

DEPRESSION, ANXIETY, AND STRESS AMONG DENTAL STUDENTS STUDYING IN MODULAR AND TRADITIONAL CURRICULUM

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ABSTRACT

Objectives: To compare the levels of depression, anxiety, and stress among dental students studying in the modular and traditional curriculum.

Materials and Methods: A cross sectional study was carried out among third-year Bachelor of Dental Surgery students studying in four dental colleges in Peshawar. Two colleges had traditional dental curricula, while two had modular/integrated education systems. The duration of the study was from November 2022 to February 2023. Data was collected using the DASS 21 questionnaire.

Results: Among the 200 students, 100 were from modular, and 100 were from traditional systems. In modular systems, 19% had mild, and 16% had moderate depression, while 12% had severe anxiety. In the traditional system, 7% had moderate depression, while 22% had moderate anxiety. Stress was mild in 10% of traditional and modular dental education systems students. A positive correlation between the modular system was found with depression; $P=0.02$ and anxiety; $P=0.01$; a slight negative correlation between depression ($P=0.02$) and anxiety ($P=0.01$) was seen with the traditional system, while no association was found with stress.

Conclusion: Students studying in the modular system have high depression and anxiety as compared to the traditional curriculum.

Key words: Depression, anxiety, stress, dental students, curriculum

INTRODUCTION

The World Health Organization defines mental health as an essential component of health. Depression combines loss of interest, guilt, low self-esteem, mood swings, and a disturbed, imbalanced personality. Anxiety is described as tension, uneasiness, and nervousness about a particular task or event that can negatively impact an individual's learning and level of achievement. While performing a new task, some individuals may become anxious about performing it correctly. When anxiety crosses its limit, a person may become stressed and unable to perform tasks correctly¹. Depression, anxiety, and

stress are psychological conditions that seem to be primarily found in dental students². According to different studies about medical and dental learning experiences, medical students suffer from the increased workload and have long study hours and extreme intellectual education, while on the other hand, dental students not only suffer from theoretical but also from practical workload because firstly, they have early exposure to the patient and secondly, they have to perform different surgical procedures to qualify him or herself as a skilled dental professional, so because of these reasons students may undergo depression, anxiety, and stress³.

Stress is interlinked with depression and anxiety. The prolonged duration of stress, anxiety, and depression is associated with other mental health disorders⁴.

Medical and Dental curriculum, with time, has

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shifted from traditional lecture-based learning to integrated conceptual understanding. Previously, Medical and Dental Colleges were following a conventional annual system which is a teacher-based educational system. In this system, the exam takes place at the end of a year with few formative assessment tests. On the contrary, a modular system is a student-centered curriculum in which subjects are taught/integrated according to topics. Basic sciences are taught with clinical correlations. The academic year is divided into modules. At the end of each module, the exam is taken along with an annual exam at the end of the year⁵.

Two colleges, Peshawar Dental College and Rehman College of Dentistry, have integrated curricula, while most dental colleges in Khyber Pakhtunkhwa favor a traditional curriculum. A curricular modification affects the educational environment and impacts students' mental health. There is a need to find out the effects of this curricular modification on the stress and anxiety levels of students⁶. Thus, this study aimed to determine the level of depression, anxiety, and stress among the students studying in the traditional and integrated dental curriculum.

MATERIALS AND METHODS

Ethical approval was taken from the Institutional Review Board (Approval number: Prime/ERC/2023-36). This cross-sectional study was carried out in all the dental colleges of Peshawar from November 2022 to February 2023. Students studying in third year Bachelor of Dental Surgery (BDS) were included in the study. The third year was chosen because, as a year of transition from basic to clinical sciences, it provided a focused uniform group with potential implications for dental education and practice. A consecutive sampling technique was used. All the students (n=225) studying in modular and traditional systems in Peshawar were taken as a sample. Out of 225 students, 200 consented to be part of the study, with a response rate of 89%. The final sample of 200 students was divided into two groups. Group A comprised 100 students studying in the conventional/traditional system, and Group B had 100 students studying in the modular dental education system. The study was conducted from 25th October to 20th December 2022.

DASS-21 Questionnaire⁷, developed by Lovibond and Lovibond in 1995, was used to measure

depression, anxiety, and stress. It is a 21-item self-report questionnaire designed to measure the severity of a range of symptoms common in both depression and anxiety, as given in Table 1. The potential participants were invited to participate in the study, the study and its objectives were explained in detail to all the participants, and informed verbal consent was taken. The DASS-21 questionnaire was distributed among the students selected as a sample for the research study. The data was collected by a trained researcher and verified by a research supervisor, a medical educationist, and a fellow of the College of Physicians and Surgeons Pakistan. The collected data and the identity of the samples were kept confidential.

The collected data were analyzed through SPSS Version 22. Frequencies and Percentages were calculated. The correlation between DASS and the curricular system was calculated using Pearson's correlation. A value < 0.05 was considered significant.

