



Original Article

Perceived stress and coping strategies among undergraduate nursing students in the psychiatric practicum during the COVID-19 pandemic: A cross-sectional quantitative study

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ABSTRACT

Objectives: This study aimed to explore perceived stress and coping strategies among undergraduate nursing students in the psychiatric practicum during the pandemic. **Materials and Methods:** A cross-sectional quantitative design was employed in this study. Data were collected through self-administered questionnaires consisting of demographic variables, the Perceived Stress Scale (PSS), and the Coping Behavior Inventory (CBI). **Results:** Of the 73 participants, 82.2% were women. The mean age was 21.25 ± 0.69 years. The overall mean score of PSS was 1.45 ± 0.48 , and that of CBI was 1.93 ± 0.31 . The major sources of perceived stress were taking care of patients (1.72 ± 0.54) and assignments and workload (1.72 ± 0.75). The major coping strategies to deal with stress were problem-solving (2.66 ± 0.52) and staying optimistic (2.43 ± 0.73). Pearson's correlation analyses revealed that participants who utilized the avoidance strategy ($r = 0.416$) reported high-stress levels, whereas participants who utilized problem-solving ($r = -0.306$) and staying optimistic ($r = -0.527$) reported low-stress levels. **Conclusion:** The nursing students perceived moderate stress mainly from taking care of patients as well as assignments and workload. Problem-solving and staying optimistic were the most frequently used coping strategies. Compared with findings from other studies, our data suggested that the impact of the COVID-19 pandemic on perceived stress was not apparent possibly due to well-established approaches and education for infection prevention and control in our hospitals and schools. Our findings may provide valuable information to maximize students' learning opportunities.

KEYWORDS: *Coping, COVID-19, Nursing, Stress, Students*

Submission : 24-May-2024
Revision : 07-Jul-2024
Acceptance : 23-Aug-2024
Web Publication : 09-Oct-2024

INTRODUCTION

Nursing is a practice-based discipline. Clinical practicum education provides nursing students the environment to integrate theoretical knowledge and technology into clinical practice and to complete their transition into their nursing roles [1]. Clinical practicums have been recognized as a stressful experience for nursing students because they are exposed to several stressors [2]. Exploring stress in clinical practicums is an important issue because it compromises students' learning, performance, and mental health [2]. Meanwhile, investigating coping strategies is also crucial because effective approaches can help to relieve students' stress [2,3]. Findings derived from these studies may provide educators with valuable information to maximize students' learning opportunities [4]. As such, much interest has been paid to investigating the stress and coping strategies used by

nursing students during clinical practices [2,3,5-7]. Among various disciplines, psychiatric nursing is a specialized area that requires nursing and care for people with various mental illnesses or distress as opposed to physical health [8]. Nursing students are more stressed about their psychiatric practice than other practices [1,8,9]. Several qualitative studies [8-13] have reported the perception of stress in psychiatric nursing students. However, relatively few quantitative studies [14-17] have explored both the perceived stress and coping strategies utilized among nursing students during psychiatric practicums.

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How to cite this article: Lu SF, Chiang SW, Hsu YC. Perceived stress and coping strategies among undergraduate nursing students in the psychiatric practicum during the COVID-19 pandemic: A cross-sectional quantitative study. Tzu Chi Med J 2025;37(2):216-22.

Access this article online	
Quick Response Code: 	Website: www.tcmjmed.com
	DOI: 10.4103/tcmj.tcmj_132_24

The COVID-19 pandemic has persisted for more than 3 years since its outbreak [18]. The pandemic has caused many serious impacts on clinical practices, including nursing student practicums [19,20]. The effects of the highly contagious viral infection of COVID-19 on the lives and health of nursing students on the frontline inevitably lead to fears, stress, or mental problems [21-26]. However, studies have not definitively determined the impact of the COVID-19 pandemic on the stress and coping strategies of nursing students during their psychiatric practicum, a training program that is already known to be highly stressful.

