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Depression, Anxiety, Stress among nursing students of Kolkata: a cross sectional study

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Abstract

Introduction: Globally the Lifetime prevalence of depression, anxiety, and stress among adolescents and young adults are estimated to range from 5% to 70%.

Objectives: To find out the prevalence of Depression, Anxiety and Stress among Nursing students of a tertiary care teaching institution of Kolkata.

Methods: An Institution based observational descriptive cross sectional study was carried out at School of Nursing of a tertiary care Government teaching hospital of Kolkata from April 2016 to May among 129 students using DASS 21 point scale. Data were analyzed by SPSS 23 using percentages.

Results: About 33.33% of the students suffered from moderate to extreme depression; 56.59% had moderate to extreme levels anxiety and 23.26% experienced moderate to extreme levels of stress.

Conclusions: Results of this study will help to better understanding of stress, anxiety and depression among nursing students so as to assist them to promote the quality of clinical practice.

Keywords: Nursing students, Depression, Anxiety, Stress.

Introduction

Anxiety and depression are common psychological disorders throughout the globe. Both conditions have been association with stressful environment. Moreover, depression often comes with symptoms of anxiety.(1)

Worldwide, an estimated 350 million people of all ages suffer from depression. Over 8,00,000 people die due to suicide from depression every year.(2) The World Mental Health Survey conducted in 17 countries found that on an average about 1 in 20 people reported an episode of depression in the previous year.(3)

Globally the Lifetime prevalence of depression, anxiety, and stress among adolescents and young adults are estimated to range from 5% to 70%.(3) Various studies around the globe have documented that the lifetime prevalence of depression by the end of adolescence is about 20% and the point prevalence of significant depressive symptoms is around 10%.(4,5) Likewise, there are wide variations in prevalence of anxiety disorders reported.(6) Thus, an estimate of prevalence for any anxiety disorder in young adults appears to be 5% to 10%.(7) A study from a neighbouring country of India sharing a similar socio cultural environment reported a very high prevalence of combined depression & anxiety among medical students in Karachi(70%).(8)

Women experience depression at twice the rate of men. This 2:1 ratio exists regardless of racial or ethnic background or economic status. Prevalence estimates of anxiety disorders are generally higher in developed countries than in developing countries. Overall, one in seven people (15 per cent) in high-income countries get depression over their lifetime, compared with one in nine (11 per cent) in middle- and low-income countries. In France, Netherlands and America, more than 30% of people suffers from a major depressive episode, compared with 12 per cent in China, according to World Health Organisation. There are exceptions to this rule. India recorded the highest rate of major depression in the world, about 36%. According to a study conducted by the global health agency of WHO, chances of an individual developing an episode of depression during his/her lifetime is 9% in India. As per WHO, the average age of depression in India is 31.9 years. One of every four Indian is affected by anxiety disorders while 10% suffer from depression.(9)

There is considerable evidence that Depression Anxiety and Stress are higher in nursing students and these rates continue to remain elevated when these students become nurses in future. Nursing students are the valuable human resource because they play main role in providing patient care. The transition from middle childhood to adolescence, staying away from home, academic pressure, strenuous professional training etc. represents a confluence on their social, academic, cognitive, physiological and physical state. Such psychological distress among them leads to less productivity, reduced quality of life, learning difficulties and may negatively affect patient care.

Though there are several studies about depression among nursing students in abroad; studies from India on the epidemiology of psychiatric disorders among nursing students are rare. With this background the present study was carried out to find out the prevalence of Depression, Anxiety and Stress among Nursing

students of a tertiary care teaching institution of Kolkata by using DASS Scale.

Materials and Methods

Type of study, study design, place of study& study period: An Institution based observational descriptive study; cross sectional in design; carried out at School of Nursing of a tertiary care Government teaching hospital of Kolkata, West Bengal, India which was selected purposively for feasibility factors; for a period of 1 month, from April 2016 to May 2016.