RESULT

Among the 200 students, 100 (50%) were from modular, and 100 (50%) were from traditional systems. In group A, students studying in traditional systems, 76% of students were normal while 17% had mild, 7% had moderate depression while 12% had mild, 22% had moderate and 4% had severe anxiety (Figures 1 and 2). In the modular system, 19% had mild, and 16% had moderate depression. Mild anxiety was found in 12% of students, while 22% had moderate anxiety. Stress was mild in 10% of traditional and modular dental education systems students. When comparing the depression of traditional with modular system students, there was a positive correlation between the modular system with depression; $P=0.02$ (Pearson's correlate= 0.162) and anxiety (Pearson's correlate= 0.178), while a negative correlation between depression and anxiety (Pearson's correlate= -0.162, -0.178) was seen with the traditional system. (Table 2)

DISCUSSION

Undergraduate Dental Education in Pakistan is a four-year program, at the end of which there is a one-year rotation as a Hospital Internship. Dental education is stressful because of the increased study load and early exposure to clinical work. The recent change from a traditional to a modular education

system is an intervention, and studies still need to be done on the effect of this modification on students.

The result of the current study showed that depression and anxiety were significantly higher in the modular system than in the traditional system, while stress was the same in both methods of education. Ahmed F conducted a research study on the stress level of dental and medical students. He found that the stress level increased in students while changing the curriculum from subject-based to case-based, which favors the current research study⁸. Other studies have reported similar findings. The main reasons for increased stress are a lack of relaxation and an increased workload^{9,10}.

Another reason for increased stress, anxiety, and depression among students studying in the modular system is an increased number of end-of-module exams throughout the session. In a study by Kulsoom B, it was found that in medical students before examination, depression, anxiety, and stress were (43%,63%, and 41%) which is reduced to (34%,

47%, and 30%) after the exam is over¹.

The current study found stress mildly present among students studying in modular and traditional curricula. In a systematic review by Elani HW, one theme was stress was more in dental students during the whole training period^{3,11}. However, in this systematic review, the majority of included articles used the Dental Environment Scale DES. In a study done in Saudi Arabia on “Depression anxiety and stress in dental students.” The researchers used the DASS 21 questionnaire to collect the data¹². Its results showed that most dental students faced stress and anxiety. Similar results were found in another study¹³. In Pakistan, Naz N found higher scores of depression, anxiety, and stress among first and second-year BDS students¹⁴. Other studies from Pakistan report similar findings^{15,16}. It has been found in the literature that stress can be overcome by supportive programs and taking different preventive measures. The reason for the low-stress scores in the current study may be because data was collected at a time when modular exams were not being taken. Also, the third year of the BDS program is when the students do not practice complete dental clinical work.

CONCLUSION

DASS score is higher among students studying in modular than in the traditional dental education system. We recommend that coursework with a lot of clinical activities overburden the students, which causes depression, anxiety, and stress, mainly in

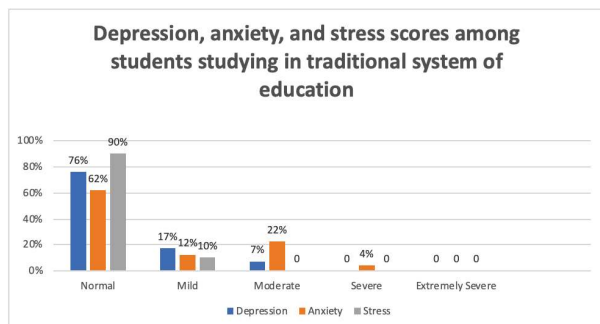


Fig 1: Depression, anxiety, and stress scores among students studying in the traditional system of education

Table 1: DASS-21 Questionnaire

	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+

Table 2: Correlation of traditional and modular system of education with DASS-21

System of Education	Correlation	Depression	Anxiety	Stress
The Modular system of education n=100	Pearson Correlation	0.16*	0.18*	0.03
	Sig. (2-tailed)	0.02	0.01	0.67
The Traditional system of education n=100	Pearson Correlation	-0.16*	-0.18*	-0.03
	Sig. (2-tailed)	0.02	0.01	0.67

*. Correlation is significant at the 0.05 level (2-tailed).

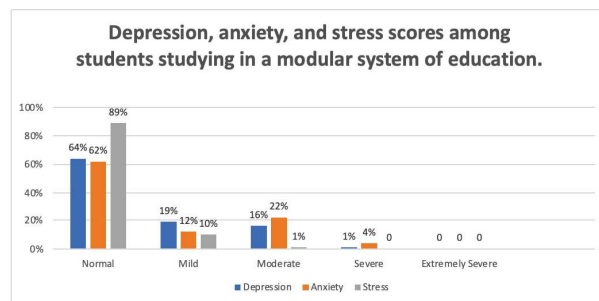


Fig 2: Depression, anxiety, and stress scores among students studying in a modular education system.

students of the modular curriculum. This needs to be mitigated by arranging co-curricular activities for the students. There is also a need for a psychologist in every institute who can counsel students with stress.

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