

ORIGINAL ARTICLE

Prevalence and correlates of Depression, Anxiety and Stress among Nursing StudentsChetanjit Baruah¹, Hiranya Saikia², Kajal Gupta³, Puneet Ohri⁴

¹Assistant Professor, Department of Community Medicine, Dhubri Medical College and Hospital, Dhubri, Assam; ²Lecturer of Statistics, Department of Community Medicine, Assam Medical College and Hospital, Dibrugarh, Assam; ³Professor, Department of Community Medicine, Shri Guru Ram Rai Institute Of Medical & Health Sciences, Dehradun, Uttarakhand; ⁴Professor and Head, Department of Community Medicine, Shri Guru Ram Rai Institute Of Medical & Health Sciences, Dehradun, Uttarakhand

Abstract	Introduction	Methodology	Results	Conclusion	References	Citation	Tables / Figures
--------------------------	------------------------------	-----------------------------	-------------------------	----------------------------	----------------------------	--------------------------	----------------------------------

Corresponding Author

Dr. Puneet Ohri, Professor and Head, Department of Community Medicine, Shri Guru Ram Rai Institute Of Medical & Health Sciences, Dehradun 248001, Uttarakhand
E Mail ID: puneetohri69@gmail.com

**Citation**

Baruah C, Saikia H, Gupta K, Ohri P. Prevalence and correlates of Depression, Anxiety and Stress among Nursing Students. Indian J Comm Health. 2022;34(2):259-264. <https://doi.org/10.47203/IJCH.2022.v34i02.021>

Source of Funding: Nil Conflict of Interest: None declared

Article Cycle

Received: 24/09/2021; Revision: 06/04/2022; Accepted: 22/05/2022; Published: 30/06/2022

This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

Abstract

Background: Nursing students experience significant amount of depression, anxiety and stress throughout their undergraduate education and there is limited evidence regarding magnitude of depression, anxiety and stress among them in India. **Aims & Objectives:** To assess the prevalence of depression, anxiety and stress and associated factors among nursing students. **Materials & Methods:** A web based cross sectional study was conducted among 214 nursing students of B.Sc. Nursing College, Dibrugarh in May 2021 using Google form containing structured questionnaire and DASS21 by convenience sampling. Logistic regression analysis was carried out to assess determinants of depression, anxiety and stress. **Results:** The prevalence of Depression, anxiety and stress was 55.1%, 63.1% and 29.9% respectively. On multiple regression analysis, mother's occupation of the students was found to be significant predictor for depression and anxiety, getting less vacation was found to be significant predictor for depression and stress, satisfaction with nursing profession as a significant predictor for depression and caste as a significant predictor for stress. **Conclusion:** A high prevalence of Depression, anxiety and stress was found among nursing students.

Keywords

Depression; Anxiety; Stress; Prevalence

Introduction

According to WHO mental health disorders are one of the leading causes of disability worldwide and about 615 million people worldwide suffer from common mental disorder such as Anxiety and Depression and as 1 in 5 people could be affected by Anxiety and Depression (1) In India, in 2017, 197.3 million people had mental disorders, out of which 45.7 million had depressive disorders and 44.9 million people had anxiety disorders. (2) National Mental Health Survey (2015-2016) reported the prevalence of common mental disorders in Assam as 5.3%. (3)

Nursing students during their course of study experience many stressful events like adjustment to new college environment, academic burden, pressure to perform well

academically, uncertain future, home sickness, residing in hostel etc. which may affect their academic and clinical performance, psychological well being and physical health. Previous studies conducted among nursing students have shown high rate of depression, anxiety and stress throughout the world. (4-10).

Due to sudden change in the education system and uncertainty about the future because of COVID 19 pandemic, they are experiencing various psychological problems. As there was paucity of data from this north eastern part of the country, the study was carried out.

Aims & Objectives

1) To assess the prevalence of Depression, anxiety and stress among nursing students.

- 2) To find the relationship between Depression, anxiety and stress among nursing students.
- 3) To identify the risk factors associated with Depression, anxiety and stress among nursing students.

Material & Methods

Study Area: B.Sc. Nursing College, Dibrugarh, Assam

Type of study: Web based Cross Sectional Study

Study Population: 1st, 2nd, 3rd & 4th year B.Sc. Nursing students

Study Period: May 2021

Sample size & Sampling technique: Total 214 students were included in the study by convenience sampling.

