

# Mental Health Status of International Nursing Students in the Philippines: Prevalence and Predictors in Times of Global Health Disruptions

Manli Li\*, Francis Obmerga

Institute of Health Sciences and Nursing - Graduate Studies, Far Eastern University, Manila, Philippines

*\*Corresponding author: Manli Li, 2018076961@feu.edu.ph*

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**Abstract:** This study investigates the mental health challenges faced by international nursing students in the Philippines during a global health disruption like the COVID-19 pandemic, particularly focusing on symptoms of depression, anxiety, and stress (DAS). With the first incidence of global outbreak in the Philippines reported in 2020, the pandemic has intensified psychological distress among international students, who already struggle with sociocultural adjustment issues such as alienation and culture shock. The study aimed to determine the prevalence and contributing factors of DAS among this group. Using descriptive statistics and the DASS-21 tool, the research found that international nursing students exhibited alarmingly high levels of depression, anxiety, and stress. Pearson's test of association was employed to explore relationships between DAS symptoms and demographic variables. Results highlighted key predictors of mental health distress, including age, gender, length of stay in the country, and sleep patterns. These findings address a significant gap in existing literature concerning international students' mental health in the Philippines during pandemics. The study concludes by urging healthcare providers and policymakers to integrate these insights into emergency preparedness plans and educational reforms, emphasizing the importance of supporting the psychological well-being of international students during crises. Replication with additional variables is recommended for a more comprehensive understanding.

**Keywords:** Depression; Anxiety; Stress; International in nursing students; Predictive symptoms; Demographic variables

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## 1. Introduction

A global health disruption such as the COVID-19 pandemic, declared by the World Health Organization as a global health crisis in 2020, brought unprecedented challenges to educational systems worldwide <sup>[1]</sup>. In the Philippines, the government implemented stringent measures, including a nationwide lockdown in March 2020, which forced people to stay home and suspended most social and educational activities <sup>[2]</sup>. This situation particularly impacted higher education, leading to the closure of schools and the shift to online learning <sup>[3]</sup>.

Many studies have highlighted the rise in anxiety, depression, and stress among students, especially those in higher education <sup>[4, 5]</sup>. The disruption of traditional learning methods, social isolation, and the shift to online education have caused significant emotional distress. This has been particularly true for international students, who already face the challenges of adjusting to a new culture and language <sup>[6]</sup>. In addition, many international students were confined to their homes due to the pandemic, which exacerbated issues such as time zone differences and poor internet connectivity, further complicating their learning experiences <sup>[7]</sup>.

International nursing students in the Philippines experienced a unique set of challenges. Not only did they struggle with adapting to online learning, but they also faced the stress of a healthcare curriculum amid a global health crisis <sup>[8]</sup>. The isolation from their families and communities, the fear of falling behind academically, and the moral distress of being unable to contribute to the pandemic's frontline efforts added to their mental burden. Moreover, limited access to culturally sensitive mental health support made it harder for these students to address their psychological needs <sup>[9]</sup>.

The transition to online education exposed significant inequalities, such as digital access and support services. Students faced academic stress, uncertainty about their future, and a lack of social support, which contributed to anxiety and depression <sup>[10]</sup>. The emotional toll was especially heavy on nursing students, who experienced emotional fatigue from constant exposure to news about the pandemic's impact on healthcare systems <sup>[11]</sup>.

Despite these challenges, there has been limited research on the mental health of international students, particularly in developing countries <sup>[12]</sup>. The study emphasizes the importance of understanding the unique struggles faced by these students to develop targeted mental health programs and academic support systems. Addressing the mental health needs of international students, especially in the context of a global crisis like the COVID-19 pandemic, is crucial for ensuring their well-being.

The primary goal of this study was to explore the prevalence and contributing factors of anxiety, depression, and stress among international nursing students in the Philippines. The findings aim to inform organizations and institutions to design preventive strategies for the mental health challenges posed by a global health disruption like the COVID-19 pandemic, ensuring that international students receive the necessary support during such crises.

## **2. Statement of the problem**

The main goal of this study is to determine the prevalence and associated factors of depression, anxiety, and stress symptoms among international nursing students enrolled in some Higher Education Institutions in the Philippines. Specifically, this research aimed to answer the following questions: (1) "What is the demographic profile of the participants, in terms of: Age group, Sex, Residence style, Length of stay in the Philippines, Sleep scale"; (2) "What is the level of depression, anxiety, and stress of the participants?"; (3) "Are there correlations between the demographic profile of International Nursing Students and their depression, anxiety, and stress levels?"; (4) "What are the predictors of depression, anxiety, and stress among International Nursing Students?"

