STRESS AND RELATED FACTORS AMONG NURSING STUDENTS AT DUY TAN UNIVERSITY

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ABSTRACT

Objectives: *This study aimed to describe levels of stress, physio-psycho-social status, coping behaviors of nursing students at Duy Tan University related factors on level of stress.* ***Method:*** *The cross-sectional study design was conducted among 200 nursing students at Duy Tan University in 2020. The data were collected by using three self-determination questionnaires: the Student Nurse Stress Index (SNSI), the Physio-Psycho-Social Response Scale (PPSRS), and the Coping Behavior Inventory (CBI).* ***Results:*** *The major finding were as follows: Stress of nursing students were at the moderate level (60.2 ± 13.5), and stress for these students came mainly from academic load (21.5 ± 4.6). Nursing students were in good physio-psycho-social health (1.41 ± 0.60), and emotional symptoms were the most common response to stress (1.85 ± 0.77). Students used more positive coping strategies than negative strategies, and the most frequently used coping mechanism was optimistic behavior (2.51 ± 0.72). There were statistically significant differences between academic year, living expenses, interest in Nursing, and level of stress (F=17.36, p<0.01; F= 2.84, p=0.04; F=6.69, p<0.01 respectively).* ***Conclusion:*** *Stress was a moderate level among nursing students. Effective intervention strategies are needed to reduce or prevent stress in nursing students. So that this study has important implications for nursing educators in helping their students to overcome stress during stydying.*

Keywords: *Nursing students, stress, coping behavior, physio-psycho-social status*

1. INTRODUCTION

Stress is a non-specific biological response of the body to stressful situations, stress can stimulate positivity, mobilize strength for people to overcome difficulties, but also has harmful effects. if it exceeds the body's ability to respond, causing illnesses, diseases... [1]. Stress is a complex phenomenon that affects a lot of students and can lead to other disorders besides low academic performance such as physical, psychological, and mental health [2].

Compared to students in other majors, students in Healthcare system have a higher risk of experiencing problems that lead to stress [3]. The healthcare industry is changing at a rapid rate, and people have greater expectations of providing high quality healthcare, which is also the cause of increased pressure. for medical staff as well as nursing students [4]. Nursing students have been identified as at high

risk of stress during studying [5]. Bista's research in Nepal 2017 showed that the stress among nursing students were 61.5% at moderate, 27.9% at high, and 10.6% at low level [6]. Vu Dung's study in 2015 at Thang Long University showed that 32% of nursing students were under high stress, 68% were at medium and low levels [3]. In addition, some studies have shown that nursing students have been facing wwith many different sources of pressure from learning environment, clinical environment or other personal factors [4,7].

The important point was nursing instructors can recognize the stress of nursing students and then instructing them how to coping appropriately wwith stress. If students are not instructed to manage stress appropriately, they can impair their ability to develop self-awareness as well as care, thus negatively affecting to patient care [4]. In order to analyze the current stress situation of nursing students to provide information as a basis for building measures to improve the health and learning outcomes of students, the study was conducted with the aim: To describe the level of stress, physio-psycho-social status, coping behaviors of nursing students at Duy Tan University and to examine relationships between related factors on level of stress.

2. RESEARCH METHOD

2.1. Setting and research period

- Setting: Duy Tan University.

- Research period: from December 2019 to June 2020.

2.2. Research subjects

- Inclusion criteria: Nursing students from first year to fouth year, Duy Tan University

- Exclusion criteria: Students do not agree to participate in the study.

2.3. Research design

Cross-sectional descriptive study

2.4. Sample size and sampling method

- Sample size: 200 nursing students by using a sample of quotas. Assigning all nursing students of Duy Tan University by academic year

- Sampling method: 200 nursing students were selected using the convenient sampling method to select 50 nursing students in each academic year (first year to fouth year) who met the sample selection criteria.

2.5. Data collection

All data were collected by using self-determination questionnaire.

Students who meet the criteria were selected and explained about the study, ethical issues, data collection procedures and invited them to participate in the research. After that, nursing students answered the questions in the questionnaire by themself. It took students about 15 minutes to finish.

After having all necessary information, data collecting forms were checked for completeness and prepared for analysis.

2.6. Research instruments

The research instruments were used in this study which consisted of 4 sections:

- The general personal factors.

- The Student Nurse Stress Index (SNSI) questionnaire of Jones & Johnston in 1999 has 22 items incuding 4 subscales: Academic load, clinical concerns, personal problems, interface worries. The answers were indicated by applying Likert's 5 point-rating sacle which are from 1 being stress free to 5 being extremely stressful. The mean score will be represented the level of stress: the higher score means the higher stress level.

