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## Stress, stress responses and coping strategies among bachelor nursing students

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### Abstract

**Introductions:** Inability to use effective coping strategies to minimize stress due to high academic and clinical expectations may affect nursing students' health, academic and clinical performance. The aim of this study was to assess the level of stress, stress responses and use of coping strategies among bachelor nursing students.

**Methods:** This-cross-sectional study included bachelor nursing program students selected by stratified random sampling technique from four nursing colleges affiliated to Tribhuvan University in Kathmandu Valley, Nepal, during August 18<sup>th</sup> to September 15<sup>th</sup> 2017. Data were collected using structured self-administered questionnaire. Perceived stress scale, physio-psycho-social responses scale and coping check lists were used to assess stress, stress responses and coping strategies of bachelor nursing students.

**Results:** There were total 284 participating nursing students, 240 (84.5%) had moderate level of stress and 20 (7%) high level of stress. The common source of stress were assignments and workload (2.37±0.63), and clinical environment (2.16±0.74). Students' physio-psycho-social responses during stress, 109 (38.4%) reported best emotional health, 125 (44%) best social behavioral and 189 (66.7%) best physical health. Coping strategies were, problem focused 175 (61.6%), social support coping 173 (60.9%), and avoidance coping 165 (58.1%). There was a positive correlation between stress and coping (r=0.138).

**Conclusions:** More than 3/4<sup>th</sup> of bachelor nursing students reported moderate level of stress, problem focused coping strategies was commonly used and half of the students maintained good level of physio-psychosocial health during stress.

**Keywords:** coping strategies, nursing students, stress, stress responses.

**Introductions**

Stress refers to dynamic interaction between the individual and the environment.<sup>1</sup> In this interaction, the demands, limitations and opportunities related to work may be perceived as threatening and go beyond the individual’s resources and skills to cope.<sup>2</sup> The common sources of stress are assignments and workload, teachers and hospital staffs, peers and daily life, and taking care of patients.<sup>3-5</sup>

Many studies have found that nursing students have high level of stress compared with other students.<sup>6</sup> The stress can be altered and influenced by the coping strategies they choose to employ. However, in Nepal, few publications are available on studies done to assess the stress and coping among nursing students. In a study among proficiency certificate level (PCL) and bachelor nursing (BN) students, 61.5% students had moderate, 27.9% severe and 10.6% mild level of stress.<sup>7</sup> Effective coping strategies aid in relieving level of stress.<sup>8,9</sup>

The evaluation of coping strategies during stressful events may help in devising the strategies to minimize stress and effective to coping methods . This study assess the level of stress, responses to stress, and coping strategies of bachelor nursing students.

**Methods**

This cross-sectional study was conducted on bachelor nursing students during August 18<sup>th</sup> to September 15<sup>th</sup> 2017 in four nursing colleges affiliated to Tribhuvan University Institute of Medicine (TUIOM) inside the Kathmandu valley, Nepal. The study population consisted of 443 nursing students from four nursing colleges, the Maharajgunj Nursing Campus

(MNC), Lalitpur Nursing Campus (LNC), JF Little Angel’s College (LA) and Manmohan Memorial Institute of Health Sciences (MMIHS). The sample size was calculated by using formula<sup>10</sup>:  $n = [(z^2pq) + ME^2/ME^2 + z^2pq/N]$ , where  $z=1.96$  for 95% confidence level,  $p=68\%$ <sup>3</sup>,  $q=1-p$ , ME (margin of error) = 5%,  $n$  = Sample size,  $N$  = Population size (i.e. 443).

The required sample size was 226. Allowing non-response rate of 5% and maintaining the power of test, the final sample size was 284. The proportionate stratified random sampling was used to divide the population into four strata.

Sample size for each stratum was determined by<sup>11</sup>  $n_h = (N_h/N)n$ , where,  $n_h$ : sample size for stratum  $h$ ,  $N_h$ : population size for stratum  $h$ ,  $N$ : total population size,  $n$ : total sample size.

After stratification, the sample size 284 nursing students were selected with simple random sampling lottery method from each stratum, (Figure 1).

The instruments used in this study composed of four parts:

Part I: was related to structured questionnaire on socio-demographic and personal information.

Part II: Perceived Stress Scale (PSS) consists of 34 items rated in 5-point Likert scale (0=never; 1= infrequently; 2= sometime; 3= frequently and 4=always). Items in the scale grouped into seven factors related to the sources of stress. The factors include stress from taking care of patients, stress from teachers, stress from assignments and workload, stress from peers

Stratum 1 MNC=125	Stratum 2 LNC=97	Stratum 3 LA=112	Stratum 4 MMIHS= 109
79	61	75	69

**Figure 1. Strata, Population size, sample size from four colleges**

and daily life, stress from lack of professional knowledge and skills, stress from the clinical environment and stress from hospital staff. The higher score indicates higher levels of stress.

