ORIGINAL ARTICLE

Factors Associated with Anxiety and its Self-Care Measures among Nursing Students During the Covid-19 Pandemic

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ABSTRACT

Introduction: One of the rising mental health issues among university students during the COVID-19 pandemic is anxiety. As future healthcare front-liners, nursing students are expected to perform good self-care to deliver quality care to patients. The purpose of the present study is to examine the factors associated with anxiety and its' self-care measures among nursing students. **Methods:** The study recruited over 200 students in the East Coast region of Malaysia and the online survey was conducted during the COVID-19 pandemic between December 2020 and January 2021. The questions were in 3 parts: Socio-demographic, Self-care assessment worksheet (SCAW), and Burns Anxiety Inventory. Descriptive statistics, correlational analysis, and multiple linear regression were used to answer the research aim. **Results:** The range of anxiety levels among the nursing students was from no anxiety (7.5%) to severe anxiety or panic (28.9%, 17.9%). Multiple linear regression analysis revealed two predictors associated with higher level of anxiety were the first-year nursing students (bb =10.90, CI=4.49, 17.30), and respondents who stated having fairly satisfied with the nursing program (bb =13.50, CI=5.10, 21.90). Among the self-care components, result revealed that higher levels of physical care throughout the semester predicted lower anxiety (bb =-0.85, CI=-1.328, -0.372, p<0.05). **Conclusion:** The study's overall finding is that nursing students' participation in self-care, particularly physical care, may help to lessen anxiety. Our findings are significant because self-care can complement psychiatric interventions for people with high levels of anxiety and is a significant contributor to mental well-being. *Malaysian Journal of Medicine and Health Sciences* (2023) 19(5):45-50. doi:10.47836/mjmhs19.5.8

Keywords: Anxiety, COVID-19, Nursing Students, Self-Care Measure

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INTRODUCTION

Mental health concerns can affect the lives of nursing students and their academic and clinical performance (1). In addition, COVID-19 has forced the change for nursing academics to use online platforms as the primary teaching method or hybrid learning that combines face-to-face and online teaching (2). During the COVID-19 movement restriction order (MCO) in Malaysia, schools of nursing have prioritised students in their third and final year for completing their program. Issues such as cancellation of current clinical placement and being at

risk to COVID-19 when they are training at the hospital could induce anxiety among the nursing students (3). In addition, nursing students raised their concerns on several issues in relation to online learning, such as decrease percentage of direct patient care and student contact hours, not to mention that these interruptions would affect their endeavour to be future Registered Nurses (2-3). Delivery of nursing care during training and academic stress are other factors that can lead to anxiety (4).

The perceived effect of the coronaviruses on the studies of university students is burdensome (5). MCO in Malaysia was applied by the government in March 2020 whereby the nursing students have either been detached from clinical training or been exposed to COVID-19 while in clinical attachment. Universities have been

closed for physical teaching to prevent the spread of COVID-19, and big changes have occurred for online assessment methods and undertaking the licensing exam from the Malaysia Nursing Board. Nursing students' growing concern during the COVID-19 epidemic could be reduced with self-care techniques they learned in the nursing curriculum, like maintaining a healthy body weight through exercise and food (6).

In a large survey of 2031 US college students by Wang et al., (2020), most participants (n=1443, 71.26%) reported an increase in their anxiety level during the COVID-19 pandemic, while a minority of study participants (5.48%) demonstrated it had decreased. About 23.26% of the study participants indicated it remained the same as before. The changes in academics, health and lifestyles could have contributed to the results, although anxiety is a common experience among university students during the COVID-19 pandemic (7). The academic demands such as having to take on multiple tests and assignments, fear of failure, as well as interpersonal issues with families or significant others could all contribute to anxiety and stress (4, 8).

A study on anxiety among 478 Sudanese university students by Abas et al., (2021) during the initial outbreak of COVID-19 reported 75.1% had low anxiety while the remaining figure had moderate to high levels of anxiety (9). In a qualitative study by Ulenaers et al., (2021), the COVID-19 pandemic had literally affected the experience of the nursing students, from fear of being exposed to COVID-19 while in practice to the feeling of being less competent because of less contact with patients (10). Similarly, a large survey among 1485 university students in UAE reported mild-to-moderate levels of anxiety because of the COVID-19 pandemic. Moreover, female students had a higher anxiety score during hospital visits (OR=2.02, 95% CI, 1.41 to 2.91) (5).

