Original Article

Nursing Students' Knowledge Of The Covid-19 Pandemic And Their Anxiety In Clinical Practice At The Medical Department: A Cross-Sectional Survey

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Abstract

When an infectious disease spreads, healthcare professionals debate the extent of awareness and concern. Nursing students experienced worry and stress due to clinical procedures throughout the outbreak. This study examines the knowledge of Saudi nursing students and anxiety levels undergoing clinical training at the medical departments during the COVID-19 pandemic.

Methods: One hundred eighty-five nursing students at the nursing college Qassim university. A cross-sectional correlational research design was carried out in February 2020. The Generalized Anxiety Disorder 7-Item Scale (GAD-7) was used to measure anxiety in the survey, and data on sociodemographic characteristics and knowledge of COVID-19 were also obtained.

Results: The results displayed that the majority of nursing students in the clinical practice (65.4%) were a high level of knowledge, 20 % did not report any anxiety at all, more than one-third experienced 39.5% moderate anxiety and less than a third experience 30. 3% have mild anxiety, and 10.3% experience severe anxiety towards the COVID-19 pandemic in clinical practice. There is a significant negative correlation between knowledge level and anxiety score **(r=-–0.189, p = 0.010)**.

Conclusions: The findings showed that most nursing students participating in clinical practice (65.4%) had a high degree of knowledge, 20% had no anxiety, more than one-third had mild anxiety, 39.5% had moderate anxiety, and fewer than one-third had severe anxiety. In the therapeutic setting, the COVID-19 pandemic causes mild anxiety in 30.3% of people and severe anxiety in 10.3%. Knowledge level and anxiety score have a substantial negative link (r=—0.189, p = 0.010).

Keywords: Nursing Students, Knowledge, COVID-19, Anxiety, Clinical Practice

Background

The World Health Organization (WHO) declared the coronavirus disease 2019 (COVID-19) a global pandemic and a public health emergency of concern. (Organization & others, 2020). The outbreak seriously affected the most important sectors in several nations worldwide, including the financial, healthcare, and educational sectors. (Gautam & Sharma, 2020). Nursing students, in particular, had to resume their studies in academic labs and clinical settings, which increased the danger of COVID-19 infection for them and their families.(IESALC, 2020). According to reports, nursing students experience greater anxiety than other healthcare students. (Savitsky et al., 2020). pressures added by the community's response to COVID-19 in terms of social and academic adjustments (Lewnard & Lo, 2020) and its effects on the provision of nursing education are likely to make this worse. (Hayter & Jackson, 2020).

Clinical practice is a critical element of nursing education because it assists students in developing their ability to think critically for problem-solving and prepares them to use what they learn from real-world theories in clinical practice. Nursing students acquire fundamental clinical expertise and nursing courses within the on-campus practice room through clinical practice education. They speak fluently with patient caregivers and other medical professionals while applying their communication skills

and basic nursing knowledge (Kwon & Kim, 2018). However, once they start their clinical practice, nursing students say they start to feel apprehensive (Han & Lee, 2012). A lack of clinical experience, unfamiliarity, difficult patients, practice anxiety, and faculty evaluation is why nursing students suffer anxiety in clinical practice. One's quality of life, academic performance, and clinical practice are all negatively impacted by anxiety(Sanad, 2019).

Ineffective infection control measures and a delay in diagnosis appear to contribute to the current widespread outbreak (Omrani & Shalhoub, 2015). Knowledge or having enough information regarding origins, clinical manifestations, transmission channels, and preventative techniques among healthcare professionals may play a role in evaluation in addition to hospitals and healthcare worker protection. Due to their frequent contact with sick people, student nurses are a critical link in the virus transmission chain. However, by using their knowledge of COVID-19 prevention and protection practices, student nurses may help break the chain and stop the spread of the virus.

Nursing students haven't had access to clinical experience since the Saudi Arabian university was shut down. Nursing students' perceptions of clinical practice may be impacted by their prior knowledge and experiences (Hamadi et al., 2021). It can result in nursing students being denied permission to resume clinical practice as long as COVID-19 patients are still being treated in the wards. Uncertainty exists regarding the knowledge and concerns nursing students may have regarding COVID-19.
Aim of the Study: Examine the knowledge of Saudi nursing students and anxiety levels undergoing clinical training at the medical departments during the COVID-19 pandemic.

