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Original Article

Depression, Anxiety and Stress among Nursing Students at Biratnagar

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Abstract

Background
Nursing students' depression, anxiety and stress are important issue in society with strongest connection to client recover when these students become nurse in future.Such psychological distress among them leads to less productivity, reduced quality of life, learning difficulties and may negatively affect patient care.

Materials and Methods
A descriptive, cross-sectional study was conducted in Nobel Medical College Teaching Hospital, Biratnagar. A total of 104 Bachelor nursing students were selected by using a non-probability total enumerative sampling technique. Data were collected in the classroom through self-administered questionnaire using standardized tool DASS-21. All calculations and statistical analyzed by using SPSS software version 23.0.

Results
The mental health status of nursing students reported alarming accounting about 37% severe anxiety, 17% severe depression and severe stress each. Among the six variables run, only year of study found associated with depression, however, stress and anxiety were not found associated with all given six variables. Similarly, there is very strong positive correlation was found among stress, anxiety and depression.

Conclusion
The number of students experiencing depression, anxiety and stress were some levels. Among the six variables run, only year of study found associated with depression but none of the variables found associated with other mental health dimensions. Similarly, the dimension of mental health: stress, anxiety and depression were found strongly correlated.

Keywords: *Anxiety, Depression, Mental Health, Nurse, Students*

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Introduction

Nursing students are subjected to different kinds of stressors, such as the pressure of academics with an obligation to succeed, an uncertain future and difficulties of integrating into the system. Moreover, the transition between the middle childhood and adolescence represents a confluence of social, academic, cognitive, physiological and physical changes. Nursing schools are recognized as a stressful environment that often exerts a negative effect on the academic performance and psychological wellbeing of the students [1].

The prevalence of global depression in nursing students was 34.0 %. This report advocates a high prevalence of depression among nursing students in comparison to the general population which as 4.7% [2]. A study from a neighboring country of India sharing a similar socio-cultural environment reported a very high prevalence of combined depression, an anxiety stress among the nursing students the proportion having depression, anxiety and stress were 67.7%, 85.3% and 46.9% respectively [3]. Globally the lifetime prevalence of depression, anxiety, and stress among adolescents and young adults are estimated to range from 5% to 70% [4, 5]. Prevalence of depression 29.2%, severe somatic symptoms of 22.4% and seriously committing suicide in medical students [6]. Similarly, another data shows problems like depression, anxiety and stress were more than 30% among medical students in India [7].

Hence, the objectives of this study are to assess depression, anxiety and stress, their correlation and examine its association with socio-demographic variables among nursing students at Biratnagar.

Materials and Methods

A cross-sectional study is designed at Nobel Medical College Teaching Hospital, Biratnagar from May 2021 to June 2023. Data was collected after getting ethical clearance from Institutional Review Board of Nobel Medical College Teaching Hospital, Biratnagar. We assured informed written consent from all respondents who met inclusive criteria were selected. The sample included students studying at 3rd and 4th year Bachelor of Sciences in Nursing (BSc) and1st,3rd and 4th year Bachelor in nursing science (BNS). Students in BSc 1st, 2nd year and in BNS 2ndyear were excluded from the study. Non-probability total enumerative sampling technique was used to select 104 students of the Nobel Medical College and Teaching Hospital, Biratnagar. The sample size was calculated by the formula $N=Z^2pq/d^2$, Where z signified at 95% confidence level which is 1.96 Prevalence of the study (p) = 85.3 % = 0.853 [3]. Margin error (e) = ±5% = 0.05, the required sample size was 68 by putting the values in the above formula.

Data had collected by a self- administered questionnaire comprising two parts. Part I of the questionnaire consisted of sociodemographic characteristics of the students. Part II of the questionnaire consisted of questions used to measure Depression, Anxiety and Stress. DAS-21, a self-report questionnaire with 21-items which includes recent mood changes and three mental constructs as depression, anxiety and stress. It had 7 statements in each domain. It consisted of 21 items rated on a four-point Likert scale grading from 0 (never) to 3 (very much). Higher scores indicated a higher level of anxiety, stress and depression. The reliability of instruments used was pre-testing in 10% of the estimated study sample who meets the inclusion criteria in similar setting, they were not included in the study later. The questionnaire has subsequently been validating and used in many cultures and languages including Nepal.

