ORIGINAL ARTICLE

Fear of COVID-19 and Associated Factors Among Nursing Students Back to Clinical Training: A Cross-sectional Study

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ABSTRACT

Introduction: COVID-19, a public health emergency, has affected the health system and many areas of life, including nursing students' psychological health. Our study aimed to determine the fear of COVID-19 and associated factors among undergraduate nursing students back to clinical training. **Methods:** An online survey using a cross-sectional study was conducted among 125 undergraduate nursing students randomly recruited from one Malaysian public university. Fear of the undergraduate nursing student returning to clinical training was assessed using the COVID-19 Scale (FCV-19S). Descriptive analysis was conducted to compute the sociodemographic data of the participants. Chi-square and Kruskal-Wallis tests were performed to determine a significant association between sociodemographic factors and fear scores. **Results:** Of 125 participants, it was found that 28.8% have a high fear, 66.4% have a moderate fear of COVID-19, and 4.8% have a low fear. Gender (p=0.008) was significantly associated with fear of COVID-19. **Conclusion:** Fear of COVID-19 is pronounced among nursing students and associated with gender. Findings from this study might be helpful for policymakers and nursing curriculum developers to incorporate the necessary mental health skills and resources to assist nursing students in curbing fear during a pandemic.

Keywords: COVID-19; Nursing students; Fear; Nursing education; Malaysia

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INTRODUCTION

The coronavirus illness (COVID-19) pandemic was identified by the World Health Organization (WHO) in 2020 as a global health threat that transcends international borders (1). The pandemic has affected many areas of the life of healthcare professionals, including nursing students with psychological fear and apprehension challenges in their academic education and clinical (2). Nursing students return to their nursing education and clinical training despite COVID-19's continued threat, facing fear and uncertainty as they attempt to manage their emotions during practice (3). When the COVID-19 threat continues and treatment is unclear, psychological fear and anxiety are noted (4). Clinical practice is an important yet complex and challenging part of nursing students' professional training to graduate (5). With the increase in COVID-19 infections, fear concerning a high risk of contracting and transmitting the virus and death was reported (6,7). There is evidence of nursing students' fear experience during the COVID-19 contagion while attending university courses (8) and clinical practices (9). Besides learning theoretical knowledge, Malaysian nursing students must complete 56 weeks (approximately 2000 hours) of clinical attachment in the hospital. The fear of COVID-19 and associated factors among Malaysian nursing students returning to the clinical environment following the first wave of the pandemic have not been studied in the shadow of COVID-19. As a result, the information from this study fills in gaps in the body of knowledge. Additionally, information from these findings may help government organisations, higher education policymakers, and universities to address the psychological health of future front-line healthcare professionals, the nursing students during a pandemic. This study aims to determine undergraduate nursing students' fear of COVID-19 and associated factors as they return to clinical training.

MATERIALS AND METHODS

Study design and setting

A cross-sectional study was conducted among nursing students studying a 4-year undergraduate nursing programme at one public university in Kelantan, Malaysia.

Study population and sample size

The study participants were first to fourth-year undergraduate nursing students, randomly selected based on a computer program-generated table of random numbers. Nursing students with an anxiety disorder or receiving treatment for a mental health issue were excluded from this study. The sample size was calculated using the precision-based approach single proportion formula, where p=0.08 (11), a 95% CI and 5% marginal error. The calculated sample size was 125 after accounting for the 10% non-response rate.

Study instruments

The survey instrument consists of two sections: 1) Socio-demographics and 2) Fear of COVID-19 Scale (FCV-19S). Age, gender, ethnicity, year of nursing education, types of family, number of COVID-19 tests, history of positive COVID-19 test, COVID-19 quarantine experience, and any family members who have contracted COVID-19 were among the sociodemographic information gathered in the first section. The second section consists of the FCV-19S developed by Ahorsu et al. (12), which is in the public domain. Therefore, no permission is needed. The FCV-19S is a self-administered questionnaire that requires participants to rate their agreement with seven statements from COVID-19 on a 5-point Likert-type scale, with 1 being the strongest disagreement and 5 being the strongest agreement. The possible values of fear ranged from 7 to 35. Higher scores indicate more severe fears of COVID-19 (12). In this study, the dependent variables were the fear of COVID-19. The reliability of the FCV-19S was good as Cronbach's alpha (α) value was 0.82 (12), indicating good and reliable (13).