Study population: Were all nursing students enrolled in that School of Nursing.

Inclusion criteria: Nursing students of all ages, who were present on the scheduled dates of data collection and gave informed written consent to participate in the study.

Exclusion criteria: Long absentees; & seriously ill.

Study tools: A pre designed pre tested self-administered structured anonymous questionnaire, Depression Anxiety Stress Scale (DASS) scale. It was pretested among 15 students who were not included in the sample size. The validity of the DASS scale was widely documented in different countries.

Study variables: **Independent variables**: Age, Religion, Caste, Education before admission to the course, Socio-economic status, Residence, Type of Family, Addiction, Systemic illness, Education and Occupation of the Parents.

Dependent variables: Depression, Anxiety and Stress based on DASS Scale.

Sample size & Sampling technique: 129 nursing students were selected by non-random convenient sampling method.

Methods of data collection: Before filling the questionnaire, the study population were explained about the purpose and nature of the study; their anonymity & confidentiality were ensured; then their informed written consent were taken; and questionnaire were administered to get filled by themselves completely and truthfully. If a designated student could not be contacted or was not cooperative during the three separate visits, the subject was considered as a non-respondent.

Data analysis: Data were entered in Microsoft Office Excel 2010 (Microsoft Corp, Redmond, WA, USA), and analyzed with Statistical Package for the Social Sciences Version 23.0 for the Windows platform (SPSS Inc., Chicago, IL, USA) & Epi-info 6.04d (Centres for Disease Control and Prevention, Atlanta, GA, USA, 2001) and expressed as percentages.

Operational definitions

A. Socio economic status (SES): As per Modified B.G. Prasad socioeconomic classification scale, 2015.

SES	Per Capita Monthly Income(PCMI)
Upper	>=5775
Upper middle	2887-5774
Lower middle	1733-2886
Upper lower	866-1732
Lower	<866

B. Addiction: Compulsive used for and use of a habit-forming substance (such as any drug or alcohol) characterized by tolerance and well-defined physiological symptoms.

C. Psychological stress: A state of mental or emotional strain or tension resulting from adverse or demanding circumstances.

D. Depression: Depression is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration.[1]

E. Anxiety disorders: Anxiety is an emotion characterized by feelings of tension, worried thoughts and physical manifestations like increased blood pressure.

F. DASS Scale: The DASS is a 42-item self-report instrument designed to measure the three related negative emotional states of depression, anxiety and tension/stress; but we have used DASS 21response form (short version of the scales) for convenience(English version in MS Word format). This reliable psychological instrument has 21 items in three domains. Each domain comprises of seven items assessing three dimensions of mental health symptoms: depression, anxiety and stress. Respondents were required to indicate the presence of these symptom(s) over the past week on a four-point Likert scale scoring from 0 to 3 (0: did not apply at all over the last week, 1: applied to some degree, or some of the time; 2: applied a considerable degree, or a good part of time; 3: applied very much or most of the time). The more severe the symptoms in each dimension, the higher the subscale scores. In our study, scores from each dimension were summed up and categorized as "normal", "mild", "moderate", "severe" and "extremely severe" according to the DASS manual. Gamma coefficients that represent the loading of each scale on the overall factor (total score) are 0.71 for depression, 0.86 for anxiety, and 0.88 for stress. Reliability of the 3 scales is considered adequate and test-retest reliability is likewise considered adequate with 0.71 for depression, 0.79 for anxiety, and 0.81 for stress.[10a,10b]

Scoring the DASS: The scale to which each item belongs is indicated by the letters D (Depression), A (Anxiety) and S (Stress). For each scale (D, A & S) sum the scores for identified items. Because the DASS 21 is a short form version of the DASS (the Long Form has 42 items), the final score of each item groups

(Depression, Anxiety and Stress) needs to be multiplied by two (x2).

