Research Article

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Stress, Anxiety and Depression in Dental Students of Bhopal: A Questionnaire Survey

Tiwari Pushpa[1*] Mittal Manoj[2] Chaturvedi Shailendra[3] Singh Alankrita[4] Sharma Palak[5] Singh Ritunja[6]

[1]PG Student, Department of Periodontology, Bhabha College of Dental Sciences, Bhopal, MP, India.
[2]Principal Head and Guide, Department of Periodontology, Bhabha College of Dental Sciences, Bhopal, MP, India.
[3]Professor and Head, Department of Periodontology, New Horizon Dental College and Research Institute, Bilaspur, Chhattisgarh, India.
[4]PG Student, Department of Periodontology, Bhabha College of Dental Sciences, Bhopal, MP, India.
[5]PG Student, Department of Periodontology, New Horizon Dental College and Research Institute, Bilaspur, Chhattisgarh, India.
[6]PG Student, Department of Periodontology, New Horizon Dental College and Research Institute, Bilaspur, Chhattisgarh, India.

ABSTRACT

Background: Numerous studies examining stress in dental students have revealed a significant increase in stress that intensifies with student's year of study. In recent years stress, depression and anxiety have afflicted dental students at alarming rates. According to latest center for collegiate mental health report, stress, depression and anxiety are top reasons that college students seek counselling. Acc. to several studies dental students shows symptoms of moderate or severe depression, which suggest that a need exists for mental healthcare services for dental students.

Methods and Material: It is a questionnaire-based study which held between February-March 2019.We included dental students from 2nd yrs to internship. Eligible participants surveyed via a self-reported questionnaire that includes the validated DASS-21 scale as the assessment tool and questions about demographic characteristics and methods for managing stress.

Results: Abnormal levels of depression, anxiety and stress were identified in 47.4%, 71.0% and 53.4% of the study participants, respectively.

Conclusions: This study concluded that anxiety levels were highest among dental students followed by stress & depression & need mental health care services.

Keywords: Stress, anxiety, depression, dental student.

INTRODUCTION

Stress has now been entrenched in our day to day life. Stress as coined by **Hance Seley** in the early 1930s, is a bio psychosocial model that refers to consequence of failure to respond adequately to mental, emotional and physical demands whether actual or imagined **(Seley 1982)**[1].

The dental undergraduate course has often been described as one of the longest and most demanding of courses. Studies have observed higher levels of stress among dental students than in the general population.[2] A large body of literature examining stress in undergraduate dental students has revealed a significant increase in stress that intensifies with students' year of study.[3] It has been reported that dental students express considerable stress symptoms during their training and that they are more anxious than the general population, showing higher levels of depression, obsessive-

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*Correspondence Dr. Tiwari Pushpa.
Department of Periodontology, Bhabha College of Dental Sciences, Bhopal, MP, India.
Email: sweetytiwari2.in@gmail.com

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compulsive disorders, and interpersonal sensitivity than age-matched norms.[4]

The depressed students may show symptoms such as reduced concentration, loss of interest, loss of energy and disorder in sleep pattern, which could negatively affect students' school performance.[5] The World Health Organization defines depression as "a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite and feelings of tiredness and poor concentration. It can be long-lasting or recurrent, substantially impairing a person's ability to function at work, school or cope with daily life".[6]

Among dental students it has been demonstrated that final-year students have a more realistic view of the dental profession than fresh entrants. In Saudi Arabia, a number of studies have assessed levels of stress among dental students and related stressors, and the most commonly cited stressors are gender, year of study, marital status, first choice of admission, financial problems, living arrangement, examinations and grades, workload, and patients.[7-11]

Anxiety is associated with autonomic arousal, skeletal muscle effects, and subjective experience of an anxious affect and it is defined by the American Psychological Association as an "emotion characterized by feelings of tension, worried thoughts and physical changes such as increased blood pressure".[12]

Despite their interrelationship, anxiety and depression in dental students have not been explored as frequently as stress.[13] Previous studies have implemented specific tools designed to evaluate the construct of stress only, such as the commonly used Dental Environmental Stress (DES) Scale.[14] To assess psychological well-being, tools such as the Beck Depression Inventory (BDI),[15, 16] the Maslach Burnout Inventory,[17] the Cambridge Depersonalization Scale[18], the Hospital Anxiety and Depression Scale[18], the Spielberger State-Trait Anxiety Inventory[16] and the Self-Rating Depression Scale[19] have been applied independently or in combination. Thus, it would be beneficial to examine depression, anxiety, and stress using one tool rather than multiple assessments. The Depression, Anxiety and Stress Scale (DASS-21) measure the three dimensions of these psychological conditions in a single, concise and comprehensive scale. Our aim was to measure the levels of depression, anxiety and stress in dental students at dental colleges of Bhopal using the DASS-21 and to investigate the level of stress, anxiety and depression of dental students.