Method

Design and Setting

To evaluate knowledge and anxiety in clinical practice at the medical department, a descriptive, web-based cross-sectional correlational research design survey was conducted in February 2020 among 185 nursing students at the nursing college of Qassim University. Participants were invited from all study years at Qassim University and were chosen using a convenience sampling technique. An online survey in Arabic was used to gather data. Through university e-mail accounts, phone numbers, and social networks, all of which are popular among nursing students nationwide, students were sent a link to an online survey. After clicking the link, participants were automatically notified about the study and asked to provide informed consent and complete the forms. I did not obtain any personal information from the students during the study to ensure confidentiality. A completed survey's outcomes were automatically posted online.

Study instrument

The following three sections were included in the questionnaire: The socio-demographic factor, such as age, education, and place of residence, makes up part one. Second part: The recommendations for clinical and community care for COVID-19 from the People's Republic of China's national health commission served as the basis for adapting a questionnaire (Zhong et al., 2020). The questionnaire includes four questions concerning clinical symptoms, three about transmission methods, and five about COVID-19 prevention and control. These questions have true or false options and the "I don't know" response. The total knowledge score was a number between 0 and 12. Scores 0 to 6 signify a lack of comprehension of the COVID-19 criteria, while 7 to 9 and 10 to 12 show a moderate or better level of understanding, respectively. The internal dependability of the item was evaluated using Cronbach's alpha. Internal consistency was indicated by Cronbach's alpha coefficient, which in this instance was 0.71 (Taber, 2018).

The generalized Anxiety Disorder 7 (GAD-7) scale, the third section (Spitzer et al., 2006), was employed to assess the students' anxiety levels two weeks before data collection (data were gathered two weeks after the students returned to clinical settings for training). A four-point Likert scale is used to grade the measure, which consists of seven items reflecting the fundamental symptoms of anxiety. A score of 0 indicates not at all, a score of 1 indicates a few days, a score of 2 indicates more than half of the days, and a score of 3 indicates almost every day (Garc\'\ia et al., 2018; Spitzer et al., 2006). The scale uses an interval level of measurement. The range of possible scores is 0 to 21, with 0 being no anxiety, 1 being mild anxiety, 2 being strong anxiety, and 3 being severe anxiety (Löwe et al., 2008). The scale had strong internal consistency (Cronbach's alpha =.92) and criteria, concept, factorial, and procedural validity (Spitzer et al., 2006).

Statistical analysis

Data were entered and analyzed using IBM SPSS software, version 20.0. To describe qualitative data, frequency and per cent were used (IBM Corporation, Armonk, NY). It was determined whether the distribution was normal by using the Kolmogorov-Smirnov test. A 5% level was used to determine the data's significance. Comparing groups was done using the chi-square test for categorical variables, and when more than 20% of the cells were expected to have a count of less than 5, the Monte Carlo correction for chi-square was applied.

Results

Table 1: Relationship between the total knowledge score and the fourth level of education to be a considerably higher degree of knowledge, have not yet experienced Corona, and have completed a COVID-19 course (41.3%, 99.2%, and 60.3%, respectively, with $p \leq 0.05$). While the correlation between anxiety in COVID-19 clinical practice was discovered to be significant in the age group of 21–26 years, having never had the coronavirus, having never been in contact with a COVID–19 suspect, having finished a COVID–19 course, and having no family members who have died from the coronavirus (64.4%, 86.3%, 86.3, 63.0, and 79.5% respectively).

Table (1): Relation between general knowledge, anxiety, and studied nursing students' clinical practice aspects (n = 185)

