

ORIGINAL ARTICLE

Epidemiology of stress among Nursing Undergraduate Students

Shikhar Singh¹, Shivender Kumar Singh², Manish Kumar Manar³, Sujita Kumar Kar⁴, Abhishek Gupta⁵, Prasant Bajpai⁶, Neha Sharma⁷

¹Junior resident, Department of Community Medicine and Public Health, King George's Medical University, Lucknow, Uttar Pradesh, ²Professor, Department of Community Medicine and Public Health, King George's Medical University, Lucknow, Uttar Pradesh; ³Associate Professor, Department of Community Medicine and Public Health, King George's Medical University, Lucknow, Uttar Pradesh; ⁴Associate Professor, Department of Psychiatry, King George's Medical University, Lucknow, Uttar Pradesh; ⁵Assistant Professor, TSM Medical College Lucknow, Uttar Pradesh; ⁶Department of Community Medicine, Uttar Pradesh University of Medical Sciences Saifai Etawah, Uttar Pradesh; ⁷Junior resident, Department of Community Medicine and Public Health, King George's Medical University, Lucknow, Uttar Pradesh

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

Corresponding Author

Address for Correspondence: Er. Manish Manar, Department of Community Medicine and Public Health, King George's Medical University, Lucknow - 226003, Uttar Pradesh
E Mail ID: manar.781@gmail.com



Citation

Singh S, Singh SK, Manar MK, Kar S, Gupta A, Bajpai P, Sharma N. Epidemiology of stress among Nursing Undergraduate Students. Indian J Comm Health. 2018; 30, 3: 233-238.

Source of Funding: Nil **Conflict of Interest:** None declared

Article Cycle

Received: 09/07/2018; **Revision:** 14/08/2018; **Accepted:** 11/09/2018; **Published:** 30/09/2018

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

Abstract

Background: Stress is a double-edged sword that can either invigorate or decrease the student's performance. Longer the duration of stress poorer the performance. Nursing students may develop feeling of inadequacy regarding the activities required during professional education which may lead to stress **Aims & Objectives:** To study the level of stress among undergraduate nursing students of Lucknow city and to determine the risk factors causing stress. **Material & Methods:** A cross-sectional study was conducted among 380 B.Sc. (Nursing) Students enrolled in government and private colleges of Lucknow city using semi-structured questionnaire and DASS 42 scale **Results:** 60 percent and 62 percent of total nursing student from government college and private nursing respectively were stressed. There was no statistical difference ($p=0.17$) between median stress score of two colleges. Predictor for stress was gender (odds ratio =3.41) **Conclusion:** The study showed high level of stress among the nursing students from government college and private college. Risk factors which were responsible for stress among students were gender, sharing of room, educational expenses, academic performance, mobile phone and harassment in college.

Keywords

Stress; Psychological; Nursing; Students

Introduction

Stress is a double-edged sword that can either invigorate or decrease the student's performance. With stress, initial improvement in performance may occur, but later the body and mind reach a "hump"

where fatigue sets in. With yet more stress, the body starts to lose coordination and the mind loses concentration. And if stress still continues to be applied, exhaustion sets in and sometimes it develops into pathological disorders. (1)

Chronic stress may lead to cardiovascular disease, hypertension, increase in blood sugar levels, metabolic syndrome, menstrual irregularity, erectile dysfunction, infertility, peptic ulcers, upper respiratory diseases due to decreased immunity, overeating, sleep disorders, loss of appetite, anxiety, depression and substance abuse. (2)

Nursing staff is the back bone for care that is provided to the patient in the hospital. They not only nurse the patient but also execute the orders of treating physician. The job of nursing staff is quite demanding and is very stressful. Due to the complexity of nursing education and dealing with human boundaries, nursing students may develop feelings of inadequacy regarding the activities required during professional education which may lead to stress. (3,4)