MATERIALS AND METHODS

Study design and participants

This cross-sectional study was conducted at the Bhabha Dental college in Bhopal city, India, during February & March 2019. All second year to internship undergraduate dental students were eligible to participate. Ethical approval was obtained from the Ethics Committee of the College of BCDS /1EC/2020/1372. The questionnaire was completed by 400 students.

Study Tool

The section of the questionnaire contained the 21 items from the short-form version of the DASS. The DASS was developed by Lovibond and Lovibond21 to assess the core symptoms of depression, anxiety and stress and has also been used to evaluate patient response to treatment. The DASS has demonstrated satisfactory psychometric properties and is comparable to other reliable scales.[20] The DASS-21 is the short-form version of the original self reported 42-item questionnaire and has demonstrated good to excellent internal consistency .[21] Eligible participants surveyed via a self-reported questionnaire that includes the validated DASS-21 scale as the assessment tool and questions about demographic characteristics and methods for managing stress. It includes three self-reported scales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three scales contains 7 items scored on a Likert scale from 0-3 (0: Did not apply to me at all, 1: Applied to me to some degree or some of the time, 2: Applied to me to a considerable degree or a good part of the time, 3: Applied to me very much or most of the time). Depression, anxiety and stress scores are calculated by summing the scores of the relevant items. Because the DASS-21 is a short-form version of the DASS (42 items), the final score for each sub-scale is multiplied by two and evaluated

according to its severity rating index. The study was piloted with 20 students from other dental colleges.

Data collection methods and procedures:

Class leaders were contacted and a 10-minute meeting after a lecture was arranged for each student year. One of the authors briefly explained the project and hard copies of the questionnaires were then distributed. Participation was voluntary, the purpose of the research was stated on the first page of the questionnaire, confidentiality and anonymity were assured, and written informed consent was obtained from all participants.

RESULTS

The study result tries to find the level of Stress, Depression and Anxiety among students of dental colleges. Total 500 students were included in the survey. The female students were 68.4% while the male students were 31.6%. Majority of the students were single (94.6%) and is not having any financial responsibilities (89.6%). A high percentage of patients is having satisfactory relationship with their peer students (81.8%), Faculties (66.4%) and is satisfied with their respective colleges (61.8%). (Table 1)

Table 1: Demographics of the sample population

Predictors	Categories	No of Students	Percentage
Gender	Male	158	31.6
	Female	342	68.4
Marital Status	Single	473	94.6
	Married	27	5.4
	Widowed	0	0.0
	Divorced	0	0.0
Year of study	2nd year	131	26.2
	3rd year	129	25.8
	4th year	138	27.6
	Intern	102	20.4
Financial Responsibilities	No	448	89.6
	Yes	52	10.4
Satisfaction with peer relationships	Satisfied	409	81.8
	Dissatisfied	32	6.4
	Neither	59	11.8

Abnormal levels of depression, anxiety and stress were observed in 47.4%, 71.0% and 53.4 % of the respondents, respectively (Table 2). Alarmingly, severe and extremely severe scores for depression, anxiety, and stress were reported in 12.6%, 38.0% and 24.4% of students, respectively. (Table 2)The mean total scores for the respondents were 12.24±8.89 for depression, 12.16±9.98 for anxiety and 18.69±10.11 for stress. (Graph 1)

There were statistically significant effect of years in which student is studying, satisfactory relationship with peer and faculty, Complete Satisfaction with college were seen among the Depression, anxiety, and stress of students. Gender, Marital Status and Financial responsibilities had not shown significant effect on Depression, anxiety, and stress among students. (Table 3, 4, 5)

Stress coping mechanisms

The most frequently mentioned coping method for relieving stress was "activities such as watching television, reading, sleeping and shopping", followed by "emotional support from others" . Under “other” mechanisms, eating, traveling and smoking were mentioned by some students as stress coping methods. 4 students mentioned using recreational drugs to relieve stress.