The objectives of this study were firstly to explore perceived stress and coping strategies among undergraduate nursing students undergoing their psychiatric practicum during the COVID-19 pandemic and secondly to assess the associations between stress levels and coping strategies. We conducted a cross-sectional quantitative study using data collected from September 2021 to April 2022, a period when the clinical training of nursing students was resumed after its suspension due to the outbreak of COVID-19 in Taiwan [27,28].

MATERIALS AND METHODS

Study design

A cross-sectional quantitative study was conducted using the convenience sampling technique on 3rd-year nursing students from two universities in Taiwan at the end of their first psychiatric clinical practicum, which was conducted from September 2021 to April 2022.

Participants

This study was conducted at two universities situated in the West and East of Taiwan. The inclusion criteria were individuals (1) who were registered as full-time 3rd-year nursing students during the study period and (2) who had consented to participate in this study. Exclusion criteria were students who had previously taken a psychiatric/mental health clinical practicum.

Instruments

Data were collected using three measurement instruments: a sociodemographic questionnaire, the Perceived Stress Scale (PSS) [29], and the Coping Behavior Inventory (CBI) [7].

Sociodemographic questionnaire

The sociodemographic questionnaire surveyed individual data regarding age, gender, religion, and previous exposure to patients with mental illness.

Perceived Stress Scale

The PSS is a self-report instrument designed to measure the degrees of stressful events among nursing students in clinical practice [29]. The PSS consists of 29 items (stressful events) that can be allocated to six stress-provoking factors (stressor): (1) taking care of patients, (2) teachers and nursing staff, (3) assignments and workload, (4) peers and daily life, (5) lack of professional knowledge and skills, and (6) clinical environment. Each item has a five-point Likert-type scale with a range of 0–4. A score of 0 indicates

the absence of stress, while a score of 4 indicates the highest level of stress. Scores of 0–1.33, 1.34–2.66, and 2.67–4.00 are considered low stress, moderate stress, and high stress, respectively [29]. The PSS has been demonstrated to have good reliability [29]. In this study, the Cronbach's alpha for the PSS was estimated to be 0.91.

Coping Behavior Inventory

The CBI was developed to evaluate nursing students' coping strategies in dealing with stress during clinical practice [7]. The CBI consists of 19 items that are divided into four categories (strategies): (1) avoidance behaviors, (2) problem-solving behaviors, (3) optimistic coping behaviors, and (4) transference behaviors. Each item has a five-point Likert-type scale with a range of 0–4. A score of 0 indicates no coping behavior, while a score of 4 indicates the most used coping strategy. The CBI has been demonstrated to have good reliability [7]. In this study, the Cronbach's alpha for the CBI scale was estimated to be 0.84.

Data collection

Participants were invited to complete the survey questionnaires during the last 3 days of their psychiatric practicum through convenience sampling. The questionnaires in envelopes were directly distributed to the participants. Then, the teaching assistants who were blind to the objective of this study collected them 20 min after completion. No personal information was indicated on either the questionnaire or the envelopes. Of the 80 questionnaires that were distributed to the participants, 73 were completed and collected (91% response rate).

Statistical analysis

Descriptive statistics were used to calculate percentages and means with standard deviations. Pearson's correlation test was used to examine the association between the stress from each source and each coping strategy. $P < 0.05$ was considered statistically significant. All analyses were conducted using SPSS version 24 (SPSS Inc. Chicago, IL).

Ethical approval

This study was approved by the Research Ethics Committee, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation (approval number: IRB109-170-B). This study was conducted in accordance with the Declaration of Helsinki. Detailed information was provided to participants allowing them to decide to participate in the study. Informed consents were obtained from all participants. Confidentiality and anonymity principles were followed throughout the study process. The research data collection did not interfere with the clinical practicum of the participants.

RESULTS

Demographic characteristics

A total of 73 nursing students participated in this study. The participants had an average age of 21.25 ± 0.69 years. More than half of the participants were women ($n = 60$; 82.2%), had no previous exposure to patients with mental illness ($n = 46$; 63.0%), and had no religion ($n = 38$; 52.1%). The demographic data of the participants are summarized in Table 1.

