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RESEARCH ARTICLE

**STRESSORS IN DENTAL UNDERGRADUATE STUDENTS IN DENTAL COLLEGE - A
MULTICENTRIC CROSS SECTIONAL STUDY**

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ABSTRACT

Aim: To identify the prevalence and types of stressors in undergraduate dental students in various dental colleges in Chennai, India, during the various years of study.

Design: Cross-sectional multicentre study was conducted using a self-administered questionnaire

Materials and Methods: A cross-sectional study was conducted using a self-administered questionnaire among B.D.S. students from their 1st year of study to CRRRI (Internship). The study was conducted during the last term of the year and the students answered for their current year of study. A total of 3,176 students from 7 different colleges participated in the study.

Statistical Analysis Used: percentage of students under each category was calculated

Results: major stressors in first year students – learning new subjects and environment

Major Stressors in second year students – work and lack of time

Major Stressors in final year students – physical exertion and patient work

Conclusion: This study shows that the dental school environment has variable stressors. Of the 5 years of study, the students seem to be more stressed in the 2nd and 4th year of study.

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INTRODUCTION

Hans Selye in 1936 defined stresses the pattern of specific and non –specific responses an organism makes to stimulus events that disturb its equilibrium or exceed its ability to cope. It has proved in various studies throughout the world, that students in professional courses whether be it engineering, medical or dental all are vulnerable to stress and various psychological problems. Recent studies have focused more on students from health sciences to understand the sources of stress in medical and dental curriculum and institutional environment. Many studies have revealed that dental courses are more stressful than medical courses in our country^{1, 2}. It has been suggested by many that stress levels in dental practice is high and such stress had to have started early on during the period in Dental colleges, which when unchecked lead to irreversible damages^{3,4}.

A dental course of study consists of 2 years of Pre-clinical study and 2 years of Clinical study followed by a year of Compulsory Rotatory Internship (CRI). In the first two years (the Pre-clinical study years), the students are taught the basic medical sciences and the various procedures in Conservative

Dentistry and Prosthodontics are taught on mannequins. They are grouped as Pre-clinical Exercises. The students along with the theory part have the associated Practical sessions in all of the basic science subjects. In the third and fourth year of the study, the student along with Medical and Dental subjects take up observed and assisted treatment of patients. Depending upon the year of study, the concern of the student varies.

Generally academic and personal demands of dental education contribute to stress among students. Such stress would have detrimental effect on the students. This stress can lead to depression, anxiety, inefficiency, loss of interest in subject and burnout. Identification of stressors in dental education and curriculum would serve as an important tool to design and execute changes in the curriculum and to educate staffs so that the stress levels of students can be kept minimal⁷ At institutional level such data can be useful in management of the students by staff with necessary changes made specific to the student or assessed and managed by a clinical psychologist.

This cross sectional study was conducted to assess the stress level of students from 1st year to CRI (Interns) using a Modified Dental Environment Stress Questionnaire. The

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participants for this study were voluntary and no additional incentive was proposed by the investigators.

MATERIALS AND METHODS

This multi-centric study was conducted among students of seven private dental colleges, to evaluate the stress levels and sources of stress in the dental school environment. This study was conducted with the help of self-reported Modified Dental Environment Stress questionnaire⁸.

The study population consisted of all the students from first year to final year and CRI students among dental undergraduate students in all the seven colleges. This modified questionnaire is divided into four sections to meet the study requirements. The four sections identified stressors related to (i) Learning Experience, (ii) Learning Environment, (iii) Patients Work and to (iv) Social and Personality issues. The responses were based on a four point Likert scale 1- not stressful, 2- slightly stressful, 3- moderately stressful, 4- very stressful. The collected data was analysed statistically.

Ethics

The study was started after approval from Institutional review board of Adhiparasakthi Dental College.

Statistical Analysis

The percentage of students under each category was calculated and this result was used to compare the area of stress among classes. All the data collected were tested for normality before analysis using SPSS software version 11.0.

RESULTS

A total of 3,176 subjects participated in this study. The students belonged to the age group of 18-23 yrs.

Of the 5 years of study, the students seem to be more stressed in the 2nd and 4th year of study. (TABLE 1,2) The stressor which is evenly found in all the 5 yrs of study are those associated with (i) Fear of failing the course, (ii) Fear of Discrimination based on Sex, Colour, Caste etc., and (iii) the gap between expectation and reality.