Few studies have documented the prevalence of stress among the BSc nursing students to and it varies according to geographical area. A study conducted in South India in the year 2016 showed the prevalence of severe stress was 7.5%. (5). In another study conducted in Maharashtra in the year 2011 showed that 70 percent of nursing students had stress. (6) A study on Nepalese nursing students was conducted in year 1996 to determined how they cope with the stressful events. The most frequently reported stressful event was interpersonal relationship (50%). Four stressful events identified were: interpersonal relationships, initial experiences, feeling helpless, and demeaning experiences. Eight categories of coping from students' description were problem-solving, accepting responsibility, seeking social support, self-control, tension reduction, avoidance, wishful thinking and negative feelings. The majority of students utilized the "seeking social support" category of coping. (7) A similar study published in 1988, conducted in United State of America over a period of two academic years found that highly depressive symptoms were reported by 55% of the sample. Most students experience an increase in burnout symptoms and an increase in frequency of alcohol use during their educational years. These behaviors were related to a lack of social support and external attribution style. In addition to education it is also important to consider the quality of life of the students during the years of nursing training. (8)

Aims & Objectives

To study the level of stress among undergraduate nursing students of Lucknow city and to determine the risk factors causing stress.

Material & Methods

Study Type: It was a cross-sectional study. **Study Population:** B.Sc. (Nursing) Students enrolled in government and private colleges. **Study Area:** All the B.Sc. (Nursing) colleges of Lucknow city. **Study Duration:** between June 2017 and September 2017. **Sampling Design:** Single stage simple random sampling was done to choose a government and a private nursing college from the list of colleges approved by the Nursing Council of India in Lucknow. All the students who were enrolled in the college were selected after taking permission from competent authorities of each college and no sample size was calculated. **Inclusion Criteria:** All the students who gave consent were included in the study. A self-administered, semi-structured questionnaire was used for data collection Data was collected regarding biosocial, financial, and other characteristics of students and for determining the level of stress. **Working Definition:** Stress was defined as score of more than 14 on stress sub part of DASS 42 (Depression, Anxiety, and Stress scale). (9) **Ethical Approval:** Ethical clearance was taken from institutional ethics committee of King George's Medical University UP, Lucknow. **Data Analysis:** Data was analyzed using SPSS, version 23.0 (IBM, Chicago, USA). Data was represented in median, Interquartile range for quantitative data, Frequencies and percentage for categorical variable were determined, proportions and cross tabs were used to present study results. students with chronic disease were excluded from the analysis. Mann Whitney U test was used to find out the statistically significant difference in median stress score. Binary logistic regression analysis was used to identify the predictors of stress in the student. A minimum 95% confidence interval or p-value <0.05 was considered as statistically significant

Results

Total 380 students (182 students from government college and 198 students from private) participated in the study, in the government college where only 2 batches were present maximum students (53.8%) were in I year while 46.2 percent were in the II year. while among the B.Sc. Nursing students from the

private nursing college 26.3 percent were of III year. Most of student in both government (73.6%) and in private (66.7%) were in the age group of 20-25. Both college had more than 70 percent of girls. 81.3 percent of students in government college were sharing room with someone, were as in private college 58.1 percent were sharing their room. Four students (2.2%) and 6 students (3.0%) in government and private college respectively had some known chronic disease hence they were excluded from the further analysis. (Table 1)

The median stress score among student was 16 (10-22) and 17 (11-22.75) in private and government nursing college respectively. The difference was not statistically significant among the college (p- value 0.17). (Figure 1)

60 percent of total nursing student from government college were stressed with majority of the students (23.0%) were having moderate stress, 62.0 percent of students from private nursing college were stressed with majority of the students (27.6%) were having moderate stress and 1.0 percent had extremely severe stress. (Figure 2 a & b)

As there was no statically significant difference in stress level between government and private college hence they were merged for regression analysis.

Total nine predictors were found to be statistically significant ($p < 0.05$) in univariate analysis and out of them 6 were statistically significant in multivariate analysis. Female student had 3.41 times higher risk (odds ratio) of developing stress than males. Students who were sharing their room had 1.78 times higher risk (odds ratio) of developing stress. Students who had trouble in paying educational expenses (66.9%), who felt that mobile phone hamper studies (76.5%) and the students those who were harassed in college (69.2%) they had higher chances of developing stress (AOR-1.81, 2.43 and 1.85 respectively). 32.4 percent of the students who were satisfied by their academic performance were less likely (odds ratio 0.55) to develop stress than those who were not. (Table 2)

