Psychological Effect of COVID-19 among Nursing Students

Niran Shrestha[1], Nirmala Ghimire[2], Roshani Khatry[3], Ratna Maharjan[4]

[1,2,3,4]Assistant Professor, Patan Academy of Health Sciences School of Nursing and Midwifery (PAHS), School of Nursing and Midwifery, Sanepa, Lalitpur, Nepal

Corresponding Author: Niran Shrestha

ABSTRACT

Objective: Novel Corona Virus Disease (COVID-19) has not only brought the risk of morbidity and mortality but also psychological burden on individuals. The objective of the study was to assess psychological effect of COVID-19 among nursing students of Patan Academy of Health Sciences School of Nursing and midwifery, Lalitpur, Nepal.

Method: A cross sectional analytical study was conducted in July 2020 among 382 nursing students. Stress was assessed by Perceived Stress Scale (PSS) 10 item scale, Anxiety level was assessed using Generalized Anxiety Disorder 7-Item Scale and depression with Patient Health Questionnaire (PHQ) 9 item scale. The total enumerative sampling technique was used for sample selection and data was collected by an online survey. Descriptive and inferential statistics were used to analyze data.

Result: The findings of the study revealed that that 278 (72.8%) nursing students had moderate level and 11 (2.9%) had high perceived stress, 202 (52.9%) had mild anxiety and only 8 (2.1%) had severe anxiety. Regarding depression, 220 (57.6%) did not have depressive symptoms and only 4 (1%) had severe depression. Significant mean difference in stress, anxiety and depression between PCL, BSc and BNS were found with p value <0.05 which indicated that PCL students were more likely to be stressed, anxious and depressed than B.Sc. and BNS due to COVID 19.

Conclusion: The survey revealed that the majority of nursing students had moderate level of stress, mild anxiety and no depressive symptoms during COVID 19. In order to improve the psychological status of students, the government and organizations should collaborate with educational institutions to ensure psychological support to the students.

Keywords: Anxiety, COVID 19, depression, nursing students, psychological effect, stress, students.

INTRODUCTION

COVID-19, the infection caused by a novel corona virus detected in Wuhan in December 2019, is declared as a global pandemic by World Health Organization (WHO), has raised concerns of widespread panic and anxiety among [1]. Similarly, university students are vulnerable to the mental health sequelae of the COVID-19-related confinement. [2-4]

In University of Spain, moderate to extremely severe scores of stress, anxiety and depression were reported by 28.14%, 21.34%, and 34.19% respondents, respectively. [3] Likewise, in Bangladesh, 58.6% of college students experienced stress, 63.6% anxiety, and 62.9% depression. [2] In Chitwan, Nepal, prevalence of mild anxiety was 45.4% and moderate stress was 84.1% among nursing students. [5]

In Nepal, 9561 cases of confirmed COVID-19 with 23 deaths were recorded by 23 June 2020 [1] and it was escalating day by day. Due to this students were confined at home and were taking online classes, which in turn have brought forward the uncertainty for leading a normal campus life. This may

affect their psychological well being. Hence, the aim of the study was to identify the psychological effects of COVID-19 among nursing students

MATERIALS AND METHODS

A cross-sectional analytical study was conducted among undergraduate and post graduate nursing students of Patan Academy of Health Sciences, School of Nursing and Midwifery. Total nursing students were 428 from Proficiency Certificate level (PCL), Bachelor of Science in Nursing (B. Sc.), Bachelor of Nursing Science (BNS) and master level. Among them, 9 were excluded from study due to psychiatric illness and under medication and 37 did not respond. So, total 382 students were enrolled in the study and response rate was 89%. Data was collected by an online survey via Google form from 2020/8/5 to 2020/12 with a structured questionnaire in English.

Ethical approval was taken from the Institutional Review Committee (IRC) of the Patan Academy of Health Science (PAHS) and formal administrative permission was obtained from the dean of school of nursing and midwifery. Email address of students was obtained from administration office. Introduction of study with objectives along with instructions to complete the questionnaire was provided in the information sheet. The participation was voluntary and only those who agreed to participate could move further in the questionnaire. This was accepted as consent for the study. The form was set in such a way that the student can participate only once. Participants were allowed to withdraw from the study without filling the questionnaire if they were willing to do so. Participants' confidentiality was maintained by using code number for each participant and not revealing their individual identity in the report findings. The first reminder email was sent on the 3rdth day and the second on 5th day.