Part III: Physio-Psycho-Social Response Scale (PPSRS) consists of 21 items rated in 5-point Likert scale (0=never; 1= infrequently; 2= sometime; 3= frequently and 4=always). Higher mean score indicates poor health status.<sup>7</sup>

Part IV: Coping Check List (CCL) consists of 70 items in six dimensions which include problem focused, passive acceptance, avoidance coping, social support, emotion focused and religious coping. Mean score < 37.5 indicate low user; 37.5 Average user and > 37.5 High Users.<sup>12</sup> In this study reliability of the instrument was tested using Cronbach's alpha. It was satisfactory, 0.927 for PSS, 0.906 for PPSRS, and 0.813 for CCL.

Ethical approval was obtained from Institutional Review Board (IRB) of TUIOM, and written permission from nursing colleges. Informed verbal consent was taken from the students and anonymity was maintained. Students of bachelor (B.Sc.) nursing program, first to fourth year, willing to participate were selected after drawing lottery. The self-administered structured questionnaires were used to collect the data. The data were

checked for accuracy and completeness. The SPSS 16 was used and descriptive statistics such as frequency, mean and standard deviation were used for socio-demographic variables. Pearson's correlation coefficient was used for analyzing correlation between overall stress and coping.

### Results

There were 284 respondents. The mean age was 20.21±1.48 years, 185 (65.14%) were living in hostel, 100 (35.2%) had financial difficulties and 155 (54.57%) chose nursing for reasons other than self-interest, (Table- 1).

Three main sources of moderate level of stress were assignments and workload 271 (94.5%), clinical environment 250 (88.1%), and peer and daily life 225 (79.2%), (Table 2).

The students' physio-psycho-social health during stress in general was good. Physio-psycho-social responses during stress, 109 (38.4%) reported best emotional health, 125 (44%) best social behavioral and 189 (66.7%) best physical health, (Table 3).

To combat the stress, majority of students 175 (61.6%) used problem focused coping, social support 173 (60.9%), and avoidance coping 165 (58.1%), (Table 4).

**Table 1. Demographic characteristics of bachelor (BSc) nursing students (n=284) from four nursing colleges affiliated to Tribhuvan University Institute of Medicine (TUIOM) in Kathmandu valley, Nepal**

Characteristics		N	%
Age	< 20	99	34.85
	≥ 20	185	65.14
Current Residency	Hostel & Rented Home	185	65.14
	Home	99	34.85
Financial Problem	Yes	100	35.2
	No	184	64.8
Selection of Nursing Education	Self-interest	129	45.4
	Others	155	54.57
Academic Year	First year	91	32.0
	Second year	67	23.6
	Third year	66	23.2
	Fourth year	60	21.1

Note: Others in selection of nursing education refer to parental interest, failure in other interested field and job-oriented education.

**Table 2. Level of stress perceived by bachelor (BSc) nursing students (n =284)**

Sources of Stress	Level of stress		
	Low N (%)	Moderate N (%)	High N (%)
Taking Care of Patients	134 (47.2)	144 (50.7)	6 (2.1)
Teachers	80 (27.8)	156 (54.9)	48 (16.9)
Hospital Staff	68 (23.9)	146 (51.4)	70 (24.6)
Assignment and Workload	13 (4.6)	172 (60.6)	99 (34.9)
Peer and Daily Life	59 (20.8)	164 (57.7)	61 (21.5)
Lack of Professional Knowledge & Skills	95 (33.5)	124 (43.7)	65 (22.9)
Clinical Environment	34 (12.0)	172 (60.6)	78 (27.5)
Level of Overall Stress	24 (8.5)	240 (84.5)	20 (7.0)

Note. Mean Score of 2.67-4.00: High Stress, 1.34-2.66: Moderate Stress and 0.00-1.33: Low Stress

**Table 3. Level of health status during physio-psycho-social responses to stress (n = 284)**

Characteristics	Level of Health Status		
	Poor N (%)	Good N (%)	Best N (%)
Emotional Health	39 (13.7)	136 (47.9)	109 (38.4)
Social Health	35 (12.3)	124 (43.7)	125 (44.0)
Physical Health	5 (1.8)	90 (31.7)	189 (66.7)
Level of Physio-Psycho-Social Responses	10 (3.5)	142 (50.0)	132 (46.5)

Note. Mean Score of 2.67-4.00: Poor Health, 1.34-2.66: Good Health and 0.00-1.33: Best Health