Discussion

In the present study, it was observed that the median stress score among students of government nursing college was 16 (10-22), majority of students were stressed (60.0 %) and maximum students who were stressed, were in mild category (25.8%) there were no students who had extremely severe stress, among students of private nursing college median stress

score was 17 (11-22.75). Majority of students were stressed (62.0%) and maximum students who were stressed, were in moderate stress (27.6%) and minimum in extremely severe stress (1.0%). And there was no statistically significant difference between the mean score of stress between government and private nursing college. Singh, Abhishek, *et al.*, (2013) in there study showed that median stress score was 26 (22-34) this may be due to difference in the tool used for assessing stress.(10) Behere, Shashank P, *et al.*, (2013) in their study found out that about 70 present of nursing students had stress which was almost similar to our study, even when they had use different tool to assess the stress.(7) No significant difference in level of stress among government and private college which can be due to similarity in curriculum, social and economic factors.

In the present study, it was observed that Nursing students who were female had 3.41 times higher risk (odds ratio) of developing stress which may be due to higher number of girl students in the college, students who were sharing their room had 1.78 times higher risk (odds ratio) of developing stress. Students who had trouble in paying educational expenses, who felt that mobile phone hamper studies and the students those who were harassed in college they had 1.81, 2.43- and 1.85-times higher chance of developing stress respectively. Students who were satisfied by their academic performance were less likely (odds ratio 0.55) to develop stress.

Conclusion

This study showed high level of stress among the nursing students from government private and private college. Various risk factors which were responsible for stress among students were gender, sharing of room, educational expenses, academic performance, mobile phone and harassment in college.

Recommendation

Level of stress was high among the college students. To overcome it, regular weekly/monthly counselling sessions by psychologist/psychiatrist should be organized. Personal counselling sessions for students should be provided if required.

Limitation of the study

There are few limitations in present study. Firstly, there might be Social acceptability/ desirability bias: Some subjects might have exaggerated or

understated their responses or denied that they engage in embarrassing or undesirable activities. Secondly few extremely stressed students might not be present in the college due their condition

Relevance of the study

The current study creates knowledge about prevalence and risk factors of stress among undergraduate nursing students. It will further help teachers, college administration, and policy makers in reducing the stress among undergraduate students

Authors Contribution

All authors have contributed equally in the study.

References

1. Cestari VRF, Barbosa IV, Florêncio RS, Pessoa VLM de P, Moreira TMM, Cestari VRF, *et al*. Stress in nursing students: study on sociodemographic and academic vulnerabilities [Internet]. 2017Apr [cited 2018 Jul 4];30(2):190–6. Available from: http://www.scielo.br/pdf/ape/v30n2/en_1982-0194-ape-30-02-0190.pdf
2. Schneiderman N, Ironson G, Siegel SD. STRESS AND HEALTH: Psychological, Behavioral, and Biological Determinants. October. 2008;(Lacey 1967):1–19.
3. Domingues Hirsch CI, Luiz Devos Barlem EI, Karine de Almeida LI, Geri Tomaschewski-Barlem JI, Beletti Figueira AI, Lerch Lunardi VI, *et al*. Coping strategies of nursing students for dealing with university stress. 2015 [cited 2018

Jul 4];68(5):501–9. Available from: http://www.scielo.br/pdf/reben/v68n5/en_0034-7167-reben-68-05-0783.pdf

4. Ratanasiripong P, Ratanasiripong N, Kathalae D. Biofeedback Intervention for Stress and Anxiety among Nursing Students: A Randomized Controlled Trial. ISRN Nurs. 2012;2012:827972. doi: 10.5402/2012/827972. Epub 2012 Jun 28. PubMed PMID: 22811932; PubMed Central PMCID: PMC3395228. [PubMed]
5. Jilmy M, Jose A. A Descriptive Study to Assess the Level and Factors Contributing to Stress among the Nursing Students of Selected Educational Institute. Int J Sci Res. 2016;5(9):1482–4.
6. Behere SP, Yadav R, Behere PB. A comparative study of stress among students of medicine, engineering, and nursing. Indian J Psychol Med. 2011 Jul;33(2):145-8. doi: 10.4103/0253-7176.92064. PubMed PMID: 22345838; PubMed Central PMCID: PMC3271488. [PubMed]
7. Mahat G. Stress and coping: first-year Nepalese nursing students in clinical settings. J Nurs Educ. 1996 Apr;35(4):163-9. PubMed PMID: 8830130. [PubMed]
8. Haack MR. Stress and impairment among nursing students. Res Nurs Health. 1988 Apr;11(2):125-34. PubMed PMID: 3363176. [PubMed]
9. Lovibond SH, Lovibond PF. Manual for the Depression Anxiety Stress Scales. Vol. 56, Psychology Foundation of Australia. 1995. 42 p.
10. Singh A, Chopra M, Adiba S, *et al*. A descriptive study of perceived stress among the North Indian nursing undergraduate students. Iranian Journal of Nursing and Midwifery Research. 2013;18(4):340-342