After collection of data, data were checked out thoroughly then edited, coded and transferred into SPSS 16. The data were analyzed and calculated according to the nature of data in terms of descriptive statistics and inferential statistic. Descriptive statistic was used for demographic characteristics. Whereas ANOVA test was used to see the mean difference between different years of PCL (1st, 2nd and 3rd year), B.Sc. Nursing (1st, 2nd, 3rd and 4thyear) and BNS (1st, 2nd and 3rd year) and independent t- test was used to see the difference in stress between first and final year nursing students.

The study instrument consisted three sections- information sheet and consent; demographic information and Perceived Stress Scale (PSS) [6] for stress, Generalized Anxiety Disorder (GAD-7) [7] for anxiety and Patient Health Questionnaire (PHQ-9) for depression regarding COVID-19.

Stress was measured by Perceived Stress Scale (PSS). [6] It is the most widely used psychological instrument for measuring the perception of stress by Cohen, 1988. It consists of 10 items, divided into subscales with similar content. It uses a five point scale with options of "never", "almost never", "sometimes", "fairly often" and "very often", scored as 0, 1, 2, 3and 4 respectively. PSS scores are obtained by reversing responses (0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items (items 4, 5, 7, & 8) and then summing across all scale items. Individual scores on the PSS ranged from 0 to 40. Scores ranging from 0-13 was considered low stress, 14-26 moderate stress and 27-40 was high perceived stress. The Cronbach's alpha reliability coefficient for thePSS-10 total Score is 0.89 [5] and for the PHQ-ADS, internal reliability of Cronbach's alpha value is 0.8 to 0.9. [6]

Anxiety was measured by Generalized Anxiety Assessment (GAD-7). [7] GAD-7 includes seven items based on seven core symptoms of anxiety. The questionnaire asks participants how often, during the last 2 weeks, they were bothered by each symptom. Respondents report their symptoms using a 4-item Likert rating scale

ranging from 0 to 3. It was calculated by assigning scores of 0, 1, 2, and 3, to the response categories of "not at all," "several days," "more than half the days," and "nearly every day," respectively. Total score ranges from 0 to 21. Scores represented Anxiety Severity: <5 minimal, 5-9 mild, 10-14 moderate anxiety and ≥15 severe anxiety. The GAD-7 is a well-validated screening instrument, and it has demonstrated excellent internal consistency (Cronbach's α =0.92).

Depression was measured by the patient Health Questionnaire (PHQ-9) scale.[7] PHQ consists of nine items representing the criterion symptoms for depressive disorder. The questionnaire inquired the frequency with which respondents suffered from these symptoms within last two weeks. It was calculated by assigning scores of 0, 1, 2, and 3, to the response categories of "not at all," "several days," "more than half the days," and "nearly every day," respectively. Individual scores on the PSS can range from 0 to 27. Scores represent depression severity: 0-4 none, 5-9 mild, 10-14 moderate, 15-19 moderately severe, 20-27 severe. For PHQ internal reliability of Cronbach's alpha value is 0.8 to 0.9.

RESULTS

Table 1 showed that 13.6 % nursing students were of age 25-33 years. 39% of students were studying Bachelor of Science (B.Sc) in Nursing and only 6% were from masters' level. Most (97.9%) of students were living with family. More than half of students (57.9%) were from Bagmati Pradesh and most of them (87.2%) were unmarried.

Table 2 revealed that 72.8% nursing students had moderate level and 2.9% had high perceived stress, 52.9% had mild anxiety and only 2.1% had severe anxiety. Regarding depression, 57.6% did not have

depressive symptoms and only 1% had severe depression.

Table 1: Nursing students' socio-demographic characteristics, n =382

Variables	Frequency (n)	Percentage (%)
Age (in years)		
16-24	321	84
25-33	52	13.6
34-42	9	2.4
Educational programme		
Proficiency certificate level Nursing (P.C.L)	110	28.8
Bachelor of Science in Nursing (B.Sc.)	149	39
Bachelor in Nursing Science (BNS)	100	26.2
Masters in Nursing (MN)	23	6.0
Living		
Alone	8	2.1
With family	374	97.9
Province		
Province no. 1	23	6.0
Province no. 2	21	5.5
Bagmati Pradesh	221	57.9
Gandaki Pradesh	88	23.0
Province no. 5	22	5.8
Karnali Pradesh	5	1.3
Sudurpaschim Pradesh	2	.5
Marital status		
Married	49	12.8
Unmarried	333	87.2