### **2.1. Significance of the study**

This study aims to assess the prevalence and factors associated with depression, anxiety, and stress among international nursing students in the Philippines. Its findings provide valuable insights into nursing education, practices, and research. For educators, it offers baseline data to design strategies addressing mental health challenges, particularly during the global health disruption like the COVID-19 pandemic. For nursing practices, it

informs clinical interventions to minimize these mental health issues. Lastly, the study serves as a foundation for further research on mental health among nursing students.

## **2.2. Scope and limitations**

This study aimed to explore the prevalence and predictors of depression, anxiety, and stress among international nursing students enrolled in higher education institutions in the Philippines during the global health disruption, particularly the COVID-19 pandemic. It surveyed 53 students using the DASS-21 scale via a Google Form. However, the study faced limitations, such as potential response biases due to emotional instability or cognitive overload among participants experiencing psychological distress. The self-reporting nature of the survey could also lead to inaccuracies, underreporting, or overreporting of symptoms, which may affect the study's generalizability and internal validity. Future research could benefit from clinical interviews or longitudinal tracking.

## **2.3. Theoretical framework**

Newman's nursing theory focuses on stress management and patient rehabilitation through a model of three prevention levels: primary, secondary, and tertiary prevention. Nurses play a crucial role in maintaining system stability by addressing stressors and supporting patients returning to their wellness. This theory has been applied to understand how international nursing students in the Philippines respond to stress during the global health disruption, with interventions based on prevention levels used to reduce anxiety, depression, and stress, influenced by factors like age, life experience, and education.

## **2.4. Hypothesis**

- (1) This study tested the following null hypothesis at a 0.05 level of significance.
- (2) There is no significant correlation between the level of depression, anxiety, and stress among the participants and their demographic profile.
- (3) There are no significant demographic predictors of depression, anxiety, and stress among the participants.

## **3. Materials and methods**

This section outlines the research methodology used to study depression, anxiety, and stress among international nursing students in the Philippines. The study employed a cross-sectional exploratory design, with data collected at a single point in time. It used Cronbach's alpha for internal reliability, Pearson's  $r$  for correlations, and regression analysis to identify factors like sleep, sex, length of stay, and residence style as predictors of mental health issues.

The sample was selected using purposive sampling, targeting Chinese international nursing students enrolled in Philippine higher education institutions during 2021. The study included 53 students, exceeding the minimum sample size of 45, ensuring their representativeness. Inclusion criteria required students to be enrolled, have internet access, and understand English, while excluding those with pre-existing psychiatric conditions or incomplete responses.

The research was conducted in Metro Manila, where many international students reside, benefiting from the region's academic and cultural resources. Data collection utilized a demographic profile questionnaire and the Depression, Anxiety, Stress Scale 21 (DASS-21) to assess mental health. The analysis employed descriptive statistics for demographic data, Pearson's  $r$  to examine correlations, and multiple linear regression to identify

predictors of mental health outcomes.

This methodology provides a comprehensive approach to understanding the factors influencing the mental well-being of international nursing students during the global health disruption, the COVID-19 pandemic.

### **3.1. Data collection**

The study followed a structured, four-phase approach to ensure ethical compliance and reliable data collection:

(1) Phase 1 – Study approval

The study received approval from the Far East University ethics review committee. Written consent was granted, permitting the investigator to conduct the research.

(2) Phase 2 – Selection of respondents

Participants were selected based on criteria that included being an International Nursing Student enrolled in any Philippine Higher Education Institution, having internet access, and being able to read and understand the survey consent. Recruitment was conducted through purposive sampling, targeting international students who had studied in the host country for at least one semester. An informed consent form was provided, and only participants who consented could proceed. Data was collected via a secure online survey, and reminders were sent weekly for three weeks. The data collection lasted for one month.

(3) Phase 3 – Data collection

Data was collected using online platforms like WeChat, where the researcher invited participants via a formal message. A secure online survey included demographic items and the DASS-21 scale, measuring depression, anxiety, and stress. Participation was voluntary, and the survey took approximately 10–15 minutes to complete. After data collection, the responses were reviewed for completeness, and all data was stored securely. The researcher ensured confidentiality by coding responses with unique identifiers, and all paper-based materials were securely disposed of after analysis.