Interpreting the DASS: Once multiplied by 2, each score can now be transferred to the DASS profile sheet, enabling comparisons to be made between the three scales and also giving percentile rankings and severity labels.

Table 1: DASS Severity Ratings

DASS 21 Score

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

DASS21 *Name:* *Date:*

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all-**NEVER**

1 Applied to me to some degree, or some of the time-**SOMETIMES**

2 Applied to me to a considerable degree, or a good part of time-**OFTEN**

3 Applied to me very much, or most of the time-**ALMOST ALWAYS**

		N	S	O	AA	D	A	S
1	I found it hard to wind down	0	1	2	3			
2	I was aware of dryness of my mouth	0	1	2	3			
3	I couldn't seem to experience any positive feeling at all	0	1	2	3			
4	I experienced breathing difficulty (e.g., excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3			
5	I found it difficult to work up the initiative to do things	0	1	2	3			
6	I tended to over-react to situations	0	1	2	3			
7	I experienced trembling (e.g., in the hands)	0	1	2	3			
8	I felt that I was using a lot of nervous energy	0	1	2	3			
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3			
10	I felt that I had nothing to look forward to	0	1	2	3			
11	I found myself getting agitated	0	1	2	3			
12	I found it difficult to relax	0	1	2	3			
13	I felt down-hearted and blue	0	1	2	3			
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3			
15	I felt I was close to panic	0	1	2	3			
16	I was unable to become enthusiastic about anything	0	1	2	3			
17	I felt I wasn't worth much as a person	0	1	2	3			
18	I felt that I was rather touchy	0	1	2	3			
19	I was aware of the action of my heart in the absence of physical exertion (e.g., sense of heart rate increase, heart missing a beat)	0	1	2	3			
20	I felt scared without any good reason	0	1	2	3			
21	I felt that life was meaningless	0	1	2	3			
Total								

Results

A total of 129 nursing students participated in the present study. Thus the response rate was 64.5%. **Table 2** revealed socio demographic characteristics of the study population. Their age ranged between 18 to 24 years; with mean age and standard deviation was 21 years and 0.75 years respectively; majority (60.46%) of the students fall in the age group of 20-22 years; 87.6% were Hindus and rest 12.4% were Muslims by religion; 44.19% belonged to General caste; a large number (87%) were from rural areas; 68% came from nuclear families; more than half (55.04%) had passed Higher Secondary before joining the nursing course; 27.13% were pursuing graduation while 17.83% had completed graduation before joining; majority of the students belonged to Upper lower class (41.86%) as per Modified BG Prasad Scale March 2015; about 30.2% of the fathers were graduate in comparison to only 10.85% of mothers; 40.30% of the fathers had income from jobs other than service/business whereas 80.6% mothers were Home-makers; none of the Students had any addiction; and no student had any chronic physical illness except one who was diagnosed with lump in the breast 3 months ago & was under treatment.

Table 2: Distribution of the study population according to socio demographic variables (N=129)

Variables	Number(n)	Percentage (%)
Age group (in years)		
18-20	18	13.95
20-22	78	60.46
22-24	33	25.58
Religion		
Hindu		87.6
Muslim		12.4
Caste		
General	57	
SC	35	
ST	29	
OBC	09	
Residence		
Urban		13
Rural		87
Type of family		
Nuclear		68.00
Joint		32.00
SES		
Upper	12	
Upper middle	20	
Lower middle	25	
Upper lower	54	
Lower	17	
Father's education		
Primary	27	
Middle school	09	
Secondary	10	
Higher secondary	27	
Graduate	39	
Mother's education		
Primary	44	
Middle school	04	
Secondary	31	
Higher secondary	25	
Graduate	14	
Father's occupation		
Service	29	
Business	48	
Others	52	
Mother's occupation		
Home maker	104	
Service	21	
Others	04	
Total	129	100.00