Table 2: Students' level of stress, anxiety and depression, n =382

Items	Frequency (n)	Percent (%)
Level of stress		
Low (0-13)	93	24.3
Moderate (14-26)	278	72.8
High Perceived (27-40)	11	2.9
Level of anxiety		
Minimal (<5)	202	52.9
Mild(5-9)	121	31.7
Moderate (10-14)	51	13.4
Severe (≥15)	8	2.1
Level of Depression		
None (<5)	220	57.6
Mild (5-9)	109	28.5
Moderate(10-14)	36	9.4
Moderately severe (15-19)	13	3.4
Severe (≥20)	4	1.0

Table 3 reveals that significant mean difference was found in stress, anxiety and depression among PCL, B. Sc and BNS students with p value less than .05. This showed that PCL students were more likely to be stressed, anxious and depressed than B.Sc and BNS due to COVID 19.

Table 3: Mean difference in stress, anxiety and depression between PCL, B.Sc. and BNS nursing students during COVID 19, n=382

Program	N	Stress during COVID				Anxiety during COVID				Depression during COVID			
		Mean	SD	F	P value	Mean	SD	F	P value	Mean	SD	F	P value
PCL	110	18.25	5.26	9.0	.00*	5.90	4.48	9.56	.00*	5.97	4.63	8.68	.00*
B.Sc.	149	17.89	5.26			5.46	4.02			5.04	4.51		
BNS	100	15.42	5.36			3.55	3.94			3.45	4.02		

P value significant <0.05

Table 4 illustrates that comparing the mean difference of stress, anxiety and depression among different years of PCL, BSc and BNS students, significant mean difference was found in depression among PCL nursing students with p value <0.05. PCL 1st year students were more likely to have more depressive symptoms than second and third year.

Among B.Sc. nursing students, fourth year were more likely to have more stressed, anxious and depressed than first, second and third year. Among BNS students, first year are more likely to have more stress, anxiety and depressive symptoms.

Table 4: Mean difference in stress, anxiety and depression among different years of PCL, BSc. and BNS nursing students

Prog. Year	N	Stress				Anxiety				Depression			
		Mean	SD	F	P value	Mean	SD	F	P value	Mean	SD	F	P value
PCL													
1st	39	17.49	6.70	2.47	.08	6.59	4.84	2.73	.069	7.10	4.28	6.92	.00*
2nd	36	19.83	3.49			6.56	4.39			6.97	5.43		
3rd	35	17.49	4.71			4.46	3.91			3.69	3.17		
B.Sc.													
1st	37	17.86	5.49	.32	.80	5.65	4.07	.45	.714	5.65	5.14	.44	.71
2nd	38	17.47	4.87			5.05	3.38			4.79	3.07		
3rd	36	17.61	5.21			5.14	4.27			4.50	4.55		
4th	38	18.58	5.60			6.00	4.40			5.21	5.07		
BNS													
1st	36	16.25	6.03	1.13	.32	4.22	4.30	1.18	.309	4.36	4.62	2.03	.13
2nd	32	14.31	4.26			2.75	2.87			2.41	2.76		
3rd	32	15.59	5.52			3.59	4.39			3.47	4.23		

*P value significant <0.05

Table 5 showed that while comparing mean differences of stress, anxiety and depression between first year and final year of PCL, B.Sc and BNS students, significant findings were found among PCL nursing first year and final year students with p value 0.05.

Table 5: Mean difference in stress, anxiety and depression between first year and final year PCL, B.Sc. and BNS nursing students

Prog year	N	Stress				Anxiety				Depression			
		Mean	SD	T-test	Sig	Mean	SD	T-test	Sig	Mean	SD	T-test	Sig
PCL													
1st	39	17.49	6.70	.00*	.99	6.59	4.84	2.06	.04*	7.10	4.28	3.85	.00*
Final	35	17.49	4.71			4.46	3.91			3.69	3.17		
B.Sc													
1st	37	17.86	5.49	-.55	.57	5.65	4.07	-.35	.72	5.65	5.14	.37	.71
Final	38	18.58	5.60			6.00	4.40			5.21	5.07		
BNS													
1st	36	16.25	6.03	.46	.64	4.22	4.30	.59	.55	4.36	4.62	.82	.41
Final	32	15.59	5.52			3.59	4.39			3.47	4.23		

* P value significant <0.05

DISCUSSION

In the current study among 382 nursing, 93 (24.3%) nursing students had low level of stress, 278 (72.8%) had moderate level of stress and 11 (2.9%) had high level of perceived stress. Contradictory findings was seen in study conducted in Chitwan, Nepal where low stress was found in 8.7 % nursing students, moderate in 84.1% and high perceived stress in 7.2%. [5] In India, 37.7% had no stress, 24.7% had slight stress, 27.9 % had moderate stress,

6.9% had high stress 2.8% had extreme stress. [8] Similarly in turkey, 36.3% were normal, 29.7% had mild stress, 22.1% had moderate, 10% had severe and 1.9% had very severe stress. [9] In Southern California, USA, almost a quarter (24.7%) of nursing students reported high stress [14] which is contradictory to this research finding.