Scores of depressions, anxiety stress had calculated by summing the scores for the relevant items. The depression scale was 3, 5, 10, 13, 16, 17, 21. The anxiety scale items included questions: 2, 4, 7, 9, 15, 19, 20. The stress scale items were 1, 6, 8, 11, 12, 14, 18. The score for each of the respondents over each of the sub-scales were then evaluated as per the severity rating index DAS-21 scoring. It must be multiplied by 2.

Domain	Normal	Mild	Moderate	Severe	Very severe
Depression	0-9	10-13	14-20	21-27	28+
Anxiety	0-7	8-9	10-14	15-19	20+
Stress	0-14	15-18	19-25	26-33	34+

The data then exported to SPSS version 23 for analysis. Descriptive statistics such as frequencies, percentages, mean, and standard deviation were used to assess socio-demographic variable and statistical test as chi square test and correlation coefficient were used to examine the association between the variables.

Results

Among the total 104 participants, more than two third (78.8 %) had age 22 years and higher, nearly ninety percent (88.5%) belonged to Hindu religion. Similarly, four fifth participants were residing in nuclear family setup (80.8%). Data showed about two third participants had good

family income; accounting 67.3% participants had monthly income more than 30,000 per month.

The data also revealed that highest percentage of participants (47.1%) were studying in third year following by fourth year (39.4%). Only, 13.5% participants were studying first year and no students were taken from the second year. While observing the participants' parents education, 28.8% fathers had bachelor's degree and above education, another 27.9% had completed higher secondary and 28.8% had completed secondary level of education. However, the status of mother's education was poorer than the father's education. Besides the father's education, only 19.2 % mothers had completed bachelor's degree and above, 16.3% had higher secondary education and nearly half (44.2%) had completed secondary education only.

Researcher also digs out information on occupation status of participant's father and mother. Nearly half of participant's father was involving in service occupation in comparison to only 12.5% mother in the same occupation. Majority of the mothers (72.1%) were involving in household chores (house made).Only about 17 percent fathers and 2 percent mothers were involving in farming. While observing the marital characteristics of participants, a significant volume of participants (17.3%) were married even though they were studying only in bachelor's level and about eighty three percent (82.7%) were unmarried. Similarly, 10.6 percent participants had conflicts on family relationship and more than one-third (34.6%) were facing financial difficulties while studying. Seventy-six percent participants had off time leisure facility, in contrast to 24% participants were not getting any off-time leisure facility. Furthermore, nine in ten (90.4 %) participants complaint that they had lack of vacation and only 44.2 percent were satisfied with their nursing profession. Researcher had also collected opinion on what was the main stressor the nursing students were facing, the result showed that more than 80% nursing students had a stressor related to academic pressure and only 17.3% reported as personal reasons.

Table 1 shows three dimension of mental health status: stress, anxiety and depression level were rated using a standard tool. The result showed a significant high level of anxiety (36.5%), stress (17.3%) and depression (17.3%), were presenting among nursing students. Similarly, majority of the participants were found with either moderate or high level of mental health problem. Only about 30% participants were anxiety free, 49% were depression free and 61% with stress free. This report shows, the mental health status was gradually increasing over time among nursing students as well (Table 1).

Table 1: Mental Health Status of Participants

Mental Health Status	Frequency	Percent
Stress		
Low	64	61.5
Moderate	22	21.2
Severe+	18	17.3
Anxiety		
Normal-Low	31	29.8
Moderate	35	33.7
Severe+	38	36.5
Depression		
Normal-Low	51	49
Moderate	35	33.7
Severe+	18	17.3
Total	**104**	**100.0**

Table 2 presents the result of association between depression level and various socio-demographic characteristics of participants. The socio-demographic variables like age, year of education, education level of father and mother, satisfaction with nursing education, insufficiency of vacation or leave were analyzed. Among these variables, only level of education found associated with depression. Nursing students of Bachelor 3rd and forth year were found with more depression level than the students of first year.

The table 3 presents the result of association between anxiety level and various socio-demographic characteristics of participants. Although six sociodemographic variables like age, year of education, education level of father and mother, satisfaction with nursing education, insufficiency of vacation or leave were played; no variable found associated with anxiety level. The table 4 presents the result of association between stress level and various socio-demographic characteristics of participants. Here also the six socio-demographic variables like age, year of education, education level of father and mother, satis-

faction with nursing education, insufficiency of vacation or leave were played; none of the variable found associated with stress level too.