Table 1: Demographics data of the participants (n=73)

Variables	Frequency (%)
Age (mean±SD)	21.25±0.69
Gender	
Women	60 (82.2)
Men	13 (17.8)
Religion	
Buddhism	13 (17.8)
Christianity	3 (4.1)
Taoism	19 (26.0)
None	38 (52.1)
Previous exposure to patients with mental illness	
Yes	27 (37.0)
No	46 (63.0)

SD: Standard deviation

Perceived stress among participants

The overall mean score of PSS was 1.45 ± 0.48 . Table 2 shows the perceived stress among participants. The perceived stress in order of mean PSS scores were from taking care of patients (1.72 ± 0.54), assignments and workload (1.72 ± 0.75), lack of professional knowledge and skills (1.61 ± 0.60), peers and daily life (1.17 ± 0.76), teachers and nursing staff (1.12 ± 0.57), and the environment (1.10 ± 0.64). The top three items of stressful events were related to lack of experience and ability in providing nursing care and in making judgments (2.33 ± 0.76), type and quantity of homework (2.33 ± 1.05), and not knowing how to help patients with psychosocial problems (2.03 ± 0.74).

Coping strategies utilized among participants

The overall mean score of CBI was 1.93 ± 0.31 . Table 3 shows various coping strategies utilized among participants. The coping strategies in order of mean CBI scores were problem-solving (2.66 ± 0.52), staying optimistic (2.43 ± 0.73), transference (2.22 ± 0.82), and avoidance (0.82 ± 0.56). The top three items of frequently utilized coping strategies were related to relaxing, namely, TV, movies, a shower, or physical exercise (3.07 ± 0.93), employing past experiences to solve problems (2.92 ± 0.64), and adopting different strategies to solve problems (2.68 ± 0.62).

The correlation between perceived stress and coping strategies

Table 4 shows the correlation between perceived stress and coping strategies. The overall mean PSS score was positively correlated with the mean subscale CBI score of avoidance strategy ($r = 0.416$) and was negatively correlated with the mean subscale CBI score of problem-solving ($r = -0.306$) or strategies for staying optimistic ($r = -0.527$). Further analyses revealed that the mean subscale CBI score of avoidance was positively correlated with the mean subscale PSS scores from five out of six provoking factors. Furthermore, the mean subscale CBI scores of staying optimistic, problem-solving, and transference were negatively correlated with the mean subscale PSS scores from six, two, and two provoking factors, respectively.

DISCUSSION

In this cross-sectional quantitative study, our results showed that nursing students perceived a moderate level of stress in their psychiatric practicum during the COVID-19 pandemic. The stress perceived by the students was mainly from taking care of patients and from assignments and workload [Table 2]. To deal with the stress, these students frequently utilized problem-solving and staying optimistic as their major coping strategies [Table 3]. Further correlation analyses revealed that participants who utilized the avoidance strategy reported relatively high-stress levels, whereas participants who utilized problem-solving and staying optimistic reported relatively low-stress levels [Table 4]. Indeed, the strategy for staying optimistic was negatively correlated with stress levels from all provoking factors, whereas the avoidance strategy was positively correlated with stress levels from five out of six provoking factors [Table 4]. Alternatively, another interpretation of our data was that the participants who experienced relatively high-stress levels simultaneously adopted the avoidance coping strategy, whereas participants who experienced relatively low-stress levels simultaneously applied the problem-solving and optimistic coping strategies. This interpretation aligns with the hypothesis proposed by previous investigators [30]. Collectively, these findings may provide important information to educators for recognizing better whether the students are equipped adequately with successful coping skills to manage their stress in the psychiatric setting during the COVID-19 pandemic.

Our finding regarding taking care of patients as well as assignments and workload as the major stressors is not surprising. Psychiatric nursing requires nursing and care for patients with various mental illnesses as opposed to physical health [8,31]. These patients are known to have psychiatric conditions with complex biopsychosocial problems and needs [14]. Indeed, we additionally found that lacking experience and ability in providing nursing care and in making judgments as well as not knowing how to help patients with psychosocial problems were two major stressful events reported by our students. The perceived stress from assignments and workload might originate from being concerned with their academic grades, meeting teachers' expectations, and enduring the heavy demands of clinical practices physically and emotionally [2,14,15]. Notably, these students were burdened by their busy clinical curriculum. We also found that the type and quantity of homework was a major stressful event reported by our students. Accordingly, students must be equipped with essential clinical knowledge and skills for the care of the psychiatric population and to refine the clinical curriculum requirements, both of which may help students effectively deal with these major stressors [9,14].