About one third (33.33%) of the students suffered from moderate to extreme depression; whereas more than half (56.59%) had moderate to extreme levels anxiety. However one fifth (23.26%) of the study population experienced moderate to extreme levels of stress in their daily routine as per DASS scale [**Table 3].**

Table 3: Distribution of the study population as per severity of depression, anxiety and stress (N=129)

Depression	Number (n)	Percentage (%)
Normal	67	51.94
Mild	19	14.73
Moderate	25	19.38
Severe	10	07.75
Extremely severe	08	06.20
Anxiety		
Normal	45	34.88
Mild	11	08.53
Moderate	31	24.03
Severe	23	17.83
Extremely severe	19	14.73
Stress		
Normal	87	67.44
Mild	12	09.30
Moderate	19	14.73
Severe	10	07.75
Extremely severe	01	00.78
Total	129	100.00

Discussion

In the present study 33.33% of the nursing students suffered from moderate to extreme depression which was similar to a study by Shamsuddin et al among Malaysian university students (37.2%);[11] by Al Gelban among Saudi adolescent school boys (38.2%);[12] by Rodrigo at Sri Lanka among adolescent

students(36%);[13] Cheung et al among Hong Kong nurses(35.8%);[14] and Manpreet et al at Punjab among Postgraduate Nursing students(38%).[15]

Our prevalence estimates of depression came in lower than study by Papazisis et al at Greece among nursing students (52.4%);[16] Iqbal et al at Bhubaneswar among undergraduate medical students (51.35);[17] Baviskar et al at Ahmednagar, Maharashtra among arts, commerce & science junior college students (75.9%)[18] and Chatterjee et al in an Indian government college of Burdwan, West Bengal among nursing students(63.9%).[19]

However it was higher than study by Sahoo et al among various college students within Ranchi town limits(18.5%);[3] Cheung et al at Hong Kong among nursing students(24.3%);[20] Arslan et al among Turkish University students (21.8%);[21] Eisenberg et al among American university students (15.6% for undergraduates &13.0% for graduate students);[22] Bayram et al among Turkey university students (27.1%);[23] and Rao et al among industrial workers at Bangalore where none of the workers had a positive score for depression.[24]

The prevalence of anxiety of our study was 56.59% which was almost in line with Malayasia(63%);[11] Punjab(55%)[15] and Bhubaneswar(66.9%).[17] In contrast it was lower than Greece(71.8%);[16] and higher than Ranchi (24.4%);[3] Saudi Arab(48.9%);[12] Sri Lanka (28%);[13] Hong Kong(39.9%);[14] Hong Kong (37.3%);[20] Turkey(47.1%);[21] and Bangalore(36%).[24]

This study demonstrated that the prevalence of stress was 23.26% which was corroborative with the findings by Sahoo et al (20%);[3] Shamsuddin et al (23.75);[11] Cheung et al(20%)[14]; and Bayram et al(27%).[23] On the contrary it was lower than study by Al-Gelban(35.5%);[12] Manpreet et al (35%);[15] Papazisis et al (42.4%);[16] Iqbal et al (53%);[17] Cheung et al(41.8%);[20] and higher than Rao et al(18%).[24]

The wide variations that are noted among the various studies, both within India and the world, are due to the different definitions of depression, anxiety and stress used by the studies and also due to use of different scales.

Like other studies the present study also had several limitations. First of all, it was a cross-sectional, institution-based study. Secondly, as the questionnaire was filled by the study population, some information might not be correct. Third, even after repeated data collection, about 35.5% of the students could not be approached for the study. Moreover non-random convenient sampling method was used. Last but not the least, data have taken from one nursing school only. So, it cannot be generalized.

Conclusions

The problem of depression, anxiety and stress were high among nursing students in our study. These results may help to better understanding of the phenomena of stress, anxiety and depression among nursing students. The statistics also help nursing educators to understand the difficulties of nursing students and assist them to promote the quality of clinical practice.

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