Regarding anxiety, this survey indicated that 202 (52.9%) students experienced minimal anxiety, 121(31.7%) had mild anxiety, 51(13.4%) experienced

moderate anxiety and only 8 (2.1%) experienced severe anxiety during COVID 19 pandemic. In accordance to this finding, in turkey 49.1% were normal, 17.8% had mild, 16.5% had moderate, 7.1% had severe and 9.5 % had very severe anxiety. [9] In Southern California, USA, more than half (55.2%) nursing students reported moderate-to-severe symptoms of anxiety. [14]

Contrary to our results, a similar study reported that 21.3%, 2.7% and 0.9% of Chinese college students had mild, moderate and severe anxiety, respectively. [10]. Similarly, study conducted among students in Nepal revealed that 25.7% had mild, 22.9% had moderate and 18.1% had severe anxiety [11] where as in contrast, a study conducted in Bangladesh showed 18.3%, 38.9%, 24.8% and 18.1% students had minimal, mild, moderate and severe anxiety respectively. [12] Study conducted in Chitwan revealed that 45.4% had mild anxiety, 33.3% had moderate anxiety, and 21.3% had severe anxiety. [5] Anxiety among nursing students in the Ashkelon Academic College, Southern District, Israel revealed that 42.8% had moderate and 13.1% had severe anxiety .[13]

In current study, more than half (57%) of students didn't have depressive symptoms. 28.5% were having mild depression, 9.4% had moderate depression, 3.4% had moderately severe and only 1% had severe depression. In contrast to this findings study done in Pakistan showed that 30.5%, 24.5%, 21%, 13.6% and 10.4% had none, mild, moderate, moderately severe and severe symptoms respectively. [4] Similarly contradictory findings were seen in Bangladesh where 17.6% had non-minimal, 28.6% had mild, 27.9 % had moderate, 15.1 % had moderately severe and 10.7% had severe symptoms. [12] In addition to this, study conducted in turkey showed that 44.5% were normal, 9.7% had mild, 21.7% had moderate, 13.1% had severe and 10.9% had severe depression [9] in contrast to this findings, in Southern California, USA, more than half (51.5%)

nursing students reported moderate-to-severe symptoms of depression. [14]

In this study, significant mean difference was found in stress, anxiety and depression among PCL, B. Sc and BNS students with p value less than .01. This showed that PCL students were more likely to be stressed, anxious and depressed than B.Sc and BNS due to COVID 19. In contrast to this, study conducted in Manmohan Memorial Institute of Health Sciences (MMIHS), Kathmandu Nepal showed that the perceived stress was found to be more in the B.Sc. Nursing students than PCL nursing and BNS.[15] This might be due to younger age and basic level of nursing of PCL students.

While comparing the mean difference of stress, anxiety and depression among different years of PCL, BSc and BNS students, significant mean difference was found in depression among PCL nursing students. PCL 1st year students were more likely to have more depressive symptoms than second and third year. Similar to this findings, 66% of PCL first year and 68% of PCL second year students were highly stressed in comparison to third year (6%).[16]

Among B.Sc. nursing students, fourth year were more likely to have more stressed, anxious and depressed than first, second and third year. This might be as they are in their final year and not being sure of completion of their course on time and their job insecurities. Among BNS students, first year are more likely to have more stress, anxiety and depressive symptoms.

CONCLUSION

Nearly two third of nursing students had moderate level of stress, one third had low level and very few had high perceived stress during COVID 19. Regarding anxiety, majority had mild anxiety and very few had severe anxiety. More than half did not have depression, more than one third had mild depression and minimal percent had severe depression. Moreover, significant mean difference in stress, anxiety and depression

between PCL, BSc and BNS level were found to be highly significant with p value less than 0.05. This showed that PCL students were more likely to be stressed, anxious and depressed than B.Sc. and BNS due to COVID 19.

Conflict of Interest

The author has no conflict to interest to declare.

Ethical Approval: Approved

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