Satisfaction with faculty relationships	Satisfied	332	66.4
	Dissatisfied	92	18.4
	Neither	76	15.2
Satisfaction with college overall	Satisfied	309	61.8
	Dissatisfied	89	17.8
	Neither	102	20.4

Table2: Levels of depression, anxiety and stress among study participants

Categories	depression	Anxiety	Stress
Normal	263 (52.6%)	145 (29.0%)	233 (46.6%)
Mild	91 (18.2%)	59 (11.8%)	78 (15.6%)
Moderate	83 (16.6%)	106 (21.2%)	67 (13.4%)
Severe	37 (7.4%)	101 (20.2%)	74 (14.8%)
Extremely Severe	26 (5.2%)	89 (17.8%)	48 (9.6%)

Table 3: Effect of various demographic predictors on Depression of patients.

Predictors	Categories	Mean	Test statistics	P value
Gender	Male	12.19	t= 1.17	P= 0.34
	Female	12.35		
Marital Status	Single	12.25	t= 0.26	P= 0.87
	Married	12.21		
Year of study	2nd year	9.7	F=6.45	P=0.01
	3rd year	11.4		
	4th year	12.5		
	Intern	13.1		
Financial Responsibilities	No	12.23	t=0.68	P=0.43
	Yes	12.32		
Satisfaction with peer relationships	Satisfied	10.21	F=3.85	P=0.01
	Dissatisfied	13.35		
	Neither	12.52		
Satisfaction with faculty relationships	Satisfied	10.56	F= 2.57	P=0.03
	Dissatisfied	12.92		
	Neither	12.42		
Satisfaction with college overall	Satisfied	9.96	F=5.09	P=0.01
	Dissatisfied	13.74		
	Neither	12.31		

Table 4: Effect of various demographic predictors on Anxiety of patients

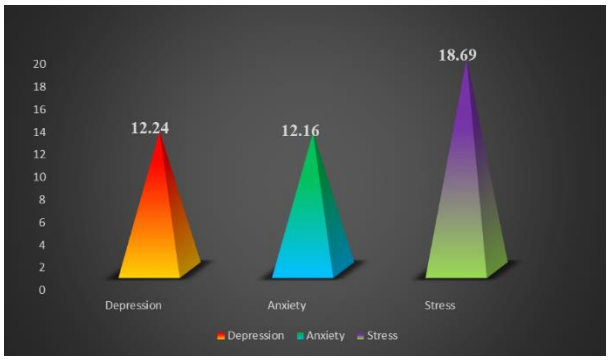
Predictors	Categories	Mean	Test statistics	P value
Gender	Male	12.20	t= 0.84	P= 0.46
	Female	12.14		

Marital Status	Single	12.15	t= 0.24	P= 0.88
	Married	12.18		
Year of study	2nd year	9.4	F= 6.65	P=0.01*
	3rd year	11.1		
	4th year	12.3		
	Intern	13.0		
Financial Responsibilities	No	12.15	t= 0.38	P=0.76
	Yes	12.19		
Satisfaction with peer relationships	Satisfied	10.14	F=2.90	P= 0.02*
	Dissatisfied	13.01		
	Neither	12.11		
Satisfaction with faculty relationships	Satisfied	10.32	F=2.29	P=0.04*
	Dissatisfied	12.85		
	Neither	12.14		
Satisfaction with college overall	Satisfied	9.80	F=6.06	P=0.01*
	Dissatisfied	13.52		
	Neither	12.12		

Table 5: Effect of various demographic predictors on Stress of patients

Predictors	Categories	Mean	Test statistics	P value
Gender	Male	18.78	t=0.69	P=0.55
	Female	18.62		
Marital Status	Single	18.61	T=1.34	P=0.26
	Married	18.93		
Year of study	2nd year	15.36	F=8.97	P=0.01*
	3rd year	18.17		
	4th year	19.14		
	Intern	21.36		
Financial Responsibilities	No	18.59	T=1.57	P=0.13
	Yes	19.09		
Satisfaction with peer relationships	Satisfied	17.17	F= 6.34	P=0.01*
	Dissatisfied	20.01		
	Neither	18.27		
Satisfaction with faculty relationships	Satisfied	17.86	F=4.36	P=0.01*
	Dissatisfied	19.29		
	Neither	18.54		
Satisfaction with college overall	Satisfied	17.09	F= 7.09	P=0.01*
	Dissatisfied	20.35		
	Neither	18.22		

Graph 1: depression, anxiety and stress scores among study participants.



