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Role of Coping in Stress, Anxiety, Depression among Nursing Students of Purbanchal University in Kathmandu

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ABSTRACT

Background: Unresolved stress among nursing students may occur due to the failure to use effective coping strategies, which may lead to problems such as anxiety and depression. The purpose of this study was to determine the prevalence of stress, anxiety and depression among nursing students and examine its relationship with coping styles.

Methods: This descriptive cross-sectional study was conducted among 680 nursing students enrolled in nine colleges affiliated to Purbanchal university in Nepal during academic year 2018. Depression anxiety stress scale- 21 was used to assess the levels of depression, anxiety and stress. Coping was measured using brief cope inventory.

Results: Majority of students (51%, $n = 350$) reported moderate to extremely severe levels of stress, anxiety, and depression. Students mostly used problem-focused coping strategies. A one-way MANOVA revealed statistically significant differences among the levels of problem- focused coping (Wilks' Lambda = .96, $F(3, 676) = 8.11$, $p < .001$ and emotion-focused coping (Wilk's Lambda = .90, $F(3, 676) = 23.69$, $p < .001$ with stress, anxiety and depression.

Conclusions: The findings can be sourced to create awareness among faculty and administrators of nursing colleges regarding high occurrence of stress, anxiety and depression among students. Future studies can focus on the need to establish the counseling centers in nursing colleges that may aid in teaching students the effective coping strategies.

Keywords: Anxiety; brief cope inventory; depression; depression anxiety stress scale; nursing students; stress.

INTRODUCTION

Nursing students are often exposed to high levels of stress when compared with students from other programs^{1,2} which may cause anxiety and depression.³⁻⁶ Various research findings reveal that coping creates stress-buffer effect^{7,8} thus preventing stress, anxiety and depression. The problem-focused coping acts upon altering situation causing stress.⁹ whereas, emotion-focused coping enables the person to modify the reaction to the stressful situation.⁹ The failure to use adaptive coping strategies may result in stress, anxiety and depression.¹⁰

Although limited studies in Nepal have addressed the prevalence and factors related to stress, anxiety, and depression, findings from two published studies reveal high levels of depression^{11,12} and moderate level of stress among nursing students.¹³ Excessive and prolonged stress and anxiety can be harmful to students' academic

and clinical performance. Therefore, this study aimed to determine the prevalence of stress, anxiety, and depression and examine the relationship of coping (predictor variable) with stress, anxiety and depression (outcome variables) among nursing students.

METHODS

This multisite, cross-sectional study included all undergraduate Bachelor of Science (B.Sc.) in Nursing enrolled in the colleges affiliated to Purbanchal University in Kathmandu Valley. The target population in this study involved 14 nursing colleges comprising of 1072 students. After approaching the nursing principals of all the colleges, nine colleges granted permission to carry out study in their colleges. A schedule was made for data collection in consultation with the college principals and class coordinators from nine colleges after obtaining ethical approval from ethical review board (ERB), Nepal Health Research Council's (NHRC).

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I used G* Power 3.1 software¹⁴ to calculate the minimum sample size for this study. A total of 682 samples were selected using convenience sampling and data was collected from those who were willing to participate after obtaining informed consent. A data collection schedule was made according to the convenience and availability of the students in the college suggested by the respected Principals of nursing colleges. The data was collected from June 1-July 10, 2018, using self-administered pencil-and-paper questionnaires in English language, which were distributed and collected on the same day by the researcher. In order to avoid response bias, the data was not collected during exam period.

The outcome variables of stress, anxiety, and depression was operationalized by using Depression Anxiety Stress Scale (DASS)-21 by Lovibond & Lovibond,¹⁵ which is comprised of three subscales; DASS-D, DASS-A, and DASS-S for measuring depression, anxiety, and stress respectively. Each subscale consists of seven items on a scale. In this study, the Cronbach's alpha was .78, .74, .76, and .89 for depression, anxiety, stress, and overall scale respectively.

The predictor variable of coping was operationalized using Brief Cope Inventory (BCI),¹⁶ with 14 subscales consisting of two items each that indicate 28 coping strategies. Based on the theory of Stress, Coping, and Adaptation by Lazarus and Folkman,¹⁷ the variable of coping has two domains: problem-focused and emotion-focused. The problem-focused domain has five coping strategies with two items each, whereas, the emotion-focused domain consists of nine coping strategies with two items each. The overall internal consistency of BCI tool with Cronbach's alpha was .79, whereas, problem-focused and emotion-focused domains had Cronbach's alpha of .72 and .73 respectively.