Recent evidence suggests that university students naturally practice self-care, given the course that they are undertaking at the university. Self-care can be classified into physical self-care, psychological and emotional self-care, and spiritual self-care (11), which is the approach to the management of one's own health. Self-care becomes important for mental health concerns for those suffering from anxiety and depression to avoid psychiatric treatment that is stigmatised (12). In a study conducted by Charissi et al., (2020) among 127 undergraduate students in Greece during the disruption on university due to the COVID-19 pandemic, 39.3% of the study participants chose self-care as their coping strategies (13). A study conducted by Suksatan et al., (2021) using Health Behaviours Scale (HBS) among 416 undergraduate students in Thailand reported good level of health behaviour which is significantly associated with reduced stress among the study sample (6). In this study, the finding from the nursing students concluded

that the taught curriculum contributed to higher knowledge of COVID-19 and undertaking the relevant self-care behaviour (6).

To sum up, as most people could naturally practise self-care for mental health and become resilient, big life changes due to COVID-19 can affect the mental health (14). On the good side, nursing students might be able to shed light on the function of health promoters for the mindset of good self-care that promotes mental health, particularly in the pandemic condition. Nevertheless, the availability of data on self-care and anxiety among nursing students especially in Malaysia are limited. Thus, the aim of the present study is to examine the anxiety levels among undergraduate nursing students and its associated factors, including self-care measures, to provide evidence that can support the importance of self-care management for mental health among the students.

MATERIALS AND METHODS

Design, population and study sample
This is a cross-sectional study using convenient sampling as study sample was conveniently recruited using the online survey which was easier to reach the study population during the COVID-19 pandemic which is the undergraduate nursing students. This study recruited 201 undergraduate nursing students in one of the public universities in the East Coast Region, Malaysia. The inclusion criteria were undergraduate nursing students enrolled for the semester during the data collection. The study did not include students who were on study breaks during the semester. The sample size calculated using Raosoft, a sample size calculator with margin of error 5% and 95% confidence level. With the total population size is 385 and the respond distribution was set at 50%, the calculated sample size was 193. Additional 10% of the total sample size was considered in the recruitment to meet good response rate in this study.

Data collection
There are three parts to the self-administered questionnaire used in this study. Part A comprised sociodemographic data of participants which included age, year of study, gender, academic standing, satisfactory level with nursing programme and economic status.

Part B was to assess the self-care among students using the Self-care Assessment Worksheet (SCAW) is an assessment sheet developed by Saakitve and Pearlman (1996) (15). This worksheet consists of 70 items divided into six subscales. However, only 4 subscales were utilised in this study (The subscale on Balance and workplace Behaviour were not applicable for students). The items are scored using a Likert scale with 1 being it never occurred and 5 being frequent. The SCAW is not intended to indicate well-being, but rather a summary of how the respondent participates in self-care practices.

The Cronbach's alpha for the SCAW was 0.94 indicating a high level of internal consistency. The internal consistency reliability was also examined for each of the subscales and it suggested high level of reliability; physical self-care (0.76), psychological self-care (0.76), emotional self-care (0.72) and spiritual self-care (0.86) (16).

Part C: The Burns Anxiety Inventory (Burns, 1999) is a self-report inventory on 33 symptoms of anxiety experienced by the participants. The items will be responded using a Likert scale from 0 (not at all) to 3 (a lot) (17). The established internal consistency for the Burns Anxiety Inventory was α=0.94 (17).

The data was collected from November to December 2020 through an online survey and only those who met the inclusion criteria and gave consent participated in this study. The study obtained ethical approval from IIUM Research Ethics Committee (IREC 2020-KON2/6) prior to the data collection. All the data was kept confidential.

Statistical analysis

The data collected was analysed using SPSS (ver.25.0). Descriptive analysis is presented in tables using frequency, percentage, mean, and standard deviation to evaluate the sociodemographic data, level of self-care, and anxiety. Spearman correlation coefficient was used to examine the relationship between self-care and level of anxiety. The relationship between variables was analysed and interpreted based on p-value with a level significant below than 0.05. Only the significant variables were entered into the stepwise Multiple Linear regression analysis.