Inclusion criteria: Students who gave consent to participate in the study.

Exclusion criteria: Students who did not give consent to participate in the study.

Data Collection tool: Online structured questionnaire in English language designed on Google forms which consisted of 2 sections: First part consisted of Socio-demographic characteristics, Clinical factors (satisfaction with career choice, previous history of chronic illness, family history of chronic illness & mental health problems), Social factors (Parental conflict, financial problem, breakup from friend/loved one), Lifestyle factors (consumption of tobacco & alcohol, physical activity, average hours of sleep), academic profile of the students and second part consisted of standardized DASS 21 (11) tool to assess the mental status of the students.

Data Collection Method: Before the start of the study, permission was taken from Principal, B.Sc. Nursing College, Dibrugarh. First of all, an online session (zoom) was conducted among the students for orientation about the purpose of study and questionnaire. Then link of Google form questionnaire was created which was send to class representative of each academic year through social media and they were asked to share the link among their batch mates via their class WhatsApp group. On receiving and clicking the link of Google form students got auto directed to the information about the study and informed consent. Digital consent was obtained online from all the participants. After accepting to participate in the survey, students answered the questions and responses were recorded.

Operational Definitions

Stress, anxiety & depression: Those who had scored more than 14, 7 & 9 in DASS subscale were considered as having Stress, anxiety & depression.

Chronic medical illness: Those who had at least one chronic illness (Asthma, migraine, gastritis, diabetes, etc.) diagnosed before and currently on follow up.

Past mental illness: A respondent who was previously diagnosed with mental illness before and was treated or currently on treatment.

Adequate sleep: Those who reported sleeping 7 or more hours per night on regular basis. (12)

Socio-economic status: As per Modified B.G. Prasad socioeconomic classification scale 2020. (13)

Ethical Approval: Approval for study was obtained from the Principal BSc. College of Nursing, AMCH, Dibrugarh and digital consent from the students was obtained online after assuring confidentiality.

Data Analysis:

Descriptive statistics viz. frequency, percentage, mean and standard deviation were calculated to represent the data. Univariate analysis was done to identify the factors associated with Depression, Anxiety & Stress. Considering the variables whose p-values were found to < 0.25 in the univariate analysis, multiple logistic regression analyses were performed. The strength of association was measured by odds ratio (OR) at 95% confidence interval (CI). P-value < 0.05 was considered as statistically significant. Karl Pearson's Coefficient of correlation was used to study the correlation between Depressions, Anxiety & Stress. Data was downloaded in MS Excel spreadsheet and imported to SPSS 20 version for analysis.

Results

A total of 214 students participated in the study. The overall prevalence of Depression, anxiety and stress was 55.1%, 63.1% and 29.9% with mean stress, anxiety and depression scores of 12.5±6.8, 9.8 ±6.3 & 10.7 ±6.7 respectively. (Table 1)

The mean age of the students was 20.8±1.39 years with a range of 17 -24 years. Majority of students belonged to 21 to 23 years age group (62.1%), Hindu (78%) religion, General category (43.9%), nuclear family (91.6%), rural area (63.1%) and were staying in hostel (57%) respectively. As regard Socio-economic status, almost equal number of students belonged to Upper (48.8%) & Upper Middle (51.2%) respectively. Majority of the students reported self interest (80.8%) as the reason for choosing nursing education and were satisfied with nursing profession (84.1%). Majority of the students had no history of any chronic illness (90.7%), do not consume smokeless tobacco (93.5%) and alcohol (93.9%), had adequate sleep (68.7%). Less than half (48.1%) of students were involved in physical activity and had family history of chronic illness. Only (6.1%) of the students had family history of mental health problem. Only some of the students reported financial problem (34.6%), parental conflict (12.6%), conflict with roommate (19.2%) and break up from loved one (27.6%).