- The Physio Psycho Social Response Scale (PPSRS) questionnaire of Sheu et al

in 2002 has 21 items including 3 subscaes: Physical symptoms, emotional symptoms, social behavior symptoms. The answers were indicated by applying Likert's 5 point-rating sacle which are: 0 = never; 1 = rarely; 2 = sometimes; 3 = quite often; 4 = very often. The mean score will be represented the level of Physio Psycho Social status. The higher the score means the more frequent and more severe symptoms are present, the worse the socio-physiological state of physical health.

- The Coping Behavior Inventory (CBI): Sheu et al's Coping Behavior Inventory (CBI) were modified by Devkota et al in 2018 has 20 items including 4 subscaes: Avoidance coping, problems-solving behavior, optimistic behavior and transference behavior. The answers were indicated by applying Likert's 5 point-rating sacle from 0 (never) to 4 (always). The higher score for any behavior indicates that the behavior is used more frequently and effectively among the behaviors dealing with stress.

2.7. Data analysis

The data were synthesized by using SPSS 20.0 software. Descriptive statistical including mean, percentage, standard deviation were used to describe the general personal factors, level of stress, physio-psycho-social status, coping behaviors. ANOVA statistical analysis was used to determine the relationships between some factors and the stress level of nursing students.

3. RESULTS

3.1. General personal factors of research subjects

The total number of nursing students participating in the research were 200. There are 50 nursing students in each academic year. The majority of the subjects were female (89%).

Table 1. Characteristics of research subjects (n=200)

Characteristics		Number	Percentage
Living	In dormitory	10	5.0
	Alone in the motel room	25	12.5
	Sharing room with friends	116	58.0
	Staying with parents/relatives	49	24.5
Living expenses	<2 millions/month	51	25.5
	2 – under 3 millions/month	90	45.0
	3 - 4 millions/month	44	22.0
	>4 millions/month	15	7.5
Interested in nursing	None	7	3.5
	Low	14	7.0
	Medium	113	56.5
	High	66	33.0

The majority of students shared room with friends (58%) and stayed with their parents/ relatives (24.5%). Most of students had living expenses <3 million / month. More than a half of the subjects had medium interested in nursing (56.5%).

3.2. Stress levels, physio -psycho - social response, and coping behaviors of nursing students.

Table 2. Stress levels of nursing students (n=200)

Contents	Rank	Score		$\overline{X}$	SD
		Reliaty	Standard		
General Stress (SNSI)		24-93	22-110	60.2	13.5
Stress because of academic load	**1**	8-33	7-35	21.5	4.6
Stress because of clinical concerns	**3**	7-33	7-35	17.2	5.7
Stress because of personal problems		4-19	4-20	9.7	3.4
Stress because of interface worries	**2**	8-30	7-35	19.6	4.6

The stress nursing students were at moderate level (60.2 ± 13.5). Stress for these students came mainly from academic load (21.5 ± 4.6), followed by interface worries (19.6 ± 4.6), stress due to clinical concerns (17.2 ± 5.7).

Table 3. Describes in detail the stress levels of nursing students (n=200)

Stress factors	Contents	$\overline{X}$	SD
Academic load	Examinations and/or scores	3.71	0.92
	The difficulty of the material/curriculum to be learned	3.32	0.76
Clinical concerns	Relationship with people in the healthcare system	2.48	1.05
	Too much responsibility	2.92	1.13
Personal problems	Health status of other family members	2.66	1.15
Interface worries	Other's attitudes / expectations for the nursing profession	3.28	1.09
	Little free time	3.22	1.05

The factors of academic load that most stress nursing students are examinations and/or scores (3.71 ± 0.92) and the difficulty of materials/curriculum to be learned (3.32 ± 0.76).), for clinical concerns are too much responsibility (2.92 ± 1.13) and relationships with people in the healthcare system (2.48 ± 1.05), for personal problms are the health status of other family members (2.66 ± 1.15), for interface worries are other's attitudes / expectations for the nursing profession (3.28 ± 1.09) and little free time (3.22 ± 1.05).

Table 4. Physio -psycho - social response of Nursing students (n=200)

Contents	Rank	$\overline{\text{X}}$	SD
Physio-psycho-social response scale (PPSRS)		**1.41**	**0.60**
1. Emotional symptoms	**1**	**1.85**	**0.77**
You tend to be anxious or stressed		2.33	0.91
Lately you have a tendency to be nervous or anxious		2.30	0.96
You often feel depressed		2.08	0.98
2. Social behavior symptoms	**2**	**1.39**	**0.76**
You are not optimistic about your future		1.77	1.08
3. Physical symptoms	**3**	**1.05**	**0.65**
You often experience dizziness or dizziness		1.39	1.00

The physio-psycho-social response of nursing students was at a good level (1.41 ± 0.60). Nursing students had the most emotional symptoms (1.85 ± 0.77), followed by social behavior symptoms (1.39 ± 0.76), physical symptoms (1, 05 ± 0.65).