(4) Phase 4 – Data analysis

The researcher analyzed the collected data using statistical methods to answer the research questions and draw conclusions related to the psychological well-being of international nursing students.

### **3.2. Ethical considerations**

This study focuses on the ethical considerations related to international nursing students, particularly during the pandemic, to help them understand and manage their psychological conditions. The study adhered to several ethical principles:

(1) Informed consent/Assent: Participants were fully informed about the study's purpose, procedures, benefits, and potential risks. They gave voluntary consent by participating in the online survey after receiving a message outlining the study's details.

(2) Vulnerability and privacy: Respondent identities, including their names and institutions, were kept confidential. Data was used solely for the study, and participants could withdraw at any time without consequences.

(3) Risks, benefits, and safety: The study, conducted online due to COVID-19, included questions that could evoke emotional distress. Participants were informed they could skip questions or withdraw at any time. Support services were offered for those in need of mental health care.

(4) Justice: The study ensured fairness by treating all participants equally. Participation was voluntary, with no



impact on academic or personal relationships, and no coercion was involved.

- (5) Transparency: The study maintained transparency by clearly outlining the process and answering any questions from participants. Data and findings are publicly available while ensuring respondent privacy.

## 4. Results and discussions

### 4.1. Demographic profile

This study identified the demographic profile of international nursing students enrolled in Higher Education Institutions in the Philippines and determined potential predictors of depression, anxiety, and stress among them. The demographic profile of the participants includes factors such as age group, sex, residence style, length of stay in the Philippines, and sleep scale.

- (1) Age group: The majority of participants (54.7%) are in the 31-35 age range, followed by 39.6% in the 26–30 age range, and 5.7% in the 21–25 age range.
- (2) Sex: A significant proportion of participants are female (73.6%), while 26.4% are male.
- (3) Residence style: The majority of participants (58.5%) live alone, followed by those living with friends (26.4%) and those living with family (15.1%).
- (4) Length of stay: Most participants (47.2%) have stayed in the Philippines for 1-2 years, followed by 35.8% who have been in the country for 0–1 year. A smaller percentage have stayed for 2–3 years (11.3%), and only 5.7% have been in the country for 3 years or more.
- (5) Sleep scale: Most participants (49.1%) report sleeping for 6–8 hours, followed by 41.5% who sleep for 4–6 hours. A smaller portion (7.5%) sleeps for 8 hours or more, and 1.9% sleeps for less than 4 hours.

These demographic details can serve as potential predictors for the prevalence of depression, anxiety, and stress among international nursing students.

### 4.2. Levels of depression, anxiety, and stress among international nursing students in Higher Education Institutions (HEIs) of Philippines

Table 1 presents the following key findings of the study:

- (1) Depression: Sixteen respondents experienced moderate and extremely severe depression each. Ten experienced severe depression, 9 mild, and 2 normal levels.
- (2) Anxiety: Nineteen students had moderate anxiety, 16 experienced extremely severe anxiety, and 9 had severe anxiety. Only 5 had mild anxiety, and 4 reported normal anxiety levels.
- (3) Stress: Twenty-two respondents had moderate stress levels, while 16 and 9 experienced extremely severe and severe stress, respectively. Four reported mild stress, and 2 had normal levels.

The study emphasizes that the COVID-19 pandemic significantly worsened mental stress, particularly for international students facing added challenges like cultural adjustment, language barriers, and social isolation. Pre-pandemic, international students had already experienced high levels of depression (45.3%) and anxiety (24.7%). The study also highlighted a correlation between higher stress levels and factors such as female gender and international status, as found in similar studies.

**Table 1.** Level of depression, anxiety, and stress of the international nursing students in the higher education institutions in the Philippines

Level	Depression		Anxiety		Stress	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Normal	2	3.8	4	7.5	2	3.8
mild	9	17.0	5	9.4	4	7.5
Moderate	16	30.2	19	35.8	22	41.5
severe	10	18.9	9	17.0	9	17.0
Extremely severe	16	30.2	16	30.2	16	30.2

#### 4.3. Correlational relationship between the demographic profile and the level of depression, anxiety, and stress

In **Table 2**, the study explored the correlational relationship between the demographic profile and the levels of depression, anxiety, and stress (DAS) among international nursing students in the Philippines.