**Table 4. Coping strategies used by nursing students (n =284)**

Characteristics	N	%	Mean of Mean Score	SD	Min-Max
<b>Problem Focused</b>					
Low Users	109	38.4	0.61	0.13	0.14-0.90
High Users	175	61.6			
<b>Passive acceptance</b>					
Low Users	167	58.8	0.59	0.18	0.17-1.00
High Users	117	41.2			
<b>Avoidance Coping</b>					
Low Users	119	41.9	0.52	0.13	0.23-0.92
High Users	165	58.1			
<b>Social Support</b>					
Low Users	111	39.1	0.49	0.21	0.00-1.00
High Users	173	60.9			
<b>Emotion Focused</b>					
Low Users	120	42.3	0.43	0.17	0.00-0.77
High Users	164	57.7			
<b>Religious Coping</b>					
Low Users	175	61.6	0.44	0.23	0.00-1.00
High Users	109	38.4			
<b>Overall Coping Strategies Users</b>					
Low Users	137	48.2	0.54	0.09	0.24-0.79
High Users	147	51.8			

Low Users: Below mean score <37.5, Average user: 37.5 and High Users: mean score > 37.5

Table 5. Pearson's correlation between stress and coping strategies

Measure	1	2	3	4	5	6	7	8
1. Overall Stress Score	-							
2. Overall Coping Score	.138*	-						
3. Problem Focused	-.012	.717**	-					
4. Passive Acceptance	.275**	.406**	-.040	-				
5. Avoidance Coping	.154**	.567**	.217**	.254**	-			
6. Seeking Social Support	.040	.587**	.402**	-.012	.173**	-		
7. Emotion Focused	.064	.721**	.409**	.084	.302**	.399**	-	
8. Religious Coping	-.072	.550**	.347**	.064	.147*	.403**	.327**	-

\* Correlation is significant at the .05 level (2-tailed). \*\* Correlation is significant at the .01 level (2-tailed)

Pearson's correlation revealed a weak positive relationship between stress and coping ( $r=0.138$ ), likewise, there is a positive relationship between passive acceptance, avoidance coping strategies and overall stress level ( $r=0.275$ ), ( $r=0.154$ ) respectively, (Table-5)

## Discussions

This study reveals that 84.5% of students had moderate level of stress and only 7% of bachelor nursing students had high level of stress. Similar findings is reported with 70-90% moderate<sup>13-15</sup> and 72% high<sup>16</sup> level of stress. The high levels of stress could be due to high expectations related to patient care and clinical and classroom requirements. The other reason could be that most students being adolescents may get stressed out dealing with life and death issues of patients.

Other studies shows less overall stress, 50.2% mild, 33.7% moderate and 16.1% severe level of stress.<sup>17</sup> The severity of stress experienced by nursing students may vary according to the physical facilities such as classroom, teaching aids, teachers, and library facilities of nursing colleges and availability of clinical area, clinical instructors, theory practice gap and increased workload in clinical environment.

The current study showed that the most common stressors perceived by nursing students were stress from assignments and workload, followed by clinical environment, peer and daily life, hospital staff, teachers, lack of professional knowledge and skills and lest

stressor was from taking care of patients. The findings are consistent with other studies.<sup>5,18</sup> Unlike ours, other study have reported lack of professional knowledge and skills and taking care of patient were the most common stressors.<sup>7</sup>

In present study common responses to stress were emotional followed by social behavioral symptoms response. However, overall physio-psycho-social health status among nursing students during stress was good. This result is consistent other studies.<sup>7,15,19</sup> This could be an indication that students are able to cope with various stressors faced during their nursing education.

Our study results revealed that majority of the students used problem focused coping strategies, followed by social support coping, and avoidance coping. Emotion focused, passive acceptance and religious coping were less commonly used. Other studies also found problem focused coping whereas the avoidance coping was less used.<sup>19,20</sup> Problem focusing coping is considered to be an effective coping strategies that nursing students learn from the beginning of their program. The reason for high use of social support could be the family relations are stronger in Nepali culture. Avoidance coping creates negative effects on the students and increases the level of stress. Positive correlation was found between stress and coping strategies. This indicates that when the level of stress increases, the coping also increases, as found in other studies.<sup>18</sup>

Limitations of this study was that it was only limited to bachelor (B.Sc.) nursing students and from four nursing colleges affiliated to TUIOM in Kathmandu valley, and therefore the findings may not be generalized for other students and colleges.

## Conclusions

Stress is common among bachelor level nursing students. More than 3/4<sup>th</sup> of bachelor nursing students reported moderate level of stress, 2/3<sup>rd</sup> of the students mainly used the problem focused coping strategies. Overall, half of the students maintained good level of physio-psychosocial health during stress.

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