RESULTS

A total of 201 participants had responded to the questionnaire (Table I), and the highest according to the categories: 174 (86.6%) female students, age ranged from less than 20 (n= 76, 37.8%), and they were in Year 4 (39.3%) for the year of study. For the academic standing, the majority of participants were in the category of cumulative grade point average (CGPA) between 3.00 to 3.49 (62.7%), and the majority of participants were from a middle-income family (89.6%). In this survey, 108 participants—or 53.7 percent—had completed clinical postings, and 89 participants—or 44.3 percent—selected that their academic programme had left them with a moderate amount of satisfaction. In this survey, 108 participants—or 53.7 percent—had completed clinical postings, and 89 participants—or 44.3 percent—selected that their academic programme had left them with a moderate amount of satisfaction. The mean score for the overall anxiety level among students is 31.28, with a minimum score of 0 and a maximum score of 96. (20.971). According to the research, a total of 15 students (7.5%) fall into the category of

Table I: Demographic data of respondents (N=201)

Variables	n	%
Age (in year)		
20	76	37.8
between 21 to 22	59	29.4
23 and above	66	32.8
Year of study		
1	46	22.9
2	33	16.4
3	43	21.4
4	79	39.3
Gender		
Male	27	13.4
Female	174	86.6
Academic standing (according to CGPA)		
>3.5	63	31.3
3.00-3.49	126	62.7
<2.99	12	6.0
Economic status		
Low	21	10.4
Moderate (+ 2 high)	180	89.6
State of being satisfied with academic program		
Fairly satisfied	24	11.9
Neutral	78	38.8
Moderately satisfied	89	44.3
Strongly satisfied	10	5.0
Had underwent for clinical attachment before COVID-19 period		
Yes	108	53.7
No	93	46.3

having little to no anxiety, 17 (8.5%) have borderline anxiety, 42 (20.9%) have mild anxiety, 33 (16.4%) have moderate anxiety, 58 (28.9%) have severe anxiety, and 36 (17.9%) have acute anxiety or panic.

Table II reported the significant weak and inverse correlation between anxiety and total level of self-care and its three sub-domains (p<0.05): physical, emotional, and spiritual. No significant correlation was found between anxiety and psychological care (p>0.05) (Table II).

Results from multiple linear regression (Table III) demonstrated that physical care, being the first-year students, and being fairly satisfied with the nursing program were the three significant predictors for the anxiety level (F (3, 197) = 12.857, p<0.05) among the study participants. In this study, those who had one score higher in the physical care had anxiety lower for -0.85 score (95% CI:-1.328, -0.372), while those in first-year of study (n=46) had a higher mean difference of anxiety for 10.90 score (95% CI:4.49, 17.30). For the

Table II: The level of self-care and anxiety among undergraduate nursing students (N=201)

Variables	Mean (SD)	Range	Anxiety (ρ)	p-value
Level of Self-care	145.77 (19.912)	58-195	-0.246*	<0.001*
Sub-domain:				
-physical	37.92 (5.708)	18-51	-0.265*	<0.001*
-psychological	41.97 (27.112)	14-141	-0.085	0.201
-emotional	38.82 (5.907)	12-50	-0.251*	<0.001*
-spiritual	37.11 (6.105)	12-50	-0.211*	0.003*

ρ = Spearman's rho correlation
* p < .05 indicates significant correlation

Table III: Factors associated with anxiety among study subjects (N=201)

Variables	SLR b^a (95% CI)	p value	MLR b^b (95% CI)	t	p value
Fairly satisfy	16.57 (7.86,25.29)	<0.001*	13.50 (5.10, 21.90)	3.16	0.002*
Year 1 nursing students	11.30(4.52,18.08)	0.001*	10.90 (4.49, 17.30)	3.35	0.001*
Level of physical care	-0.96 (-1.45,-0.461)	<0.001*	-0.85 (-1.328,-.372)	-3.51	0.001*
Age 20 or less	8.56(2.65,14.47)	0.005*			
Age 23 or more	-6.78 (-12.94,-0.63)	0.031*			
Year 4	-6.56 (-12.47,-0.640)	0.030*			
Moderately satisfy	-10.07(-15.78,-4.35)	0.001*			
Level of emotional care	-0.77(-1.25,-0.282)	0.002*			
Level of spiritual care	-0.59 (-1.07,-0.119)	0.014*			
Level of total self-care	-0.24(-0.38,-0.-96)	0.001*			

[a] crude regression coefficient
[b] adjusted regression coefficient
SLR simple linear regression
MLR multiple linear regression using stepwise method
Mean square error=373.39

satisfactory level in nursing programme, and those who fairly satisfied (n=24) had a higher mean difference of anxiety for 13.50 score (95% CI: 5.10, 21.90) (Table III).