Statistical Package for the Social Sciences (SPSS) for Mac version 23 was used for storage and analysis of the data in this study. The descriptive statistics was used to describe the sociodemographic variables, prevalence of stress, anxiety and depression, and coping strategies used by the sample. The correlation between coping and stress, anxiety, depression was examined by using a one-way multivariate analysis of variance (MANOVA) after determining that the assumptions for MANOVA were met.

RESULTS

The total number of students who consented for participating in the study were 682, of which two

participants did not complete the survey forms and were excluded from the study. I included 680 participants response in data analysis. Table 1 depicts the socio-demographic characteristics of the sample. The mean age of sample was 20.29. Although, the majority of the participants (72.4%, *n* = 492) reported self-interest as the reason for choosing nursing education, A small number of participants (*n* = 16) stated other reasons for choosing nursing education such as unavailability of other professional education, peer influence, and opportunity for foreign-based jobs in future. A majority of the participants (79.4%, *n* = 540) reported that there were no counseling services available in their college.

Table 1. Sociodemographic Characteristics (n=680).

Characteristics	Frequency (n)	Percentage (%)
Age (M = 20.29, SD = 1.65)		
Marital status		
Single	656	96.5
Married	21	3.1
Divorced	3	.4
Reason for choosing nursing education		
Self- interest	492	72.4
Parents' influence	109	16.0
Failure in interested field	63	9.3
Others	16	2.4
Current academic year		
First	183	26.9
Second	177	26.0
Third	167	24.6
Fourth	153	22.5
Availability of counseling services in college		
Yes	140	20.6
No	540	79.4
Counseling provider (n = 140)		
Faculty	77	55.0
Professional counselor	18	12.9
Administrative staff	44	31.4
Others	1	.7

The operationalization of the outcome variables stress, anxiety, and depression indicated that the participants had moderate to extremely severe levels of depression (51.7%, *n* = 350), anxiety (72.9%, *n* = 496), and stress (47%, *n* = 319) at the time of data collection. The levels of stress, anxiety, and depression are listed in Table 2.

Table 2. Descriptive Statistics for Stress, Anxiety, and Depression Using DASS-21 (n=680).

Severity	Depression		Anxiety		Stress	
	f	Percent of sample	f	Percent of sample	f	Percent of sample
Normal	208	30.6	127	18.7	168	24.7
D = 0-9						
A = 0-7						
S = 0-14						
Mild	122	17.9	57	8.4	193	28.4
D= 10-13						
A= 8-9						
S= 15-18						
Moderate	190	27.9	171	25.1	148	21.8
D= 14-20						
A= 10-14						
S= 19-25						
Severe	73	10.7	106	15.6	133	19.6
D= 21-27						
A= 15-27						
S= 26-33						
Extremely Severe	87	12.8	219	32.2	38	5.6
D= 28+						
A= 20+						
S= 34+						

Note. D= Depression, A= Anxiety, S= Stress.

The predictor variable coping measured by BCI revealed that participants used problem-focused coping strategies during stress. The first three coping strategies used by participants included positive reframing, active coping, and acceptance. The strategies least by students were self-blame, humor, and substance use. Table 3 lists the types of problem-focused and emotion-focused

strategies the 680 participants used during stress. Table 3.

Descriptive Statistics for Coping Used by the Students (n= 680).

Coping strategy	Mean	SD
Problem-focused		
Positive reframing	6.21	1.52
Active coping	6.17	2.16
Acceptance	6.13	1.52
Use of instrumental support	5.96	1.47
Planning	5.92	1.41
Emotion-focused		
Self-distraction	5.98	1.49
Use of emotional support	5.74	1.49
Religion	4.97	1.70
Venting	4.83	1.60
Denial	4.32	1.65
Behavioral disengagement	4.10	1.70
Self-blame	4.02	1.62
Humor	3.55	1.67
Substance use	2.21	.73

Table 4 shows the result of a one-way MANOVA that determined the effect of two levels of problem-focused coping (low use and high use) on the three outcome variables, the stress, anxiety, and depression. Statistically significant differences were found among the levels of problem-focused coping on the outcome variables, Wilks' $\lambda = .96$, $F(3,676) = 8.11$, $p < .001$.

There was a significant effect of levels of emotion-focused coping (low use and high use) on stress, anxiety, and depression, Wilks' $\lambda = .90$, $F(3,676) = 23.69$, $p < .001$ (Table 5).

Table 4. Multivariate Test for Problem-Focused Coping.