DISCUSSION

Bachelor of dental surgery is of 4-year course for dental students in India with one year of compulsory internship. Students are enrolled in dental school through clearing the all-India entrance tests after their high school education. The level of competition is very high with limited number of seats in order to get selection in top most colleges of the country. The academic pressure to maintain good grades, disturbance in sleep pattern, new hostel life and peer pressure are few factors which lead to higher levels of stress and depression in college students.

Sometimes making decisions without parental guidance or choosing between good academics vs. enjoying "GOLDEN" years at college can lead to anxiety. Stress can also be observed in students who feel either academically inferior or academically superior to fellow classmates. High academic workload such as assignments and final examination are also causing of stress. Thus, recognising the importance of mental and psychological health of students, present study aims to assess the DAS among BDS students of BCDS and RKDF, Bhopal.

The Depression, Anxiety and Stress Scale (DASS) is a self-report scales designed by Lovibond S.H & Lovibond P.H in 1995 to measure three emotional states which are depression, anxiety and stress. Each of these groups contains 7 items, divided into subscales with similar content. This scale is use for a group of population and not for individual. It contains total 21 question related to depression anxiety and stress with scoring from 0 to 4. Which is marked by individuals on the basis of last one week experience. Score of DASS21 scale is sum of total score. In this study DASS21 was used which is a short form of DASS42 as it takes less time to complete and has cleaner factor structure compare to DASS42. DASS21 Scale is not to replace GP visit.

The All-India Survey on Higher Education (AISHE) revealed that the percentage of female students pursuing dentistry course is much higher than their male students and is increasing ratio. In present study it has been identified well as 68.4% of the participants are female and rest are males in our study the DASS score was not significant between both genders.[21] this is in contrast with studies done by Uraz C et al[3], Al- saleh SA et al[7], Al Sowygh ZH[9], Divaris K[16], Prinz P[17], Takayama [18] Alzahem et al[10] wherein they reported female students to have more DAS levels.

Marital status and financial responsibilities were found to be insignificant predictors of depression, anxiety, or stress in the current study. It was in accordance with the study where student's marital status is not a significant predictor[7]. Although married students may be more prone to stress due to their increased responsibilities to balance personal and professional life. The findings were in agreement with the studies where no association between students financial aid and depression[14] or stress[4] levels were found.

In the present study, when academic year were considered the overall DASS score was higher among interns. This can be due to the fact that interns are directly dealing with patients and have to complete all the clinical requirements with the worries of future job opportunities. Several investigations have reported the same result as per our study[7,9,10]. Our findings can also indicate that all the academic year students exhibit the same levels of stress and depression regardless of their year study.

The students were having satisfactory relationships with the faculties and peer, which marked an important epoch in this study. Therefore, we can say that human relationship has significant influence on psychological health. Similar results was observed in a study where personal relationships have greater impact on college students persistence in studying than academic factors[22]. Some studies show contradictory results

where faculty members were significant source of stress[3,7,9,10]

CONCLUSION

This study aimed to assess the levels of depression, anxiety and stress in undergraduate dental students and found that currently undergoing psychological management, the levels of these conditions were relatively high. The actual numbers may be even higher than those reported herein. The present study reports high prevalence of DAS among this group of UG dental students. Participants with abnormal depression and anxiety scores require a clinical diagnosis to receive prompt treatment. Furthermore, to ensure early identification of and intervention for psychological conditions, both students, faculty and parents should be counselled as well as educated regarding the physical and psychological signs and symptoms of anxiety and depression. New strategies for stress prevention and management should be implemented in dental schools for student's wellbeing, prevent drop out and ensure proper patient care. The persistence of these problems may lead to further physical and psychological complications that could continue after graduation, resulting in unhealthy dentists or early retirement and thereby affecting both the quantity and quality of the workforce. Following measures such as changes in curriculum time, small group assignments, student-cantered methodologies, reduction of educational costs, individual counselling, formative assessment of student should be implemented for Student's wellbeing, prevent drop out and ensure proper patient care.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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