Significant positive correlation was found between anxiety and stress, anxiety and depression and stress and depression. (Table 2)

On univariate analysis, students belonging to general caste had three times higher chances of developing stress ($p < 0.05$) than students belonging to SC/ST category. Also students belonging to OBC/MOBC had 1.7 times more chances of developing stress ($p > 0.05$) than students belonging to SC/ST category. But Depression and anxiety

were not found to be significantly associated with socio-demographic variables. (Table 3)

On univariate analysis, depression was found to be associated with conflict with friend, fear of failure in examination, fear of future, getting less vacations, course selection, and satisfaction with nursing profession. Again, stress was found to be associated with conflict with friend, break up with loved one, course selection, satisfaction with nursing profession, fear of failure in examination, increased class work load and getting less vacations. However, no significant association was observed between anxiety and selected variables. (Table 4)

On multiple logistic regression analysis, mother's occupation, satisfaction with nursing profession and getting less vacations were found to be significantly associated with depression whereas age of the students and mothers occupation was found to be significantly associated with anxiety. Similarly caste and getting less vacation were found to be significantly associated with stress.

Discussion

Various studies have confirmed high prevalence of depression, anxiety and stress among nursing students worldwide. In our study out of 214 students, 22.9% had mild depression, 24.9% had moderate depression, 6.1% had severe depression and only 1.9% had extremely severe depression. Similar findings were reported by J H Tapariya (5) who found (23.3%) mild depression, (24.2%) moderate and (9.2%) severe depression among the students even they had use different tool for assessing depression but lower than the findings by Das BM (15) (26.8% mild & 26.8% moderate depression) and Telgote S et al (7) where (38.4%) of the students had moderate depression. Analogous study by Rathnayake S et al (8) reported higher prevalence of depression (16.3% severe & 15.2% extremely severe) as also by Basu M (10) (7.75% severe depression & 6.20% extremely severe) and Das BM (15) (8.7% severe & 5.4% extremely severe depression) than our study findings.

In our study, (16.8%) of the students had mild, (29.4%) had moderate level of anxiety which is almost similar to the findings by Das BM (15) (16.1% mild & 30.9% moderate) but lower than findings by J H Tapariya (4) who reported (26.2%) mild and (66.7%) moderate level of anxiety and higher than findings reported by Basu M (10) (14.73% mild & 19.38% moderate). In our study (7.5%) of students had severe anxiety which is higher than reported by J H Tapariya (4.2%) (4) but lower than reported by Basu M (17.83%) (10) and Das BM (19.5%) (15). This may be due to difference in the tool used for assessing anxiety by Basu M. In our study, (29.4%) of the students had moderate level of anxiety which is lower than findings by Telgote S et al (53.84%) (7) but higher than findings by Rathnayake S et al (21.7%) (8). In our study, (9.3%) of the students had extremely severe anxiety which is lower than findings by

Rathnayake S et al (16.3%) (8), Basu M (14.73%) (10) and Das BM (19.5%) (15). In our study, 12.1% of the students had mild stress which is higher than findings by Basu M (9.30%) (10) but lower than findings by Das DM (17.4%) (15).

In our study, 12.1% of the students had moderate stress, which is lower than findings by Telgote S et al (23%) (7) and Das DM (19.5%) (15). In our study, 5.1% of the students had severe stress which is lower than findings by Das DM (8.7%) (15). In our study, only 0.5% of the students had extremely severe stress which is almost similar to the findings by Das DM (1.3%) (15) but lower than findings reported by Rathnayake S et al (21.7%) (8).

In our study, (65.3%) of the students reported self interest as the reason for choosing nursing education which is contrary to the findings reported by Samson P (72.4%) (5), Konwar G (89.17%) (14) and Das BN (78.5%) (15).

In our study, (67.9%) of the students were satisfied with nursing profession as a career which is quite higher than findings by Rathnayake S et al (8) where only (2.2%) of the students were fully satisfied.

Conclusion

Majority of the students were suffering from anxiety and depression while one-third of students were suffering from stress. Risk factors which were responsible for both depression and stress among the students were conflict with friend, fear of failure in examination, getting less vacations, course selection and satisfaction with nursing profession.

Recommendation

Nursing students must be screened for mental disorders to identify at risk students and provide psychological interventions. Also nursing students should be given periodic psychological counseling.

Limitation of the study

Study was conducted among B.Sc. nursing students of one nursing college, so results cannot be generalized.

Relevance of the study

This study will help us to estimate the burden of stress, anxiety and depression among nursing students and factors associated in this part of country. Students at risk of developing mental disorders can be identified.