	Overall Knowledge			χ^2 **(p)**	**Anxiety**				χ^2 **(p)**
	Low (n = 12)	**Moderate (n = 52)**	**High (n = 121)**		**No anxiety (n = 37)**	**Mild anxiety (n = 56)**	**Moderate anxiety (n =73)**	**Severe anxiety (n = 19)**	
	n (%)	n (%)	n (%)		n (%)	n (%)	n (%)	n (%)	
Age (years)									
<21 years	7 (58.3)	18 (34.6)	42 (34.7)	2.718	22 (59.5)	19 (33.9)	26 (35.6)	0 (0)	19.580*
21–26 years.	5 (41.7)	34 (65.4)	79 (65.3)	(0.257)	15 (40.5)	37 (66.1)	47 (64.4)	19 (100)	(<0.001*)
Educational level									
Level 2	8 (66.7)	16 (30.8)	38 (31.4)	13.040*	16 (43.2)	18 (32.1)	23 (31.5)	5 (26.3)	7.456
Level 3	4 (33.3)	21 (40.4)	33 (27.3)	(MCP	8 (21.6)	17 (30.4)	29 (39.7)	4 (21.1)	(0.281)
Level 4	0 (0.0)	15 (28.8)	50 (41.3)	=0.009*)	13 (35.1)	21 (37.5)	21 (28.8)	10 (52.6)	
Residence area									
Rural	2 (16.7)	8 (15.4)	8 (6.6)	3.890	1 (2.7)	7 (12.5)	10 (13.7)	0 (0.0)	5.510
Urban	10 (83.3)	44 (84.6)	113 (93.4)	(0.143)	36 (97.3)	49 (87.5)	63 (86.3)	19(100)	MCp= (0.119)
Do you currently have Corona?									
No	12 (100.0)	40 (76.9)	99 (81.8)	3.470	32 (86.5)	45 (80.4)	63 (86.3)	11.0 (57.9)	8.840*
Yes	0 (0.0)	12 (23.1)	22 (18.2)	(0.176)	5 (13.5)	11 (19.6)	10 (13.7)	8.0 (42.1)	(0.031*)
presently experiencing Corona									
No	10 (83.3)	50 (96.2)	120 (99.2)	7.758*	37 (100)	56 (100)	68 (93.2)	19 (100)	5.220
Yes	2 (16.7)	2 (3.8)	1 (0.8)	(MCp= 0.012*)	0 (0.0)	0 (0.0)	5 (6.8)	0 (0.0)	MCp= (0.078)
Contact with a suspect in COVID-19									
No	12 (100.0)	42 (80.8)	106 (87.6)	3.458	34 (91.9)	51 (91.1)	63 (86.3)	12 (63.2)	10.782*
Yes	0 (0.0)	10 (19.2)	15 (12.4)	(0.for7)	3 (8.1)	5 (8.9)	10 (13.7)	7 (36.8)	(0.013*)
Training courses for COVID									

No				6.013*					10.017*
Yes	3 (25.0)	11 (21.2)	48 (39.7)	(0.049*)	17 (45.9)	17 (30.4)	27 (37.0)	1 (5.3)	(0.018*)
	9 (75.0)	41 (78.8)	73 (60.3)		20 (54.1)	39 (69.6)	46 (63.0)	18 (94.7)	
Has anyone in the family died?									
No	10 (83.3)	34 (65.4)	96 (79.3)	4.256	34 (91.9)	47 (83.9)	58 (79.5)	1 (5.3)	59.098*
Yes	2 (16.7)	18 (34.6)	25 (20.7)	(0.119)	3 (8.1)	9 (16.1)	15 (20.5)	18 (94.7)	(<0.001*)

χ^2: **Chi square test** MC: **Monte Carlo** *: Statistically significant at $p \leq 0.05$

According to (Fig. 1), 65.4 per cent of students were thought to have had a high level of knowledge on COVID-19, 28.1 per cent had a moderate level of knowledge, and just 6.5% had a low level of knowledge. The higher percentages were attributed to four items that discussed donning protective masks, avoiding crowded areas, and treating and isolating coronavirus-infected individuals. And those who come into touch with someone with the coronavirus should be quarantined for 14 days in a suitable location, scoring 92.4, 90.8, 96.8, and 97.3%) respectively.