Tables

TABLE 1 BIO-SOCIAL CHARACTERISTICS

Characteristics		B.Sc. (Nursing)	
		Govt. (N=182) n [%]	Pvt. (N=198) n [%]
Year In college	I	98 [53.8]	49 [24.7]
	II	84 [46.2]	50 [25.3]
	III	0 [0.0]	52 [26.3]
	IV	0 [0.0]	47[23.7]
Age Group (years)	<20	40 [22.0]	33 [16.7]
	20 - 25	134 [73.6]	132 [66.7]
	≥25	8 [4.4]	13 [6.6]
	Didn't share	0 [0.0]	20 [10.1]
Sex	Female	128 [70.3]	146 [73.7]
	Male	54 [29.7]	52 [26.3]
Religion	Hindu	167 [91.8]	163 [82.3]
	Muslim	9 [4.9]	26 [13.1]
	Christian	6 [3.3]	8 [4.0]
	Sikh	0 [0.0]	1 [0.5]
Social Group	SC	41[22.5]	28 [14.1]
	ST	4 [2.2]	0 [0.0]
	OBC	97 [53.3]	91[46.0]
	Unreserved	40 [22.0]	74 [37.4]
	Didn't share	0 [0.0]	5 [2.5]

Socio-Economic Status#	I	72 [39.6]	58 [29.3]
	II	52 [28.6]	50 [25.3]
	III	12 [6.6]	36 [18.2]
	IV	23 [12.6]	26 [13.1]
	V	17 [9.3]	13 [6.6]
	Did not share	6 [3.3]	15 [7.6]
Marital Status	Unmarried	182 [100]	183 [92.4]
	Married	0 [0.0]	15 [7.6]
Sharing of Room	yes	148 [81.3]	115 [58.1]
	No	34 [18.7]	83 [41.9]
Any Chronic Disease	Yes	4 [2.2]	6 [3.0]
	No	111 [61.0]	149 [75.3]
	Didn't Answer	67 [36.8]	43 [21.7]
Accident/Acute Illness	Yes	5 [2.7]	5 [2.5]
	No	111 [61.0]	150 [75.8]
	Didn't Answer	66 [36.3]	43 [21.7]

TABLE 2 MULTILOGISTIC REGRESSION ANALYSIS OF PREDICTORS FOR STRESS IN B.SC. NURSING STUDENTS

Variable	Univariate Analysis			p value	Multivariate Analysis			p value
	Odds Ratio (OR)	95% CI			Adjusted Odds Ratio (AOR)	95% CI		
		Lower Limit	Upper Limit			Lower Limit	Upper Limit	
Gender								
Female	2.80	1.75	4.45	<0.001	3.41	2.00	5.81	<0.001
Male	Reference							
Sharing of Room								
Yes	1.75	1.12	2.74	0.014	1.78	1.07	2.97	0.027
No	Reference							
Trouble in Paying Educational Expenses								
Yes	1.61	1.06	2.46	0.026	1.81	1.12	2.92	0.015
No	Reference							
Insufficient Pocket Money								
Yes	1.67	1.01	2.74	0.042	-	-	-	-
No	Reference							
Unsatisfactory Lectures (boring, confusing)								
Yes	1.89	1.22	2.92	0.004	-	-	-	-
No	Reference							
Satisfied with Academic Performance								
Mostly/always	0.54	0.36	0.83	0.005	0.55	0.34	0.89	0.015
Sometimes/Never	Reference							
Perception About Difficulty in Getting Job of Choice								
DIFFICULT	1.75	1.13	2.70	0.011	-	-	-	-
EASY	Reference							
Mobile Phone Hampering Studies								
Mostly/always	2.64	1.57	4.42	<0.001	2.43	1.37	4.28	0.002
Sometimes/Never	Reference							
Harassed in College								
Yes	1.70	1.06	2.71	0.025	1.85	1.08	3.15	0.024
No	Reference							