Authors Contribution

CB: Study Concept, design, data collection, data interpretation, manuscript writing. HS: Study design, Data interpretation, data analysis, statistical analysis. KG: Literature search, study design and drafting. PO: Study concept, data interpretation, review of manuscript and final approval.

Acknowledgement

We are thankful to the students of the college for their participation in the study.

References

- World Health Organization (2017). Depression: Fact sheet. Available at <http://www.who.int/mediacentre/news/releases/2016/depression-anxiety-treatment/en/>
- Sagar R et al. The burden of mental disorders across the States of India: The Global Burden of Disease Study 1990-2017. *The Lancet Psychiatry*. 2020;7(2): 148-161.
- Gururaj G et al. National Mental Health Survey, 2015-2016. Prevalence, pattern and outcome. NIMHANS Publication, Bengaluru, 129, 2016
- JH Tapariya Level of Stress, anxiety and depression among nursing students. *International Journal of Indian Psychology*, 2020;8(2):220-225 DOI:10.25215/0802.026
- Samson P. Role of Coping in Stress, Anxiety, Depression among Nursing students of Purbanchal University in Kathmandu. *J Nepal Health Res Counc*. 2019;17(3):325-330. doi:10.33314/jnhrc.v17i3.1843. PMID:31735926
- Shereen Mohamed Abo-EL yzeed Stress, Anxiety and Depression among Baccalaureate Nursing Students. *International Journal of Novel Research in Healthcare and Nursing*. 2018; 5(3):544-559.
- Telgote S, Jadhao A. Depression, anxiety and stress among government nursing college students in Akola. A college based stud. *J.Evolution Med.Dent.Sci* 2017; 6(90):6297-6300.
- Rathnayake S, Ekanayaka J. Depression, Anxiety and Stress among Undergraduate Nursing Student in a Public University in Sri Lanka. *Int J Caring Sciences*. 2016; 9(3):1020-1032.
- Yip PSF, Cheung T. Depression, Anxiety and symptoms of Stress among Baccalaureate Nursing Students in HongKong .A Cross-Sectional study. *Int J Environ Res Public Health*. 2016; 13(8):779-804.
- Basu M. Depression, Anxiety, Stress among nursing students of Kolkata: A Cross-Sectional study. *Journal of Preventive Medicine and Holistic Health*, July-December 2016; 2(2):54-60.
- Coker AO, Coker OO, Sanni D. Psychometric properties of the 21-item depression, anxiety, stress scale (DASS21). *African Res Rev* 2018;12 (2):135
- Watson NF, Badr MS, Belenky G, Bliwise DL, Buxton OM, Buysse D, et al. Recommended amount of sleep for a healthy adult: a joint consensus statement of the American Academy of sleep Medicine and Sleep Research Society. *SLEEP*. 2015;38(6):843-4. <https://doi.org/10.5664/jcsm.4758> .
- Debnath DJ, Kakkar R. Modified BG Prasad Socio-Economic Classification, Updated-2020; 32(1): 124-125
- Konwar G et al. A study to assess the relation between stress and coping among nursing students. *Journal of Preventive Medicine and Holistic Health* January-June 2019;5(1):48-51
- Das BN, Mohandas A, Syed S. Study of stress, anxiety, depression and coping strategies among nursing students in a tertiary care teaching hospital, South India. *Int J Community Med Public Health* 2021; 8:3400-5.

Tables

TABLE 1 DISTRIBUTION OF STUDENTS ACCORDING TO THEIR LEVEL OF DEPRESSION, ANXIETY & STRESS (N=214)

Grading	Depression	Anxiety	Stress
Normal	96 (44.9)	79 (36.9)	150 (70.1)
Mild	49 (22.9)	36 (16.8)	26 (12.1)
Moderate	52 (24.3)	63 (29.4)	26 (12.1)
Severe	13 (6.1)	16 (7.5)	11 (5.1)
Extremely Severe	04 (1.9)	20 (9.3)	01 (0.5)
Mean ± SD	10.7 ± 6.7	9.8 ± 6.3	12.5 ± 6.8

*Figure in parenthesis indicate percentage

TABLE 2 CORRELATION BETWEEN DEPRESSION, ANXIETY & STRESS AMONG THE STUDENTS (N=214)

	Anxiety	Stress	Depression
Anxiety	1	0.551*	0.496*
Stress	0.551*	1	0.647*
Depression	0.496*	0.647*	1

*Correlation is significant at 0.01 level.