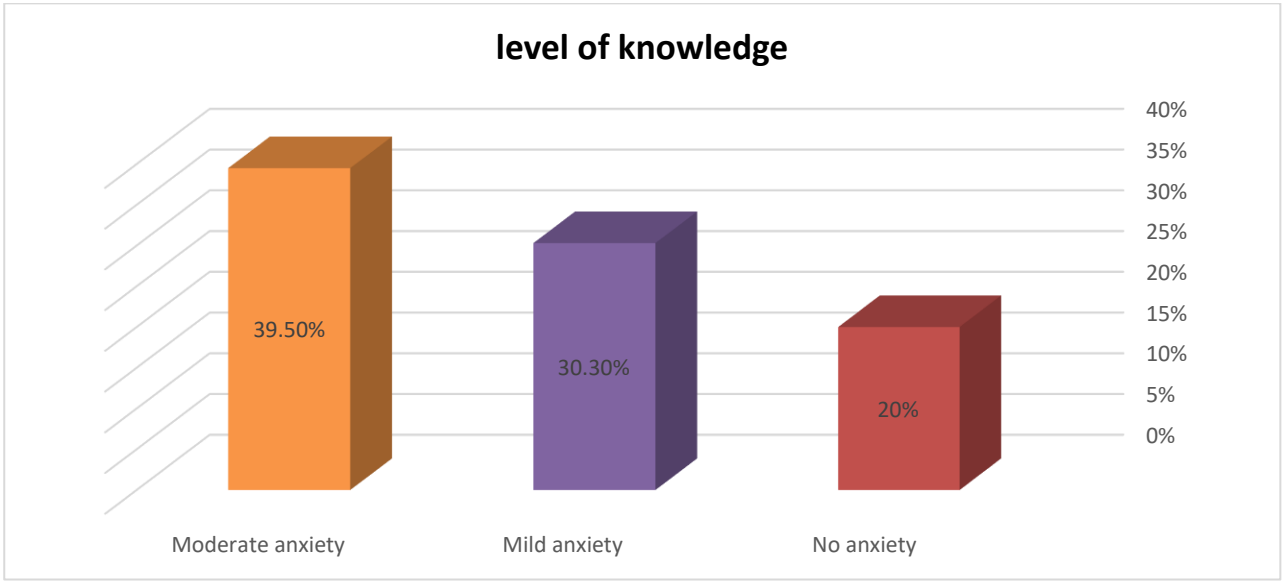

Figure (1): Distribution of nursing students studied based on overall knowledge (n = 185)

As shown in (Fig. 2), the results indicate that more than one-third of nursing students (N=73) experienced anxiety, compared to a fifth of students (N=37) who reported no worry at all. Among those who experienced it, 39.5% had moderate anxiety (N=56). The COVID-19 pandemic causes 30.3% mild anxiety and (N=19) 10.3% severe anxiety in clinical settings.

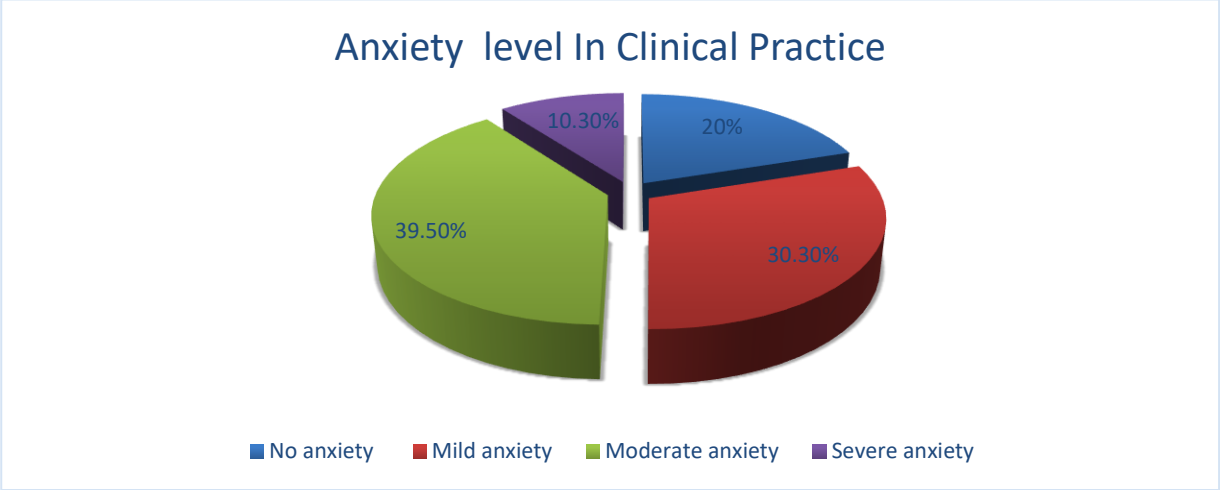

Figure (2): Distribution of the nursing students examined in terms of their level of anxiety during clinical practice (n = 185)

The knowledge score and anxiety score of the individuals had a negative association (r=—0.189, p = 0.010) (Table 2)

Table (2) Correlation between Nursing Students' Knowledge and Anxiety (n = 185).