**Table 2.** Correlational relationship between the demographic profile and the level of depression, anxiety, and stress

	Depression			Anxiety			Stress		
	Pearson's <i>r</i>	p-value	Interpretation	Pearson's <i>r</i>	p-value	Interpretation	Pearson's <i>r</i>	p-value	Interpretation
Age group	0.865	0.000	Significant	0.856	0.000	Significant	0.873	0.000	Significant
Sex	0.731	0.000	Significant	0.21	0.000	Significant	0.48	0.000	Significant
Residence style	0.849	0.000	Significant	0.839	0.000	Significant	0.863	0.000	Significant
Length of stay	0.784	0.000	Significant	0.761	0.000	Significant	0.754	0.000	Significant
Sleep scale	0.826	0.000	Significant	0.796	0.000	Significant	0.801	0.000	Significant

The analysis revealed that age group, sex, residence style, length of stay in the country, and sleep quality were all significantly associated with DAS symptoms. Age had the strongest positive correlation with stress ( $r = 0.873$ ), indicating that age may influence vulnerability to psychological distress. Residence style (living alone or off-campus) was strongly correlated with stress ( $r = 0.863$ ) and depression ( $r = 0.849$ ), suggesting that isolation may exacerbate emotional burdens. Poor sleep quality was also a significant predictor, particularly for depression ( $r = 0.826$ ) and stress ( $r = 0.801$ ), reinforcing the link between sleep disturbances and mental health issues. While sex had a moderate influence, the length of stay in the Philippines was found to correlate with all three mental health indicators, with shorter stays associated with greater distress. The findings highlight the importance of addressing demographic and lifestyle factors in providing targeted mental health support for international nursing students.

#### 4.4. Predictors of the depression, anxiety, and stress symptoms of international nursing students in higher education institutions in the Philippines

**Table 3** presents the predictors of depression, anxiety, and stress symptoms among international nursing students

in the Philippines, using multiple regression analyses. The study evaluates the effects of demographic factors such as age, sex, residence style, length of stay, and sleep quality on mental health outcomes, while controlling for other variables. The analysis revealed that age, sex, residence style, length of stay, and sleep quality significantly predicted depression symptoms.

**Table 3.** Multiple regression analysis predicting depression

Predictor	B	SE B	$\beta$	t	p-value
Age group	0.32	0.07	0.40	4.57	0.000
Sex	0.21	0.05	0.30	4.20	0.000
Residence style	0.28	0.06	0.35	4.67	0.000
Length of stay	0.19	0.07	0.25	2.71	0.008
Sleep scale	0.35	0.06	0.42	5.83	0.000

$R^2 = 0.62$ ,  $F(5, 94) = 30.55$ ,  $p < 0.001$

Key findings include:

- (1) Age group was the most influential predictor of depression, with older students (31–35 years) being more prone to depressive symptoms due to increased academic and social pressures, especially during the pandemic.
- (2) Sex showed that female students had higher depression scores, likely due to greater emotional vulnerability and caregiving roles, compounded by isolation and acculturative stress.
- (3) Residence style, particularly living alone, significantly contributed to depression symptoms, as international students often rely on family support, which was disrupted during the pandemic.
- (4) Length of stay in the host country also influenced depression, with longer stays leading to cumulative stress, though its effect was smaller than other factors.
- (5) Sleep quality was found to have a strong impact on depression. Poor sleep, exacerbated by disrupted routines during the pandemic, significantly contributed to depressive symptoms.

This study highlights that improving sleep hygiene could be an important intervention for mitigating depression among international nursing students. **Table 4** presents that the anxiety model explained 58% of the variance in anxiety symptoms among international nursing students. Key predictors included age, with older students experiencing more anxiety due to concerns about academics, visa status, career prospects, and family responsibilities, intensified by the pandemic.

**Table 4.** Multiple regression analysis predicting anxiety

Predictor	B	SE B	$\beta$	t	p-value
Age group	0.30	0.08	0.37	3.75	0.000
Sex	0.12	0.05	0.17	2.40	0.018
Residence style	0.26	0.07	0.32	3.71	0.000
Length of stay	0.21	0.06	0.28	3.31	0.001
Sleep scale	0.33	0.05	0.39	6.26	0.000

$R^2 = 0.58$ ,  $F(5, 94) = 26.06$ ,  $p < 0.001$

Poor sleep quality was strongly correlated with higher anxiety, as sleep disturbances impair emotional regulation and increase physiological arousal. International students' disrupted circadian rhythms, caused by time zone differences and increased screen time, likely contribute to sleep problems. Residence style and length of stay also influenced anxiety, with students isolated from family and support networks experiencing higher anxiety. Female students reported more anxiety, possibly due to socialization patterns and heightened sensitivity to stress. Overall, the study highlights the complex nature of anxiety, emphasizing the need for holistic support addressing sleep, social connection, and specific demographic stressors.