DISCUSSION

We revealed factors predicting anxiety among the undergraduate nursing students during the COVID-19 pandemic in this study in which high physical care is associated with lower anxiety. The nursing students tend to focus on their daily needs for their overall health when they perform self-care, according to the finding by Nevins and Sherman (2015, 18). White et al., (2019) discovered that students who engaged in health-promoting behaviours throughout the semester contributed to lower levels of anxiety (19). The highlight of these repeated findings is that adequate physical care, as demonstrated by the nursing students in this study, is a key attribute to mental well-being. For this reason, the value of nursing students' physical self-care practises, which may have decreased their anxiety level during COVID-19, must be acknowledged. This is especially true during the COVID-19 pandemic, when the majority of students had lower levels of physical activity than those who are more physically active (20).

According to our findings, first-year undergraduate nursing students are more anxious than second, third, and fourth-year nursing students and become one of the predictors of higher anxiety. The result could be due to the unfamiliarity with the nursing program when they must adapt to the nursing subjects, while new norms of online teaching could also contributed to the anxiety. The finding on higher anxiety among the first-year nursing students could be explained by their emotional instability as reported by Hamzah et al., (2018) (21). In agreement with this finding, Cheung et al., (2016) reported the first-year nursing students in Hong Kong, China were more likely to experience anxiety than the seniors (22). Nonetheless, our study is distinct from the study by Hamzah et al., (2018) and Cheung et al., (2016)

in the event of COVID-19 pandemic and our finding extends the examination of anxiety to the factors of self-care components as possibly lower the anxiety levels and could be the guide for mental health awareness in the universities (21-22). Academic transitions from foundational courses to nursing programmes at the university level may have contributed to anxiety among the first-year students in this study.

Furthermore, our data revealed a second predictor of higher anxiety among individuals who were fairly satisfied with the nursing programme during the COVID-19 pandemic. According to Fitzgerald and Konrad (2021), the effect of COVID-19 concerning to the transitioning the academic programme with all online instruction to the nursing students made them more anxious (23). Moreover, anxiety level among nursing students as reported in the study by Garсна-Gonzále et al., (2021), could be induced by e-learning during COVID-19 pandemic especially when they are spending time in nursing education via remote learning (24).

Based on the findings from this study, there was no significant relationship between socio-demographic categories, i.e., the gender, age, academic standing, economic condition, and clinical work experience, with the level of self-care of the participants. Similarly, Ashcraft and Gatto (2015) reported that there was no relationship found between sociodemographic and level of self-care (25). Also, Brouwer et al., (2021) reported their study that there was no significant difference in the psychological distress based on school grade among the 285 nursing students during COVID-19 pandemic in the US (26).

CONCLUSION

Overall, this study suggests that students' anxiety levels can be reduced through self-care engagement. Our findings are significant because self-care is a key

aspect in mental well-being and can be used as a complimentary method in psychiatric interventions for patients suffering from high anxiety. This study suggests that junior students and those who reported fair happiness with school life but had greater levels of anxiety get health information on the value of self-care and that mental health programmes, including self-care exercises, be provided during COVID-19. As students progress through their nursing programme and eventually into their professional practise, routine self-care measurement could be utilised to track their mental health variations.

In seeking a way forward based on this empirical finding, it is also recommended to future studies extend this study to measure other factors associated with the self-care practices and its importance to mental health to their population of interest. Several limitations identified in this study are the small sample of male students and lack of diversity among the categories in sociodemographic data might limit the generalisability of the finding. This study was conducted during the quarantine of COVID-19, could lead to selection and recall bias as the data collected was through an online questionnaire, which limited the interaction between the researcher and participants.

ACKNOWLEDGEMENTS

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