Data collection

The study was carried out between January 1 to February 28, 2022. Online survey responses were requested from participants via WhatsApp. Two sections (sociodemographic and the FCV-19S) with links in English were created on a Google form. With approval from the institution's Dean, the names and email addresses of the chosen nursing students were obtained from the school's academic office before collecting data. The link was posted on students' online platforms accessible by first to fourth-year undergraduate nursing students. These platforms are channels of connection between school and nursing students. In addition, the information contained a brief introduction statement with a link for participants to post and repost the survey, including instructions to complete the questionnaire online by clicking the link and the 'Continue' button. Clicking the 'Continue' button indicates consenting to participate in the survey. Participants were limited to one response to prevent duplicated or exaggerated data. Each survey took 5 to 10 minutes on average to complete. All completed surveys were kept by the first author in a lockable room, with access restricted by a code only known to the author and will be destroyed two years after this study's publication.

Data Analysis

Descriptive analyses employed frequencies, percentages, and means with a 95% confidence interval (CI) as appropriate. The normality of the distributions was assessed with the Kolmogorov-Smirnov test. When data follow a normal distribution, parametric tests are used; otherwise, non-parametric methods are used to compare the groups (14). Variables were compared with Chi-square and Kruskal-Wallis tests. Analysis showed age and number of times tested for COVID-19 are not normally distributed, and fear levels contain more than three variables; hence, Kruskal-Wallis's test was employed to determine their association. Values of $P \leq$ of 0.05 indicates statistical significance. All analyses were performed with the Statistical Package for the Social Sciences software version 27.0 for Windows for analysis.

Ethical approval

Ethical approval was acquired from the Human Research Ethics Committee, Universiti Sains Malaysia (USM/JEPeM/21120814) and conducted based on the principles of the Helsinki Declaration and institutional standards.

RESULTS

Participants' sociodemographic characteristics

A total of 125 nursing students were recruited for the study. The median age of participants was 22.00 (IQR=2). The number of female nursing students (n=111; 88.8%) participating in the study was higher than that of male nursing students (n=14; 11.2%). In addition, more than three quarters (n=101; 80.8%) were of Malay ethnicity and lived in a nuclear family (n=104; 83.2%). The median number of times nursing students tested for COVID-19 was 2.00 (IQR=3). Results showed that 15.2% had a history of positive COVID-19 test, 60% had COVID-19 quarantine experience, and 51.2% reported that their family members had been infected with COVID-19. Table I presents the sociodemographic characteristics of the participants.

Fear of COVID-19 among participants

Of the 125 participants' fear of COVID-19 (FCV-19S) responses, the mean of the participants reported being most afraid of COVID-19, making me uncomfortable to think about COVID-19, hands become clammy when thinking about COVID-19, afraid of losing their life because of COVID-19, becoming nervous or anxious when watching news or posts about COVID-19 on social media, cannot sleep because worry about getting COVID-19, and heart races or palpitates when think about getting COVID-19 was

Table I : Participants' socio-demographic characteristics (n=125)

Variables	Median (IQR)	n	%
Age (Years)	22.00 (2)	125	49.0
Gender			
Female		111	88.8
Male		14	11.2
Ethnicity			
Malay		101	80.8
Non-Malay		24	19.2
Year of Nursing Education			
Year 1		34	27.2
Year 2		33	26.4
Year 3		31	24.8
Year 4		27	21.6
Type of Family			
Nuclear		104	83.2
Extended		21	16.8
Number of Times Tested for COVID-19	2.00 (3)	125	11.0
History of a Positive COVID-19 Test			
Yes		19	15.2
No		106	84.8
Quarantine Experience Related to COVID-19			
Yes		75	60.0
No		50	40.0
Any Family Members Infected With COVID-19			
Yes		64	51.2
No		61	48.8

IQR = Interquartile range

Table II. Descriptive statistics of fear of COVID-19 among participants (n=125)

Item	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
Item 1: I am most afraid of COVID-19	1	5	3.68	.97	-.494	.202
Item 2: It makes me uncomfortable to think about COVID-19	1	5	3.58	.96	-.552	.419
Item 3: When I think about COVID-19, my hands become clammy	1	5	2.42	.99	.186	-.361
Item 4: I am afraid of losing my life because of COVID-19	1	5	3.69	1.11	-.624	-.127
Item 5: I become nervous and anxious when watching news and stories about COVID-19	1	5	3.22	1.07	-.179	-.451
Item 6: I cannot sleep because I am worried about getting COVID-19	1	5	2.30	1.05	.301	-.613
Item 7: When I think about getting COVID-19, my heart races or palpitates	1	5	2.61	1.15	.233	-.626