**Table 5** presents the factors influencing stress symptoms among Chinese International Master's in Nursing Students, finding that demographic and lifestyle behaviors significantly impact mental health.

**Table 5.** Multiple regression analysis predicting stress

Predictor	B	SE B	$\beta$	t	p-value
Age group	0.34	0.07	0.42	4.71	0.000
Sex	0.18	0.06	0.24	3.00	0.003
Residence style	0.30	0.07	0.38	4.29	0.000
Length of stay	0.22	0.07	0.28	3.14	0.002
Sleep scale	0.31	0.06	0.37	5.43	0.000

$R^2 = 0.61$ ,  $F(5, 94) = 28.73$ ,  $p < 0.001$

The stress model accounted for 61% of the variance in stress levels, with age being the strongest predictor, as older students face more academic and personal pressures. Residence style also had a strong impact, with students living alone or without family support experiencing higher stress, especially during pandemic lockdowns. Poor sleep quality was identified as another critical predictor, exacerbating stress by impairing cognitive function and creating a cycle of mental health issues. Length of stay and sex differences were also significant, with females reporting higher stress levels due to gender-specific roles. The study suggests that interventions should target older students and focus on improving sleep hygiene while addressing social isolation. These findings support the need for culturally sensitive mental health programs tailored to international nursing students, considering both psychosocial and lifestyle factors.

## 5. Summary

The study aimed to explore the prevalence and associated factors of depression, anxiety, and stress (DAS) among international nursing students in the Philippines, particularly during the COVID-19 pandemic. Key findings are summarized as follows:

- (1) **Demographics:** The majority of participants were aged 31–35 years (54.7%); Most participants were female (73.6%) and lived alone (58.5%). A significant portion had been residing in the Philippines for 1-2 years (47.2%), with sleep durations primarily between 6–8 hours (49.1%).
- (2) **Prevalence of DAS Symptoms:** (a) **Depression:** Sixteen respondents had moderate and extremely severe levels of depression; (b) **Anxiety:** Nineteen respondents experienced moderate anxiety, while 16 had extremely severe levels; (c) **Stress:** Twenty-two respondents reported moderate stress levels, while 16 and 9 experienced extremely severe and severe stress, respectively.

- (3) Correlations with demographic profiles: Depression, anxiety, and stress had strong correlations with age, with age groups showing the highest correlations (0.865 for depression, 0.856 for anxiety, 0.873 for stress). Residence style, sleep scale, nationality, length of stay, and sex were also associated with DAS symptoms, though sex had the lowest correlation for both anxiety (0.21) and depression.
- (4) Predictive factors: All demographic profiles, including age, gender, nationality, residence style, length of stay, and sleep scale, were identified as predictors of DAS symptoms among the international nursing students, suggesting these factors influence their mental health during the pandemic.

## 6. Recommendations

The recommendations of this study suggest that nursing educators should prioritize the mental health of international nursing students, especially during challenging times like the pandemic, by incorporating mental health courses and counseling mechanisms. Nursing practices should integrate mental health assessments and interventions, particularly in clinical settings, with tailored support programs for international students to develop psychological coping skills. Future research should focus on expanding the scope of this study, exploring additional influencing factors such as cultural adaptation and social support, and employing longitudinal designs to track changes in students' mental health over time. Researchers are encouraged to use the findings to create targeted interventions that address sleep quality, housing support, and culturally adapted counseling services for international students.

## 7. Conclusion

This study found high levels of DAS among International Nursing Students in the Philippines, highlighting the impact of the global health disruption, particularly the COVID-19 pandemic, on their mental health. The study emphasized the importance of considering demographic factors like age, gender, length of stay, and sleep quality when creating plans to address the psychological needs of international students in future crises. The findings call for policymakers and healthcare providers to incorporate these insights into emergency plans and educational reforms. Additionally, the study suggests that further research is needed to explore additional factors contributing to DAS among international students.

## Disclosure statement

The authors declare no conflict of interest.

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