During the 1st year of study, the stressors are mostly associated with learning new subjects, new environment and most importantly those associated with rules and regulations of the college and faculty. (TABLE 1, 2)

In the 2nd year of study, the fear of rules and regulations of the college and faculty is reduced. But it is replaced with more stress than before. New stressors in the form of amount of assigned work, lack of time, fear of not being able to complete exam requirements etc are seen. Along with this, Competition for grades and associated physical stress kicks in. Fear of lack of attendance, financial responsibilities and lack of social life are also perceived. (TABLE 1, 2)

In the 3rd year of study fear of failing course, lack of input from teachers and inconsistency in teaching by the staffs, first time exposure to clinical environment and financial responsibilities was the main and noticeable stressor. (TABLE 1, 2)

In the final year of under graduation course amount of work assigned for students and completion of quota and the physical exertion associated with it were prominent.

Table: 1 Percentage of Stressors Related To Learning

| % of Moderately to Severely Stressed students | | 1st year | 2nd year | 3rd year | 4th year | CRI |
|--|--|----------|----------|----------|----------|-----|
| Stressors Related to Learning Experience | | | | | | |
| 1 | New learning environment. | 57 | 33 | 21 | 42 | 27 |
| 2 | Theoretical learning of new materials, their use and properties. | 62 | 52 | 57 | 48 | 21 |
| 3 | Theoretical learning of new techniques and methods. | 58 | 63 | 61 | 68 | 21 |
| 4 | Practical learning of new materials | 47 | 53 | 47 | 63 | 22 |
| 5 | Practical learning of new techniques and methods. | 61 | 47 | 32 | 67 | 26 |
| 6 | Amount of assigned work | 38 | 62 | 62 | 71 | 63 |
| 7 | Lack of time to do assigned college work | 33 | 87 | 64 | 71 | 21 |
| 8 | Fear of being unable to keep up with workload | 37 | 68 | 47 | 69 | 18 |
| 9 | Completing examination requirements | 26 | 73 | 46 | 92 | 0 |
| 10 | Competition with classmates | 32 | 47 | 63 | 91 | 13 |
| 11 | Competition for grades | 62 | 71 | 47 | 89 | 6 |
| 12 | Examinations and grades | 58 | 64 | 31 | 73 | 0 |
| 13 | Relationships with other members of the class | 36 | 41 | 33 | 59 | 21 |
| 14 | Physical Exertion | 39 | 62 | 48 | 96 | 18 |
| 15 | Attendance. | 41 | 63 | 36 | 69 | 22 |
| 16 | Fear of failing the course | 57 | 67 | 82 | 79 | 0 |
| 17 | Fear of being unable to catch up if left behind | 31 | 57 | 62 | 78 | 31 |
| 18 | Amount of cheating among dental students | 32 | 41 | 37 | 83 | 18 |
| Stressors Related to Learning Environment | | | | | | |
| 19 | Learning environment created by theory faculty | 32 | 31 | 57 | 42 | 12 |
| 20 | Atmosphere created by clinical faculty | 31 | 47 | 53 | 61 | 37 |
| 21 | Receiving criticism about work | 62 | 76 | 42 | 51 | 46 |
| 22 | Rules and regulations of the college. | 61 | 47 | 49 | 46 | 41 |
| 23 | Rules and regulations of the faculty | 51 | 42 | 59 | 38 | 37 |
| 24 | Attitudes of faculty toward professional students | 31 | 29 | 61 | 69 | 47 |
| 25 | Inconsistency of feedback on your work among different instructors | 47 | 63 | 87 | 67 | 54 |
| 26 | Lack of input in the decision-making process of the dental faculty | 33 | 57 | 89 | 72 | 81 |