TABLE 3 ASSOCIATION OF SOCIO-DEMOGRAPHIC VARIABLES WITH DEPRESSION, ANXIETY AND STRESS (N=214)

Variables	Depression			Anxiety			Stress		
	N (%)	Odds Ratio (95% CI)	p-value	N (%)	Odds Ratio (95% CI)	p-value	N (%)	Odds Ratio (95% CI)	p-value
Age (in years)									
≤ 20	39 (50.0)	1.386 (0.792-2.425)	0.757	55 (70.5)	0.597 (0.330-1.083)	0.106	22 (28.2)	1.137 (0.616-2.099)	0.757
> 20	79 (58.1)	Ref.	-	80 (58.8)	Ref.	-	42 (30.9)	Ref.	-
Place of living									
Home	49 (55.1)	1.006 (0.582-1.737)	0.293	52 (58.4)	1.406 (0.802-2.466)	0.253	23 (25.8)	1.401 (0.766-2.562)	0.293

Variables	Depression			Anxiety			Stress		
	N (%)	Odds Ratio (95% CI)	p-value	N (%)	Odds Ratio (95% CI)	p-value	N (%)	Odds Ratio (95% CI)	p-value
Hostel	69 (55.2)	Ref.	-	83 (66.4)	Ref.	-	41 (32.0)	Ref.	-
Residence									
Urban	41 (51.9)	0.813 (0.465-1.419)	0.757	50 (63.3)	1.014 (0.570-1.803)	1.000	25 (31.6)	1.140 (0.624-2.082)	0.757
Rural	77 (57.0)	Ref.	-	85 (63.0)	Ref.	-	39 (28.9)	Ref.	-
Caste									
General	56 (59.6)	1.677 (0.878-3.203)	0.117	57 (60.6)	0.847 (0.436-1.647)	0.625	37 (39.4)	3.010 (1.391-6.512)	0.005
OBC/ MOBC	33 (56.9)	1.502 (0.731-3.087)	0.268	38 (65.5)	1.045 (0.493-2.214)	0.909	16 (27.6)	1.766 (0.740-4.214)	0.200
SC/ST	29 (46.8)	Ref.	-	40 (64.5)	Ref.	-	11 (17.7)	Ref.	-
Fathers Occupation									
Service	80 (56.7)	0.828 (0.469-1.466)	0.432	89 (63.1)	0.995 (0.554-1.788)	1.000	45 (31.9)	0.751 (0.399-1.411)	0.432
Others	38 (52.1)	Ref.	-	46 (63.0)	Ref.	-	19 (26.0)	Ref.	-
Mothers Occupation									
Service	20 (45.5)	1.633 (0.838-3.182)	0.854	22 (50.0)	1.982 (1.013-3.879)	0.054	14 (31.8)	0.893 (0.437-1.825)	0.854
Housewife	98 (57.6)	Ref.	-	113 (66.5)	Ref.	-	50 (29.4)	Ref.	-
Social Class									
Upper	54 (52.9)	0.844 (0.492-1.447)	1.000	63 (61.8)	0.897 (0.515-1.564)	0.777	31 (30.4)	1.045 (0.582-1.878)	1.00
Upper Middle	64 (57.1)	Ref.	-	72 (64.3)	Ref.	-	33 (29.5)	Ref.	-
Type of Family									
Nuclear	110 (55.8)	1.422 (0.527-3.840)	0.599	121 (61.4)	0.341 (0.95-1.226)	0.116	60 (30.5)	1.423 (0.446-4.545)	0.599
Joint	8 (47.1)	Ref.	-	14 (82.4)	Ref.	-	4 (23.5)	Ref.	-

*Figure in parenthesis indicate percentage

TABLE 4 ASSOCIATION OF DIFFERENT VARIABLES WITH DEPRESSION, ANXIETY AND STRESS (N=214)