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial eta squared
Intercept	Pillai's Trace	.846	1239.760	3.000	676.000	.000	.846
	Wilks' Lambda	.154	1239.760	3.000	676.000	.000	.846
	Hotelling's Trace	5.502	1239.760	3.000	676.000	.000	.846
	Roy's Largest Root	5.502	1239.760	3.000	676.000	.000	.846
Problem-focused coping	Pillai's Trace	.027	6.193	3.000	676.000	.000	.027
	Wilks' Lambda	.973	6.193	3.000	676.000	.000	.027
	Hotelling's Trace	.027	6.193	3.000	676.000	.000	.027
	Roy's Largest Root	.027	6.193	3.000	676.000	.000	.027

Table 5. Multivariate Test for Emotion-Focused Coping.

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial eta squared
Intercept	Pillai's Trace	.854	1323.095	3.000	676.000	.000	.854
	Wilks' Lambda	.146	1323.095	3.000	676.000	.000	.854
	Hotelling's Trace	5.872	1323.095	3.000	676.000	.000	.854
	Roy's Largest Root	5.872	1323.095	3.000	676.000	.000	.854
Emotion-focused coping	Pillai's Trace	.095	23.668	3.000	676.000	.000	.095
	Wilks' Lambda	.905	23.668	3.000	676.000	.000	.095
	Hotelling's Trace	.105	23.668	3.000	676.000	.000	.095
	Roy's Largest Root	.105	23.668	3.000	676.000	.000	.095

DISCUSSION

The purpose of this nonexperimental correlational study was to determine the relationship of coping with levels of stress, anxiety, and depression among nursing students enrolled in various colleges affiliated to Purbanchal university in Nepal. The study also explored the prevalence of stress, anxiety, and depression among undergraduate nursing students. The predictor variable in this study was coping and the outcome variables were stress, anxiety, and depression. The major findings of this study were (a) high prevalence of stress, anxiety, and depression among nursing students; (b) statistically significant relationship of campus coping with stress, anxiety, and depression.

The majority of students reported moderate to extremely severe level of anxiety (72%) followed by depression (51%), and stress (47%) on DASS-21, which is not a measure of clinical diagnoses of stress, anxiety, and depression. Rather, it is reporting of symptoms experienced by the individuals over a period of one week. The findings of my study concur with a study done in India⁴ who found that students had moderate to extremely severe levels of anxiety (56.6%), followed by depression (33.3%), and stress (23.26%). In a similar study conducted in Hong Kong, nursing students reported moderate to extremely severe anxiety (39.9%), depression (24.3%), and stress (20%).¹⁸ One of the reasons for such high levels of stress, anxiety, and depression could be the unavailability of counseling services in the nursing colleges^{19,20} which can most likely be evidenced through future research.

Three most commonly used problem-focused coping strategies that the students used in this study were positive reframing, active coping, and acceptance. Self-distraction such as watching television, reading, sleeping, or shopping, and religion (such as praying, meditation, and spiritual beliefs) were used as emotion-focused strategies by the students. The other emotion-focused coping strategy that the students used in this

study was seeking emotional support. Overall, students were found to prefer problem-focused coping strategies over emotion-focused coping strategies. However, most recent research findings contradicted the findings of this study by reporting that emotion-focused are dominant among nursing students.²¹⁻²⁴ Amongst emotion-focused strategies, students were found to use distractive coping such as watching TV, movies, physical exercise or a shower, denial of a problem and avoidance. The emotion-focused strategies can be ineffective ways of dealing with the stressful situation and by using them, individuals will not succeed in solving the real problem.²³ The longitudinal research findings support the findings of my study by indicating that senior students used more problem-solving coping strategies than emotion-focused coping strategies as they progressed through the course.²² This could be due to the guidance from the educators, counselors, or family members. The nursing curriculum also offers problem-solving techniques to the students that may apply to their personal life.

The results of this research showed statistically significant differences across two levels of (low-users and high-users) problem-focused and emotion-focused coping. This finding concurs with the other studies that found the significant coefficient of correlations among coping strategies and stress.^{22,25} However, the finding in this study contradicts Yildirim et al.²⁶ study which revealed a non-significant relationship between stress and coping. Avoidance strategy, an emotion-focused coping strategy was seen to play a risk factor while active coping, a problem-focused coping, showed as a protective factor in depression and anxiety.²⁷ The high-users of emotion-focused coping were found to have higher levels of depression and anxiety, whereas, anxiety and depression were not significantly related to problem-focused coping.^{27,28}

CONCLUSIONS

Nursing students may experience high levels of stress,

anxiety, and depression if they fail to use effective coping strategies. This study found a significant relationship of coping with stress, anxiety, and depression. Most nursing students in this study used problem-focused coping strategies which are believed to be more effective than emotion-focused coping, however, their levels of stress, anxiety, and depression were relatively high. The majority of the students in this study reported unavailability of counseling services in their college. Hence, the colleges should take the initiative to introduce and implement services such as periodic mental health screening and counseling facilities that will enhance the mental health

of the students.

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