Table 2: Association between depression level and socio-demographic variables n=104

Characteristics		Depression Level			P Value
	Freq.	Normal-Low	Moderate	Severe+	
Age					
less than 22 years	N	13	5	4	Chi Sq.
	%	59.1	22.7	18.2	= 1.58
equal and above 22	N	38	30	14	p=0.44
years	%	46.3	36.6	17.1	
Year of Education (Study)					
First year	N	11	3	0.0	Chi Sq.
	%	79.60	21.40	0.0	= 8.52
Third and Fourth	N	40	32	18	p=0.014
Year	%	40.0	40.0	20.0	
Education of Father					
Primary	N	7	4	4	Chi Sq.
	%	46.67	26.67	26.67	= 8.54
Secondary	N	19	5	6	
	%	63.33	16.67	20.0	
Higher secondary	N	11	13	5	p=0.2
	%	37.9	44.8	17.3	
Bachelor and above	N	14	13	3	
	%	46.7	43.3	10.0	
Education of Mother					
Primary	N	11	5	5	Chi Sq.
	%	52.4	23.8	23.8	= 4.67
Secondary	N	24	14	8	
	%	52.2	30.4	17.4	p=0.58
Higher secondary	N	9	7	1	
	%	52.9	41.2	5.9	
Bachelorandabove	N	7	9	4	
	%	35.0	45.0	20.0	
Satisfied with Nursing Education					
Satisfied	N	24	16	6	Chi Sq.
	%	52.2	34.8	13	= 1.06
Unsatisfied	N	27	19	12	p=0.59
	%	46.5	32.8	20.7	
Insufficient Vacation/leave					
Yes	N	46	31	17	Chi Sq.
	%	48.9	33	18.1	= 0.48
No	N	5	4	1	p=0.78
	%	50.0	40.0	10.0	

Table 3: Association between Anxiety level and socio-demographic variables n=104

Characteristics		Anxiety Level			P Value
		Normal-Low	Moderate	Severe+	
Age					
Lessthan 22 Years	N	8	7	7	
	%	36.4	31.8	31.8	0.6
22 Years and above	N	23	28	31	
	%	28.0	34.1	37.8	0.74
Year of Education					
First Year	N	4	5	5	
	%	28.6	35.7	35.7	0.031
Third and Fourth					
Year	N	27	30	33	
	%	33.3	33.3	33.3	0.98
Education of Father					
Primary	N	3	7	5	
	%	20.0	46.7	33.3	4.09
Secondary	N	12	9	9	
	%	40.0	30.0	30.0	0.66
Highersecondary	N	7	11	11	
	%	24.2	37.9	37.9	
Bachelorandabove	N	9	8	13	
	%	30.0	26.7	43.3	
Education of Mother					
Primary	N	5	10	6	
	%	23.8	47.6	28.6	6.39
Secondary	N	15	16	15	
	%	32.6	34.8	32.6	0.38
Highersecondary	N	7	4	6	
	%	41.2	23.5	35.3	
Bachelorandabove	N	4	5	11	
	%	20.0	25.0	55.0	
Satisfied with Nursing Education					
Satisfied	N	16	14	16	1.0
	%	34.8	30.4	34.8	
Unsatisfied	N	15	21	22	0.60
	%	25.9	36.2	37.9	
Insufficient Vacation					
Yes	N	28	31	35	0.26
	%	29.8	33.0	37.2	
No	N	3	4	3	0.87
	%	30.0	40.0	30.0	

Table 5 presents the result of correlation analysis between Stress, Anxiety and Depression. Result showed very strong positive correlation between Stress and Anxiety, Stress and Depression, Anxiety and Depression. It means all the mental health dimensions were positively correlated to each other. who had stress also had chance to get depression and anxiety, who had anxiety also had chance to develop depression.

Table 4: Stress Level by Sociodemographic variables n=104

Characteristics		Stress Level			P Value
		Normal-Low	Moderate	Severe+	
Age					
less than 22 years	N	15	3	4	3.48
	%	68.2	13.6	18.2	
equal and above 22 years	N	49	19	14	0.18
	%	59.8	23.2	17.0	
Year of Education					
First year	N	10	4	0	0.96
	%	71.4	28.5	0.0	
Third and Fourth Year	N	54	18	18	0.61
	%	60.0	20.0	20.0	
Education of Father					
Primary	N	8	3	4	
	%	53.3	20	26.7	4.5
Secondary	N	22	5	3	
	%	73.3	16.7	10.0	0.6
higher secondary	N	16	6	7	
	%	55.2	20.7	24.1	
bachelor and above	N	18	8	4	
	%	60.0	26.7	13.3	
Education of Mother					
Primary	N	14	2	5	
	%	66.7	9.5	23.8	5.59
Secondary	N	31	9	6	
	%	67.4	19.6	13.0	0.47
Higher Secondary	N	10	4	3	
	%	58.8	23.5	17.6	
Bachelorandabove	N	9	7	4	
	%	50.0	40.0	20.0	
Satisfied with Nursing Edu					
Satisfied	N	31	9	6	1.42
	%	67.4	19.6	13.0	
Unsatisfied	N	33	13	12	0.49
	%	56.9	22.4	20.7	
Insufficient Vacation					
Yes	N	56	21	17	1.60
	%	59.6	22.3	18.1	
No	N	8	1	1	0.45
	%	80.0	10.0	10.0	