According to the stress and coping theory [30], stress occurs when the demands of an external situation of an individual are beyond his or her perceived ability to cope with them. Thus, an adequate coping strategy is important to the management of stress. Our students employed problem-solving and staying optimistic as two major strategies to deal with stress. Problem-solving is a behavior that makes effort to manage stress, whereas staying optimistic is a behavior

Table 2: Perceived stresses among participants (n=73)

Factor/item	Mean±SD	Item rank	Factor rank
1. Stress from taking care of patients	1.72±0.54		1
Lack of experience and ability in providing nursing care and in making judgments	2.33±0.76	1	
Do not know how to help patients with psychosocial problems	2.03±0.74	3	
Unable to attain one's expectations	1.88±0.85	6	
Unable to provide responses to doctor's, teacher's, and patient's questions	1.73±0.77	8	
Worry about not being trusted or accepted by patients or patient's family	1.70±0.88	10	
Unable to provide patients with good nursing care	1.55±0.71	11	
Do not know how to communicate with patients	1.64±0.79	13	
Experience difficulties in changing from the role of student to that of a nurse	0.93±0.77	25	
2. Stress from teachers and nursing staff	1.12±0.57		5
Experience discrepancy between theory and practice	1.99±0.89	4	
Do not know how to discuss patient's illness with teachers, and medical and nursing personnel	1.05±0.80	23	
Feel stressed that teacher's instruction is different from one's expectations	1.21±0.5	20	
Medical personnel lack empathy and are not willing to help	0.71±0.68	27	
Feel that teachers do not give fair evaluation on students	0.93±0.98	25	
Lack of care and guidance from teachers	0.71±0.68	28	
3. Stress from assignments and workload	1.72±0.75		1
Worry about bad grades	1.92±1.19	5	
Stress from type and quantity of homework	2.33±1.03	1	
Feel that one's performance does not meet teacher's expectations	1.22±0.79	19	
Feel that the requirements of clinical practice exceed one's physical and emotional endurance	1.42±0.93	16	
Feel that dull and inflexible clinical practice affects one's family and social life	1.73±1.11	8	
4. Stress from peers and daily life	1.17±0.76		4
Experience competition from peers in school and clinical practice	1.30±1.09	18	
Feel pressure from teachers who evaluate student's performance by comparison	1.47±1.24	15	
Feel that clinical practice affects one's involvement in extracurricular activities	1.34±1.26	17	
Cannot get along with peers	0.56±0.71	29	
5. Stress from lack of professional knowledge and skills	1.61±0.60		3
Unfamiliar with medical history and terms	1.77±0.66	7	
Unfamiliar with professional nursing skills	1.48±0.88	14	
Unfamiliar with patient's diagnoses and treatments	1.59±0.72	12	
6. Stress from the environment	1.10±0.64		6
Feel stressed in the hospital environment where clinical practice takes place	1.15±0.83	21	
Unfamiliar with the ward facilities	1.01±0.79	24	
Feel stressed from the rapid change in patient's condition	1.14±0.79	22	
Overall	1.45±0.48		

Results were obtained from the PSS consisting 29 items (stressful events) allocated to six stress-provoking factors. Higher scores indicate higher levels of stress. The order of ranks indicates stresses from the highest score to the lowest score. SD: Standard deviation, PSS: Perceived Stress Scale

that makes effort to maintain a positive attitude toward the stressful situation [2,16]. These two strategies are active and adequate behaviors and were mainly employed to deal with relatively low levels of stress, as evidenced by our correlation data. In the case of dealing with relatively high levels of stress, our students more frequently employed avoidance. Considering that coping is a major factor in the relationship between stressful events and adaptation outcomes such as depression and psychological symptoms [31], avoidance could still be considered a coping strategy. As such, in addition to the curriculum program, the faculty may provide a counseling program to help nursing students, particularly when encountering high levels of stress.