Table 2 Percentage of Stressors Related To Patient Work And Social And Personality Stressors

| | % of Moderately to Severely Stressed students | 1st year | 2nd year | 3rd year | 4th year | CRI |
|--|---|-----------------|-----------------|-----------------|-----------------|------------|
| Stressors Related to Patient work | | | | | | |
| 1 | Patients' inability to complete the prescribed care plan | NA | NA | 33 | 62 | 53 |
| 2 | Patients arriving late or not showing up for appointment or Exams | NA | NA | 42 | 93 | 37 |
| 3 | Need to find own patients for clinical work | NA | NA | 56 | 89 | 29 |
| 4 | Availability of materials for the prescribed work. | NA | NA | 58 | 67 | 41 |
| 5 | Lack of cooperation by patients in their home care | NA | NA | 41 | 56 | 32 |
| 6 | Working on patients with poor personal hygiene | NA | NA | 89 | 62 | 51 |
| 7 | Fear of sexually transmissible disease/AIDS/hepatitis B | NA | NA | 91 | 98 | 74 |
| Social and Personality Stressors | | | | | | |
| 8 | Lack of time for relaxation | 33 | 81 | 24 | 96 | 12 |
| 9 | Financial responsibilities | 47 | 89 | 81 | 94 | 81 |
| 10 | Personal physical health | 46 | 51 | 33 | 82 | 32 |
| 11 | Discrimination due to caste, class status or sexual orientation | 61 | 63 | 60 | 61 | 57 |
| 12 | Your expectations of professional work versus reality | 56 | 81 | 71 | 61 | 82 |
| 13 | Fear of not having a possibility to pursue a P.G. program. | 21 | 11 | 32 | 42 | 86 |
| 14 | Lack of Social life | 48 | 61 | 22 | 81 | 11 |

Social stressors like cheating and associated stressors were high. Patients arriving late and handling patient with communicable diseases were stressors in clinical areas. (TABLE 1, 2)

DISCUSSION

Dental school environment is considered one of the most stressful environments in the country⁸. Dental students have reported more stress levels even more than medical students in studies done⁹. During each year of study, the stressors were related and varied according the subjects and curriculum of the year. In all the years of study and compulsory internship, fear of learning new techniques and using new materials were found to be a common stressor among the students.

Completion of exam requirements and competition for grades and exam related stressors are high only in final year of the study, since final year of dental undergraduate courses have more subjects and both theory and practical exam and failure any one subject can lead to a situation where the student has to wait for another 6months for the next chance. Third year of dental under graduate course was the least stressful in the dental college curriculum. (Table: 1)

In stressors related to learning environment, the criticism from the faculty regarding their clinical and pre-clinical work was the main stressors. Many students believe criticism of the student in front of the patient was more stressful¹⁰. Communication and inconsistencies in the feedback with various faculties of same department was one of the stressors¹¹. The students expectation of participation in the decision making process with the faculty was also highlighted as stressor. (TABLE 2)

In stressors in clinical and patient work finishing the prescribed number of cases within a specified period is the greatest stressor for clinical year student as confirmed in various other studies also¹². In the early stages of clinical posting treating patients with poor oral hygiene and patient with diseases such as Hepatitis – B and AIDS were found by the students difficult to handle¹³.

Financial constraints and not able to meet the expectation of parents are main social stressors. Lack of relaxation time from the stress during clinical year especially in the final year of the studies was perceived as prominent stressors.

Lack of time for socialisation is less during the second and final year of dental undergraduate courses, since these year curriculum have more subjects and considered more difficult. Fear of unable to pursue post-graduation and fear regarding the future becomes main stressors in internship period.

CONCLUSION

This study shows that the dental school environment has variable stressors. These stressors vary based on the year of study and the clinical environment and various other factors.

Academic and clinical workload and stressors related to completion of the workload were the main stressors in final year of the undergraduate study. Learning new subjects, techniques and materials are the main stressors in the first year of study in dental school. Criticism from faculty about the quality of the work done, variable approach of a same situation from different faculty was also main stressors in second and third year.

Other studies have indicated that dental students the variables ‘social overload’, ‘performance pressure at work’, ‘lack of social recognition’ and ‘worry propensity’ was increased^{1,14} and the overall findings show that dental students had greater levels of stress than medical students in most categories².

Mental health practitioners and psychologist who counsel the students should evaluate and help the students overcome these stressors. Many studies have indicated the need to identify the group of students who may have insufficient social skills for dealing adequately with the patients, and to train them accordingly⁶. It is recommended that dental faculty focus on the importance of prevention and intervention of stress amongst undergraduates⁷. The educational system should be structured in such a manner that potential stressors for students are decreased by stress management programs⁹. Effective monitoring assistance from teaching staff, faculty administrators, and families is also essential.

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