The three most common symptoms in nursing students were emotional symptoms including tendency or stress to anxiety (2.33 ± 0.91), recent tendency to stress or anxiety. (2.30 ± 0.96), feeling depressed and depressed (2.08 ± 0.98). The most common symptom of social behavior among students was not being optimistic about the future (1.77 ± 1.08). The most frequent physical symptoms in students were dizziness and dizziness (1.39 ± 1.00).

Table 5. Nursing students' coping behaviors (n=200)

Contents	Rank	$\overline{\text{X}}$	SD
1. Avoidance coping	**4**	**0.78**	**0.57**
Avoiding hard work in the academic/clinical setting		1.01	0.77
2. Problems-solving behavior	**2**	**2.18**	**0.67**
Using a variety of ways to solve the problem		2.29	0.82
3. Optimistic behavior	**1**	**2.51**	**0.72**
Keep a optimistic and positive attitude when dealing with things in life		2.65	0.86
4. Transference behavior	**3**	**1.98**	**0.61**
Relax by watching TV, movies, bathing, exercising, meditating, visiting relatives, talking to friends and relatives.		2.66	0.81

Most nursing students have positive coping behaviors with stress. The most used stress-coping behaviors group was optimistic (2.51 ± 0.72) and the least used behavior group was avoidance (0.78 ± 0.57).

The most commonly used behavior by nursing students to cope with stress is transference by relaxing by watching TV, movies, bathing, exercising, meditating, visiting relatives, talking to friends and relatives. (2.66 ± 0.81). Following is to keep a a optimistic and positive attitude when dealing with things in life (2.65 ± 0.86). For problem-solving behaviors, using a variety of ways to solve the problem was most chosen (2.29 ± 0.82). For avoidance coping, avoiding hard work in the academic/clinical setting was the most chosen (1.01 0.77).

3.3. Factors related to stress level of nursing students

Table 6. Reationship between personal factors and stress level of nursing students (n=200)

Contents	$\overline{X}$	SD	F	P
Academic year				
First year	50.94	11.90	17.36	p<0.01
Second year	58.34	14.56		
Third year	64.88	11.22		
Fouth year	66.68	10.40		
Living				
In dormitory	59.60	18.58	2.66	0.05
Alone in the motel room	65.88	12.21		
Sharing room with friends	60.53	13.06		
Staying with parents/ relatives	56.69	13.48		
Living expenses				
<2 millions/month	55.68	13.02	2.84	0.04
2 - under 3 millions/month	62.37	14.13		
3 - 4 millions/month	60.39	13.29		
> 4 millions/month	62.13	8.86		
Interested in nursing				
None	74.00	7.00	6.69	p<0.01
Low	63.21	14.59		
medium	61.88	12.25		
High	55.26	14.26		

There was a relationship between the academic year and stress level (F = 17.36, p <0.01). Closer to the final years of study, the stress level of nursing students increases. Living factor was not associated with stress levels, however there was an association that students living alone had higher stress levels than students living with a parent/relative (p = 0.006). Living expenses was associated with stress levels (F = 2.84, p = 0.04), students had living expenses 2 - under 3 million/month had higher stress levels than students.

have living expenses <2 million/month. Interested in nursing was associated with stress levels (F = 6.69, p <0.01), the more students interested in nursing, the lower the stress level.

4. DISCUSSION

4.1. Stress levels, physio-psycho-social response, coping behavior of nursing students

Resuts showed that nursing student is under moderate stress level, this finding was similar to the results of some studies in other countries including the study of Vu Dung (2015) at Thang Long University and the study of Devkot Shrestha (2018) in Nepal [1,3]. Kucukakca's study in 2019 in Turkey on 315 nursing students found that students had high stress levels [8]. This difference may be due to the fact that the nursing training programs are not the same between the two countries. In addition, nursing students dealt with academic stress more than clinical stress, this result is similar to Nuriye Yildirim's stydy (2016) on 821 nursing students at 4 Universities in Turkey and Jones's study (2018) on 1707 nursing students found that Brunei and Malta students felt more academic stress [9,10].