Scant studies have reported quantitative data on the perceived stress and coping strategies of nursing students during their psychiatric practicum [32]. Similar to our findings, Al-Zayyat and Al-Gamal [14] reported that taking care of patients as well as assignments and workloads were

the top two stressors while problem-solving and staying optimistic were the top two coping strategies. However, the levels of perceived stress from these two stressors in our study were slightly higher than those in their study. They also reported [15] that the students who utilized the transference coping strategy were more likely to perceive high levels of stress, a correlation that is quite different from our findings. A study [16] reported that assignments and workloads as well as the environment were the top two stressors and problem-solving and staying optimistic were the top two coping strategies. Unlike our findings, a significant portion of their students had high stress in these two major stressors. Their study did not analyze the correlation between perceived stress and coping strategies [16]. The discrepancy between these previous works [14,16,32] and our study may be at least in part due to the difference in clinical practice programs, populations, and cultures. Other studies in this area focusing on psychiatric nursing students were either qualitative

Table 3: Coping strategies utilized in dealing with stresses among participants (n=73)

Factor/item	Mean±SD	Item rank	Factor rank
1. Avoidance	0.82±0.56		4
To avoid difficulties during clinical practice	0.88±0.74	16	
To avoid teachers	0.88±0.80	16	
To quarrel with others and lose temper	0.63±0.70	18	
To expect miracles so one does not have to face difficulties	0.55±0.73	19	
To expect others to solve the problem	0.89±0.79	15	
To attribute to fate	1.10±1.03	14	
2. Problem-solving	2.66±0.52		1
To adopt different strategies to solve problems	2.68±0.62	3	
To set up objectives to solve problems	2.55±0.67	7	
To make plans, list priorities, and solve stressful events	2.60±0.85	5	
To find the meaning of stressful incidents	2.55±0.87	7	
To employ past experience to solve problems	2.92±0.64	2	
To have confidence in performing as well as senior schoolmates	2.66±1.00	4	
3. Stay optimistic	2.43±0.73		2
To keep an optimistic and positive attitude in dealing with everything in life	2.60±0.85	5	
To see things objectively	2.45±0.85	10	
To have confidence in overcoming difficulties	2.51±0.85	9	
To cry, to feel moody, sad, and helpless	2.15±0.92	11	
4. Transference	2.22±0.82		3
To feast and take a long sleep	1.73±1.04	13	
To save time for sleep and maintain good health to face stress	1.86±1.16	12	
To relax through TV, movies, a shower, or physical exercise (playing, jogging)	3.07±0.93	1	
Overall	1.96±0.31		

Results were obtained from the CBI consisting of 19 items allocated to four categories (strategies). Higher scores indicate strategies that are more frequently used. The order of ranks indicates strategies from the highest score to the lowest score. SD: Standard deviation, CBI: Coping Behavior Inventory

Table 4: The correlation between perceived stress and coping strategy (n=73)

Variables	Avoidance	Problem-solving	Stay optimistic	Transference
Overall perceived stress	0.416*	-0.306*	-0.527*	-0.198
Stress from taking care of patients	0.327*	-0.457*	-0.420*	-0.234*
Stress from teachers and nursing staff	0.400*	-0.187	-0.305*	-0.024
Stress from assignments and workload	0.281*	-0.165	-0.572*	-0.298*
Stress from peers and daily life	0.305*	-0.015	-0.306*	-0.148
Stress from lack of professional knowledge and skills	0.192	-0.212	-0.326*	-0.051
Stress from the environment	0.345*	-0.305*	-0.404*	0.002

* $P < 0.05$. Pearson's correlation test was used to examine the correlation between the overall and subtotal mean score of stress and the subtotal mean score of coping strategy

studies [8-13,30] or quantitative studies [32-34] reporting perceived stress only. Although one study [35] quantitatively investigated both perceived stress and coping strategies, the students were diplomate psychiatric nurses. These studies comprehensively described stress and its sources during clinical practice in this setting.