Table 5: correlation between stress, Anxiety and Depression (n=104)

Dimension of Mental Health		Depression Score	Anxiety Score	Stress Level
Depression Score	Pearson Correlation	1	.663**	.765**
	Sig. (2-tailed)		0	0
	N	104	104	104
Anxiety Score	Pearson Correlation	.663**	1	.657**
	Sig. (2-tailed)	0		0
	N	104	104	104
Stress Score	Pearson Correlation	.765**	.657**	1
	Sig. (2-tailed)	0	0	
	N	104	104	104

** Correlation is significant at the 0.01 level (2-tailed).

Discussion

The prevalence of depression, anxiety, and stress among nursing students are significantly high, accounting depression, 52%, anxiety 32%, stress 30% and fear 41% respectively during COVID-19 pandemic [8]. The prevalence of anxiety, depression and stress among adolescents and young adults are estimated to range from 5% to 70% [4]. Anxiety and depression are common psychological disorders throughout the globe. Both conditions have been associated with stressful environment.

Globally, there is rising prevalence of mental health conditions almost everywhere because of the fear and psychological stress of getting infected with COVID-19, and also stress relating to changes in the way we live and our lifestyles. These include family stress, work stress, loss of income and social isolation, also with some facing increased abuse, disrupted education and uncertainty about the future [9-11].

Nursing colleges has recognized as one of the leading institute with stressful environment that often exerts a negative effect on the academic performance, physical health and psychological wellbeing of the student [5]. This study aimed to explore the status of psychological problems (Anxiety, Depression and Stress) among under graduate nursing students studying in a tertiary level medical college and teaching hospital.

Present study revealed 36.5% severe anxiety, 17.3% severe depression as well as stress among the study subjects. Similarly, they also had additional 21% moderate stress, 34% moderate anxiety and about 34% moderate depression. Mulyadi M et.al conducted a systematic review meta-analysis of seventeen studies found relatively higher prevalence of mental health problems. In their study, they had reported 52%

depression, 32% Anxiety and 30% stress. It could be because of they have done their study during COVID-19 pandemic and that time the rate of psychological problems observed high. Another study conducted by Gao J. et.al also keeps similarity with present study, they reported 44.5% PTSD after Covid-19 having fear, anxiety and stress. They reported insomnia 22.8% and only few cases of depression [9].

While analyzing the association of depression with selected socio-demographic variables as age, year of study, education of father and mother, satisfaction with nursing occupation and vacation/leave, only year of education (study) is found significant. Other variables were not significant. Similarly, while looking after the factors associated with anxiety and stress, none of the variables found significantly associated. The study conducted by Norsham Juliana et.al, in Klang Valley, Malaysia explored slightly different associating factors. They found sleep quality, physical inactivity, and eating habits were found to be associated with the mental health status of healthcare shift workers and all of them were modifiable factors, however present study had not considered these types of variables as this is a descriptive study and only limited variables were studied [10]. The Stress, anxiety and depression found positively and very strongly correlated to each other in this study with correlation value more than 0.6 (r= 0.663, 0.765 and 0.657). A study conducted in China by Shao, R et.al also keeps similarity with present study. They found that depression and anxiety symptoms had highly significant correlations with family functioning, social support and coping style [12].

This study included only one gender of undergraduate students (i.e., B. Sc, BNS nursing students) and only single institute; therefore, the findings may lack generalizability to the nursing students from other undergraduate nursing programs as well as proficiency certificate level (PCL).

Conclusion

Finding of the study revealed that more than one third severe anxiety, followed by less than one fourth had severe depression and another severe stress. Among the six variables run, only year of study found associated with depression but none of the variables found associated with other mental health dimensions. Similarly, the dimension of mental health: stress, anxiety and depression were found strongly correlated to each other.

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Conflict of interest: None

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