Table II : Association between socio-demographic characteristics and fear level regarding COVID-19 (n=125)

Variables		Fear level, n (%)			*x* statistics (df)	*p*-value
		Low	Moderate	High		
Fear level		6 (4.8)	83 (66.4)	36 (28.8)		
Age (Years)	N (Mean Rank)	21.83 (1.72)	22.76 (3.95)	22.06 (1.72)	2	0.496[b]
Gender					9.583	0.008[a]
Female		3 (50.0)	75 (90.4)	33 (91.7)		
Male		3 (50.0)	8 (9.6)	3 (8.3)		
Ethnicity					5.275	0.072[a]
Malay		3 (50.0)	66 (79.5)	32 (88.9)		
Non-Malay		3 (50.0)	17 (20.5)	4 (11.1)		
Year of nursing education					3.076	0.799[a]
Year 1		2 (33.3)	20 (24.1)	12 (33.3)		
Year 2		1 (16.7)	21 (25.3)	11 (30.6)		
Year 3		1 (16.7)	23 (27.7)	7 (19.4)		
Year 4		2 (33.3)	19 (22.9)	6 (16.7)		
Type of Family					2.046	0.360[a]
Nuclear Family		6 (100)	70 (84.3)	28 (77.8)		
Extended Family		0 (0)	13 (15.7)	8 (22.2)		
Number of times tested for COVID-19	**N (Mean Rank)**	6 (84.42)	83 (63.35)	36 (58.63)	2	0.259[b]
History of a positive COVID-19 test					2.673	0.263[a]
Yes		2 (33.3)	10 (12.0)	7 (19.4)		
No		4 (66.7)	73 (88.0)	29 (80.6)		
Quarantine experience related to COVID-19					0.271	0.873[a]
Yes		3 (50.0)	50 (60.2)	22 (61.1)		
No		3 (50.0)	33 (39.8)	14 (38.9)		
Any family members infected with COVID-19					0.020	0.990[a]
Yes		3 (50.0)	43 (51.8)	19 (52.8)		
No		3 (50.0)	40 (48.2)	17 (47.2)		

[a] Chi-square test
[b] Kruskal-Wallis test
IQR = Interquartile range
p-values ≤0.05 are statistically significant

3.68 (SD=0.97), 3.58 (SD=0.96), 2.42 (SD=0.99), 3.69 (SD=1.11), 3.33(SD=1.07), 2.30 (SD=1.05), and 2.61 (SD=1.15), respectively. Table II presents the fear of COVID-19 among participants.

Participants' sociodemographic characteristics and factors associated with fear of COVID-19

Table III demonstrates the results from the participants' sociodemographic characteristics and factors associated with fear analysed by Chi-square and Kruskal-Wallis's test. Of 125 participants, gender (p = 0.08) was associated with fear of COVID-19. Fear was higher among female nursing students than males. Our study shows the odds of fear were higher among Malay nursing students. No significant association was found between age (p=0.496), ethnicity (p=0.072), year of education (p =0.799), type of family (p =0.360), number of times tested for COVID-19 (p=0.259),

history positive COVID-19 (p=0.263), quarantine experience related to COVID-19 (p =0.873) and any family members who have been infected with COVID-19 (p=0.990). Concerning COVID-19 fear, 28.8% of students expressed high fear, 66.4% reported moderate fear, and the remaining 4.8% reported low fear.

DISCUSSION

The severe worldwide health crisis brought on by the COVID-19 pandemic has affected healthcare professionals' psychological burdens like fear, including nursing students, because of the COVID-19 epidemic and its spread (2). Two million seven hundred eighty-six thousand two hundred nineteen confirmed COVID-19 cases and 31,678 deaths were recorded as of 9 January 2022, with Kelantan (8.3%) reporting the highest positivity rates among all states and territories (20). Despite the pandemic challenges, nursing students must return to complete their clinical attachment following the nursing board's mandate, notwith standing the problems posed by the epidemic. The present study reports the fear of COVID-19 and associated factors among undergraduate nursing students back to clinical training in one public university in Kelantan, Malaysia.