The further analysis found the factors that most stress nursing students are examination and/or scores, this result is also found by Shdaifat (2018) from 184 nursing students in Saudi Arabia. The students feel stressed because of anxiety low scores; Bista's 2017 study in Nepal on 283 nursing students found that tests, exams, and assessments were factors that lead to stress [6, 11]. In addition, the factor of difficulty of materials / curriculum is also one of the issues that most stresses nursing students. Ly Van Xuan's study in 2013 on 441 nursing students of Military Medical College 2 also showed stress

factors such as too much lecture sessions [12]. Less free time is also one of the factors that make students most anxious. Hirsch's research (2014) on 146 nursing students in Brazil showed that students stress due to lack of free time or rest [13]. This result is similar to the study of Sharma (2011) in India [14]. The results also showed that one of the clinical factors that most stresses students the most is the relationship with those in the healthcare system. The meta-analysis study of 13 articles by Alzayyat (2014) also showed that most stressful for nursing students is the relationship with medical staff and instructors [15].

Overall, the physio-psycho-social response of the Nursing students was at a good level. In particular, nursing students had more emotional symptoms than physical symptoms. These results are similar to the study of Jimenez (2009) on 357 Nursing students from School of Nursing in Spain [16]. Jimenez (2009) also showed similar results that the three most common symptoms among nursing students in clinical practice are anxiety, stress, and lack of optimism about the future [16].

Most nursing students have positive coping behaviors and the most commonly used stress-coping behavior is to optimistic behavior. This result is similar to research by Ahtisham Younas (2016) on stress of nursing students in Asian countries including India, Pakistan, Iran, Philippines, Hong Kong and Jordan [17]. Avoidance behavior with stress was the least chosen by nursing students is also the result found in studies by Devkot Shrestha (2018) at 3 Universities in Nepal and Shdaifat's 2018 study at Saudi Arabia [1,11]. Further analysis shows that the behaviors most used by nursing students to cope with stress are transference behavior by relaxing by watching TV, movies, bathing, exercising, meditating, visiting relatives, talking to friends, family members or close

ones. This result is similar to a study by Vu Dung (2015) at Thang Long University on 153 regular nursing students in the 2nd and 3rd years in the 2014 - 2015 school year shows that having close friends, there is a division According to friends, exercise habits are factors that protect students from high stress [3]. Jones (2018) also shows that participating in recreational activities or reducing stress can help nursing students manage their own stress [10].

4.2. Several factors related to stress level of nursing students

There is a relationship between the academic year and stress level. Closer to the final years of study, the stress level of nursing students increases. This result is similar to the study of Phung Nhu Hanh (2018) in Tien Giang, third year students have higher levels of academic stress, clinical stress than first year and second year students [18]. Research by Kucukakca (2019) at Haci Bektas Veli University, Turkey on 315 nursing students also showed that the more students studying in the final year, the higher the stress level [8]. In contrast, research by Ahtisham Younas (2016) found that first year students had higher stress levels than those in the above course due to feeling new and unfamiliar with the new learning environment [17]. This difference may be due to the different approaches to first year Nursing students, students at Duy Tan University are introduced to the university study method and career guidance from the beginning. So that to deal with the new environment will be easier.

The living expenses was associated with the stress level, in which students with living expenses 2 - under 3 million/month had higher stress levels than students with living expenses < 2 million/month. This finding is similar to research by Hakime Aslan (2018) at Inonu University, Turkey on 479 nursing

students showed that students with higher living expenses have higher stress levels [6]. In contrast, Shdaifat's 2018 study found a negative correlation between income and stress levels in nursing students [11]. This difference may be due to the income from the two research subjects originating from different sources, Duy Tan University students have to work part-time or do many other jobs to increase their income.

Interested in nursing was associated with stress levels. The more interested in nursing, the lower the stress level. In Hakime Aslan's (2018) study also found similar results that students who are interested and determined to pursue a career in nursing have lower stress levels [5]. In contrast, the study of Kucukakca (2019) found that there was no difference in the stress level between students who were reluctant to choose nursing or did not enjoy nursing care compared to the rest of the students [8]. This difference may be due to different career orientations or training programs, students in Turkey in Kucukakca's study have high stress levels while students at Duy Tan University are only average. .

5. CONCLUSION

The findings of this study showed nursing students had moderate stress level (60.2 ± 13.5). The physio-psycho-social response of nursing students was at a good level (1.41 ± 0.60). Most nursing students had positive coping behaviors with stress. There was a relationship between the academic year, living expenses/month, interested in nursing and stress levels of nursing students (F = 17.36, p <0.01; F = 2.84, p = 0.04; F = 6.69, p <0.01). Monitoring stress status, physio-psycho-social responses, and orienting positive coping behaviors for students are essential to help prevent and reduce stress levels in nursing students.

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