	r	**p**
Knowledge vs. Anxiety	–0.189*	0.010*

r: Pearson coefficient *: Statistically significant at $p \leq 0.05$

Discussion

Recognizing their knowledge and anxieties about clinical procedures during the epidemic is crucial to address them since nursing students will eventually work as healthcare providers. This will help them deal with pandemic scenarios and deliver top-notch medical care. The results showed that during the Covid19 outbreak, most nursing students participating in clinical rotations have moderate anxiety, followed by those who experience severe anxiety. Age had an impact on anxiety levels, with students aged 21 to 27 having significantly greater anxiety scores than those under the age of 20

This result is consistent with (Asad et al., 2021) showing that most Saudi nursing students report moderate anxiety during the Covid19 outbreak, followed by students who experience severe anxiety. Demographics did not alter anxiety levels linked with students less than 20 years old, except age, which revealed a noticeably lower anxiety score among students aged 21–24. Anxiety is common among the general population, even in everyday situations (Singh et al., 2020), especially in schools and colleges. Before the pandemic, anxiety levels among university students in Hong Kong revealed that 12% experienced moderate concern and 6% had a severe worry.(Lun et al., 2018) In a 2016 study conducted in Portugal, approximately 16 per cent and 8% of students, respectively, suffered from moderate and severe anxiety. Suffering from a lot of anxiousness (Bártolo et al., 2017). According to research on student anxiety levels during COVID-19, the pandemic was bad for students' mental health. A Bangladeshi study found that 15% of students had fairly high anxiety, and 18% had severe anxiety. (Islam et al., 2020). Around 35% of pupils in a Saudi Arabian study on the effects of Covid19 on student mental health were found to have moderate to severe anxiety, and the presence of these conditions was strongly associated with age, sex, and educational attainment (Lai et al., 2020).

Worry and anxiety are inevitable for nurses and nursing students since they frequently come into contact with infectious patients, putting them in danger. Because they treated COVID-19-positive patients and were in close contact with them throughout the epidemic, nursing students were worried about both their professional futures and their health.(Abazie et al., 2021; Okuyan et al., 2020) The concern of spreading illness to family members and their uncertainty caused students to experience greater stress, dread, and anxiety. Relationship between general knowledge and the fourth level of education to be a considerably greater level of knowledge, not currently experiencing Corona, and having completed a COVID-19 course (41.3%, 99.2%, and 60.3%,

respectively, with (a p-value of 0.05). Though, additional researchers (Medina Fernández et al., 2021) discovered that course completion and having contact with someone who has COVID-19 predict knowledge of the illness. In the age group of 21–26 years, having never had coronavirus, having never had contact with a COVID–19 suspect, having finished a COVID–19 course, and having no family members who have died from the virus, the relationship between anxiety and COVID–19 clinical practice was found to be significantly moderate (64.4%, 86.3%, 86.3, 63.0, and 79.5%, respectively). Furthermore, these results agree with those of a previous study.(Rahman & Sathi, 2020), It discovered substantial differences in COVID-19 knowledge across age and educational groups. The results showed that the respondents' degrees of anxiety varied significantly according to their education level. These results by (Al-Hanawi et al., 2020), according to their education degree, respondents' levels of worry or concern about COVID-19 vary greatly.

Limitation

There was a very small sample size. More large-sample research from various Saudi Arabian regions is required to comprehend better nursing students' awareness and attitudes at the national level. Therefore, I urge academic organizations to strengthen COVID-19 nursing prevention guidelines in light of nursing students' knowledge gaps and anxiety deficits.

Conclusions

According to this study, most students had high knowledge of COVID-19, compared to just 6.5% who had poor levels of knowledge and 28.15 percent who had moderate levels. Regarding anxiety, a fifth of the nursing students reported no anxiety at all, a third or more reported moderate anxiety, a third or less indicated mild anxiety, and a third or less reported severe anxiety about the COVID-19 pandemic in clinical practice. There was a negative association between the respondents' knowledge and anxiety ratings. To address this, nursing students should receive more knowledge on COVID-19 and help manage their anxiety.

Availability of data and material

On reasonable request, the corresponding author will provide access to the data that underpin the study's findings.

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The study did not receive any financial support.

Ethics declarations

Ethics approval and consent to participate

The ethical approval for the research study's execution was gained in February 2020 after the nursing college's ethics committee approved it at Qassim University. The study adhered to the standards of the Helsinki Declaration. The participants obtained the inferred agreement when they were informed of the study's purpose because it was carried out online during the COVID-19 lockdown. Each participant's responses are also kept private and anonymous, and it is made clear that their participation is entirely elective.

Consent for publication

Not applicable.

CONFLICT OF INTEREST

Nil

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