Variables	Depression			Anxiety			Stress		
	N (%)	Odds Ratio (95% CI)	p-value	N (%)	Odds Ratio (95% CI)	p-value	N (%)	Odds Ratio (95% CI)	p-value
Smokeless Tobacco	4 (28.6)	0.302 (0.092-0.995)	0.051	10 (71.4)	1.500 (0.454-4.952)	0.579	3 (21.4)	0.621 (0.167-2.307)	0.562
Alcohol	6 (46.2)	0.681 (0.21-2.099)	0.572	11 (84.6)	3.415 (0.737-15.83)	0.139	4 (30.8)	1.044 (0.310-3.523)	1.000
Physical Activity	51 (49.5)	0.644 (0.375-1.108)	0.131	66 (64.1)	1.086 (0.623-1.893)	0.779	28 (27.2)	0.778 (0.432-1.401)	0.456
Adequate Sleep	77 (52.4)	1.434 (0.796-2.582)	0.240	93 (63.3)	0.975 (0.536-1.774)	1.000	42 (28.6)	1.222 (0.656-2.279)	0.629
Chronic illness	12 (60)	1.245 (0.487-3.182)	0.814	12 (60)	0.866 (0.338-2.219)	0.180	7 (35)	1.294 (0.491-3.412)	0.613
F/H/O Mental illness	8 (61.5)	1.324	0.776	9 (69.2)	1.339	0.772	3 (23.1)	0.689	0.759

Variables	Depression			Anxiety			Stress		
	N (%)	Odds Ratio (95% CI)	p-value	N (%)	Odds Ratio (95% CI)	p-value	N (%)	Odds Ratio (95% CI)	p-value
		(0.419-0.186)			(0.339-4.500)			(0.183-2.590)	
Financial Problem	45 (60.8)	1.424 (0.803-2.525)	0.250	46 (62.2)	0.941 (0.526-1.685)	0.882	23 (31.1)	1.089 (0.590-2.009)	0.875
Parental Conflict	17 (63.0)	1.324 (0.419-4.186)	0.415	20 (74.1)	1.789 (0.720-4.443)	0.286	08 (29.6)	0.985 (0.407-2.383)	1.000
Conflict with friend	29 (70.7)	2.281 (1.093-4.761)	0.035	25 (61.0)	0.895 (0.444-1.802)	0.857	20 (48.8)	2.792 (1.385-5.631)	0.005
Break up from loved one	35 (59.3)	1.265 (0.689-2.323)	0.539	40 (67.8)	1.330 (0.705-2.508)	0.430	25 (42.4)	2.187 (1.164-4.111)	0.019
Self selection of Course	88 (50.9)	2.634 (1.241-5.590)	0.014	107 (61.8)	1.329 (0.643-2.745)	0.477	42 (24.3)	3.612 (1.784-7.312)	0.000
Satisfied with Nursing Career	89 (49.4)	5.930 (2.197-16.01)	0.000	113 (62.8)	1.087 (0.506-2.337)	0.850	46 (25.6)	3.277 (1.545-6.952)	0.002
Tension of examination	105 (56.8)	1.615 (0.735-3.551)	0.315	121 (65.4)	2.026 (0.920-4.458)	0.097	57 (30.8)	1.400 (0.566-3.463)	0.521
Fear of failure in examination	91 (60.7)	2.114 (1.166-3.830)	0.016	99 (66.0)	1.510 (0.830-2.747)	0.216	53 (35.3)	2.633 (1.268-5.466)	0.009
Increase class work	93 (58.1)	1.610 (0.866-2.944)	0.155	102 (63.7)	1.119 (0.593-2.112)	0.746	55 (34.4)	2.619 (1.193-5.751)	0.016
Getting less vacation	83 (68.0)	3.466 (1.965-6.113)	0.000	82 (67.2)	1.508 (0.861-2.641)	0.156	46 (37.7)	2.488 (1.323-4.681)	0.004
Fear of future	81 (60.4)	1.776 (1.015-3.108)	0.048	86 (64.2)	1.134 (0.646-2.008)	0.770	41 (30.6)	1.093 (0.595-2.066)	0.878
Lack of recreation	87 (58.4)	1.539 (0.857-2.764)	0.179	94 (63.1)	1 (0.547-1.830)	1.000	47 (31.5)	1.301 (0.678-2.498)	0.517

*Figure in parenthesis indicate percentage