Based on our findings, 4.8%, 66.4% and 28.8% of the nursing students experienced low to moderate and high fears, respectively, during the challenging scenario of the COVID-19 pandemic were parallel to previous studies in Malawi, Mexico and Iran (7,18,19). Our findings were greater than those of Winter et al.'s study (21) and in line with earlier studies suggesting that nursing students' mental health may be severely impacted by fear of COVID-19 infection (22,23). The plausible explanation could be reasons for the COVID-19 infection linking morbidity and death may be the underlying cause of fear among nursing students. Besides, uncertainty could have generated fear for nursing students who fear contracting the disease (24), resulting from seeing reported positive COVID-19 cases and death on a large scale (24). In addition, these findings are consistent with existing literature because the fear of COVID-19 has been associated with the student's well-being and health (26,27). The study's findings served as a single point of fear prevalence among nursing students who would be front-line healthcare professionals. As in other countries affected by COVID-19, with the enforcement of the Restricted Movement Order (RMO), which began on March 18, 2020, in Malaysia, the Malaysian population's mental health, including the future front liners healthcare professionals, nursing students, was also adversely affected by COVID-19 fear (15). The impact of the COVID-19 crisis on nursing students' fears should be acknowledged and not be ignored, given the uncertainty of treatment and cure, including the number of deaths associated with COVID-19 clusters. Findings from our study may be useful for future research into COVID-19's psychological health effects on nursing students during educational training in the clinical setting.

According to our findings, gender was associated substantially with fear of COVID-19. The odds of fear were higher among female nursing students. Consistent with previous studies, females were more fearful during the COVID-19 epidemic (28,29,30). The plausible explanation was that COVID-19 is highly contagious, morbidly common, and possibly lethal, which may heighten the risk perception (22,23). Though COVID-19 prevalence is roughly equal between males and females (29), our study shows females have greater vulnerability to fear resulting from disease crises. Our results may contribute to the literature on gender differences in fear, which finds that females are typically more fearful. Hence, we cannot discard the mental health repercussions of the pandemic affecting genders, which deserve attention. Therefore, particular attention is warranted regarding the mental health and well-being of these nursing students caring for patients in the clinical setting. Female-dominated nursing is well-recognised globally, highlighting the vast gap ratio (31). Therefore, a future study on gender disparities during pandemics is needed to fill in the gaps in the literature.

Our results show that the Malays were the dominant ethnic group in nursing. According to national statistics, these demographics are typical of Malaysia's population. No association between fear of COVID-19 and ethnicity was found. This finding is inconsistent with Nino et al.'s two early waves of the American Trends Panel and Qualtrics national panel survey from the early stages' pandemic (32). A possible explanation for this difference might be cultural, geographical or confounded by small sample size. Another possible explanation might be that COVID-19 information is available in Malay, the national language of Malaysia's Muslim population (33). Our findings provide insights into the ethnic discrepancies and the overrepresentation of Malay nursing students. Therefore, future studies on fear during a pandemic crisis should involve more non-Malay nursing students from private health institutions in Malaysia.

This study's findings showed no association between fear and years of nursing education, types of family, number of COVID-19 tests, history of positive COVID-19 tests, quarantine status related to COVID-19 quarantine status and any family members who have contracted COVID-19. Therefore, a plausible explanation was that the survey was conducted in January 2022 when the number of cases declined as to previous data after the Malaysian government implemented the National COVID-19 Immunisation

Programme. As a result, the catastrophic nature of the COVID-19 pandemic was less noticeable. Hence, the undergraduate nursing students who stayed at home throughout the COVID-19 epidemic and travel restrictions may have become accustomed to the fear of the disease and the travel restrictions.

One of the study's merits was the non-biased random selection of participants, as all first to fourth-year undergraduate nursing students of the same semester were invited to participate. The FCV-19S Cronbach's alpha (α) measurement showed good reliability and validity (13) and could be applied to assess the intensity of COVID-19 fear. However, the current study included a few limitations that should be noted. First, all participants were from one public institution and over-represented in the Malay ethnic group, which may have limited the results' generalizability. Future research should aim at recruiting a larger sample of nursing students from private and public nursing institutions/universities with similar sociodemographic factors. Second, participants investigated who might have tested positive for COVID-19 or those whose family members tested positive for COVID-19 infection were likely to have reported more fear than those who had not. Third, due to the nature of the research design, a cross-sectional study, the results did not properly portray the voice of the nursing students' perceptions of COVID-19 fear. A qualitative study would be better equipped to provide information on fear for nursing students and how it has affected them.

CONCLUSION

Fear of COVID-19 is moderate to high among nursing students and is associated with gender. Therefore, tailored stratagems or interventions for nursing students in the face of future pandemic challenges are needed to address fear to improve their physical and mental health.

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