Figures

FIGURE 1 MEDIAN SCORE OF STRESS ACCORDING NURSING COLLEGE

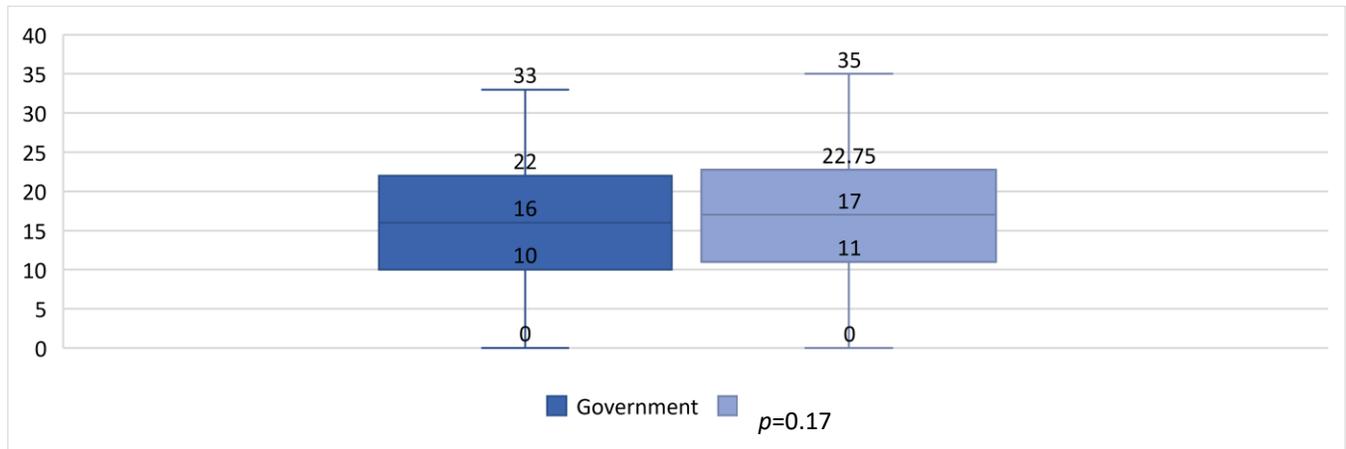


FIGURE 2A: LEVEL OF STRESS IN GOVERNMENT COLLEGE

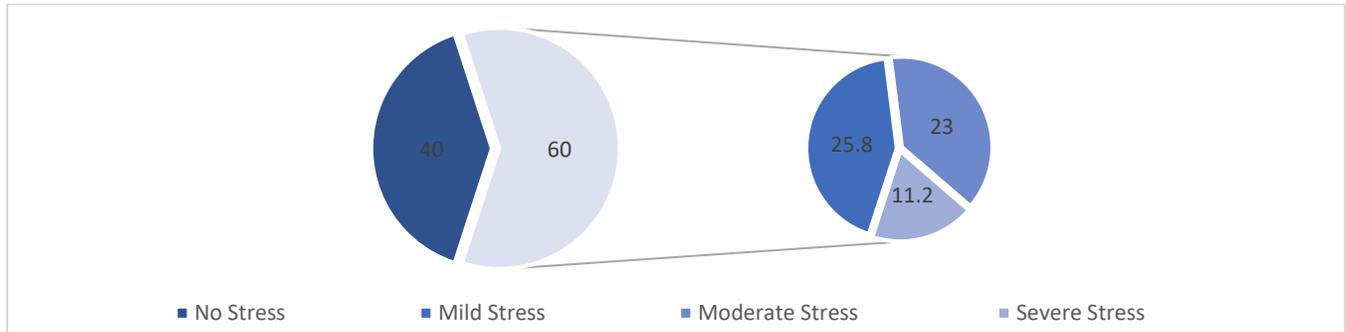


FIGURE 2B: LEVEL OF STRESS IN PRIVATE COLLEGE

