	8 (72.7)	
Years exposed to clinical practice			
1	12 (41.4)	17 (58.6)	0.630
2	34 (38.2)	55 (61.8)	
3	50 (42.6)	66 (57.4)	
4	31 (47.0)	35 (53.0)	
Religion			
Christianity	111 (42.7)	149 (57.3)	0.748
Islam	16 (40.0)	24 (60.0)	
You are being trained by			
Parents	112 (41.6)	157 (58.4)	0.176
Relations	8 (61.5)	5 (38.5)	
Social support	4 (66.7)	2 (33.3)	
Others	3 (25.0)	9 (75.0)	
Parents level of education			
Primary	4 (80.0)	1 (20.0)	0.268
Secondary	22 (47.8)	24 (52.2)	
Tertiary	99 (40.4)	146 (59.6)	
None	2 (50.0)	2 (50.0)	

clinical practice in the face of COVID-19. Despite the anxiety expressed, a greater number of nursing students were still willing to go for their clinical practice and complete their studies; this disposition was also noted among some nursing students who were interviewed from different universities abroad, although they all expressed some level of anxiety, they were also still willing to continue their clinical training and complete their nursing program.^[16]

The study showed that no significant relationship existed between the level of knowledge of COVID-19 and perception of clinical practice among nursing students in southwest Nigeria. The number of years spent in school and the institution of training of the students were found to be significantly associated with their perception of clinical practice.

Improvement in the provision of materials for nursing care, may increase nursing students' level of perception toward clinical practice with the current COVID 19 pandemic seeing that their knowledge of the infection did not significantly influence their perception. Given that COVID-19 is a newly identified disease and effective vaccines and treatments are still in development, nurses including nursing students face a potential risk of infection as well as potential work-related anxiety and mental health problems.^[17] Thus, in tackling this newly identified infectious disease, it is important to apply the latest knowledge to protect nurses and nursing students as they return to clinical learning where they may have to care for patients with COVID-19.^[18]

We recommend that similar studies should also be carried out in other regions of the country to gather results that will inform the decision-making of concern authorities in setting up modalities and policies that will ease the anxiety of nursing students as they prepare to resume clinical training with the current COVID-19 pandemic.

CONCLUSION

We identified that a majority of the participants' were willing to continue their clinical practice with COVID-19. As the threat of COVID-19 continues, efforts through educational campaigns that target nursing students and the wider population beyond borders are urgently needed.

Acknowledgment

We thank all study participants for their voluntary participation and for providing essential information.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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