The COVID-19 pandemic has had many impacts on nursing students, including an increase in stress and mental health problems [21-26]. However, investigations regarding the impact of the pandemic on perceived stress and coping strategies among nursing students are scant and are limited to the nonspecialized area of clinical practice. Iyigun *et al.* [24] reported that the perceived stress of students in their clinical practice was at a moderate level (overall mean score of PSS = 2.45) compared with how it was before the pandemic. Hamadi *et al.* [22] reported that their students perceived mild stress levels (overall mean score of

PSS = 1.32) before the COVID-19 pandemic and moderate stress levels (overall mean score of PSS = 1.95) during the pandemic. Assignments and workloads taking care of patients were the top two stressors, and transference and problem-solving were the top two coping strategies. Ludin and Noor Azman [25] reported that their students perceived moderate stress levels (overall mean score of PSS = 2.06) during the COVID-19 pandemic. Assignments and workloads taking care of patients were the top two stressors, while transference and staying optimistic were the top two coping strategies. In addition, the overall mean PSS score was positively correlated with the mean subscale CBI scores of avoidance and transference. Compared with these previous studies [22,24,25], we found that students also perceived moderate stress levels with a reduced overall mean score of PSS (PSS = 1.45) during the COVID-19 pandemic. On the other hand, Al-Zayyat and Al-Gamal [14] reported that the nursing students during psychiatric/mental health nursing

clinical training perceived a medium stress level (overall mean score of PSS = 1.47). Ibrahim and Sayed [16] also reported that most of their nursing students during psychiatric practice experienced a medium stress level. Judging from the stress levels of these previous studies [14,16] and the current study, we observed that the fear of the COVID-19 pandemic did not affect the perceived stress of our students during the psychiatric practicum. Given that this study was conducted when the clinical training of nursing students was resumed after its suspension due to the outbreak of COVID-19 in Taiwan [27,28], the null effect of the COVID-19 pandemic on perceived stress may be due to well-established approaches and education for infection prevention and control in our hospitals and schools. Furthermore, during the COVID-19 pandemic, the mentally ill patients' behaviors complied well with preventive guidelines and strategies for infection control in our hospital. This may also contribute to the insignificant effect of the COVID-19 pandemic on perceived stress.

Several limitations need to be considered in this study. First, our data were collected from students from two universities in Taiwan. The generalization of our findings to other universities is not applicable. Second, this work is a cross-sectional study with a relatively small sample size of students. Future investigations with a larger sample size are warranted. Third, we only collected data at the end of the clinical practice and were unable to make pre-and postdata comparisons. This shortcoming has prevented us from exploring the effect of clinical training on perceived stress and coping strategies. Furthermore, measuring participants' perceptions at the beginning of the practicum could yield different results regarding levels of stress. Fourth, this study did not explore students' mental status (e.g., depression and anxiety) because this was not the scope of this study. Our focus was the perceived stress and coping strategies of nursing students during the COVID-19 pandemic and psychiatric practicum as two contextual factors.

CONCLUSIONS

The nursing students in our study cohort perceived moderate stress during the psychiatric practicum, mainly from taking care of patients as well as assignments and workload. In dealing with stress, the most frequently used coping strategies were problem-solving and staying optimistic. Compared with findings from other studies, our data suggested that the impact of the COVID-19 pandemic on perceived stress was not apparent possibly due to well-established approaches and education for infection prevention and control in hospitals and schools. Identifying the specific stressors and coping strategies is helpful to the design of educational and counseling programs. These approaches can help nursing students to manage these stressors and increase their resilience when working in stressful conditions. Our findings provide educators with valuable information to maximize students' learning opportunities. Future research can be directed to explore the effect of different types of clinical training on nursing students' perceived stress, mental status, and coping strategies, especially during the pandemic and psychiatric practicum.

Acknowledgments

The author appreciates all the nursing students who participated in this study. They are also grateful to Professor Yu Ru Kou for his valuable suggestions in preparing this manuscript.

Data availability statement

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Financial support and sponsorship

This study was supported by a grant from the Ministry of Education, Taiwan (No. PMN1090293).

Conflicts of interest

There are no conflicts of interest.

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