

STRESS LEVEL AMONG DENTAL STUDENTS, IT'S EFFECT AND COPING STRATEGIES: A CROSS-SECTIONAL STUDY

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Article Received on
05 Sept. 2017,

Revised on 25 Sept. 2017,
Accepted on 15 October 2017

DOI: 10.20959/wjpr201714-9892

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ABSTRACT

Introduction: Stress is part of the daily activities nowadays. Dental education has been proved to have a stressful nature and stressors are multifactorial. The highly competitive dental education exerts a negative effect on the psychological wellbeing, physical health and academic performance of the individual. **Aim:** To determine the prevalence of various stressors, their effect on the dental students and stress coping strategies adopted by them. **Methodology:** Observational study conducted amongst the BDS students of School of Dental Sciences in the year 2015. Total number of students participated in the study were 209. Pre tested structured questionnaire was used to find

out the various stressors and their coping strategies. Results were obtained by subjecting the data to statistical analysis using SPSS version 20.0. **Results:** Total participants in the study were 209 including 63 males and 146 females. Different levels of stress were obtained in different years. Difficulty in getting patients was a major stressor at the senior level. **Conclusion:** Most of the students pursuing BDS are facing some sort of stress during the course. Positive part of the study was that only handful students were practicing negative stress coping strategies like alcohol or smoking.

INTRODUCTION

Stress is as old as humans. It is unavoidable and today for survival in this competitive world it has become part of our daily activities. Stress is the way an individual responds to various stimuli disturbing his equilibrium.^[1]

Stress gradually puts a negative impact on the life of an individual leading to involvement in adverse life styles like drinking, smoking, alcohol abuse instances etc. and in some it even

leads to suicidal tendencies. Long term exposure to stress has been associated with psychological problem such as burnout which can influence mental health.^[2] The world health organization (WHO) estimates that stress related disorders will be one of the leading causes of disability by the year 2020.^[3]

Dental education has been proved to be the most complex and stressful learning.^[1] Various studies have shown that rate of stress is higher among dental students in comparison with students of other professional courses.^[4] Stress among dental graduates can be multifactorial. Previous studies have revealed that among dental students major stressors are academic performance, managing clinic/patients and fear of failing.^[1]

It is reported that usually the fourth year students were more worried about their career prospects where as the new admissions fail to cope up the with the amount of stress they are exposed to.^[4]

Akbari M and his colleagues showed that 52% of the dental students at Mashhad Dental School had abnormal stress and the fourth year students had significantly higher stress^[5]; whereas some studies have shown that stress was highest in third year students upon transition to clinical teaching occurred.^[2]

Most of the studies have been conducted to find the stressors among dental graduates but very few studies have been conducted to know the various stressors, consequences of stress and stress coping strategies acquired by dental students. So, the present study was conducted to determine the various stressors, their consequences on the health of dental students and various stress coping strategies adopted by the dental graduates studying at school of dental sciences.

MATERIAL AND METHODS

A descriptive cross-sectional study was carried out amongst the dental students at school of dental sciences, Sharda University in February 2015.

Study included all the BDS graduates from first year to internship. All the students present on the day of the survey were included on voluntary basis. Total of 209 students participated in the study. The aim of the study was clearly explained to the participants prior to the start of study and they were assured that confidentiality will be maintained. Volunteers were asked

not to mention their names or roll numbers on the survey form. Ethical clearance by the college ethical committee was obtained before initiating the study.

Students were provided with a structured pre-tested questionnaire for collection of data. The questionnaire was tested by doing a pilot study and the data of the pilot study was not included in the results. It was a close ended questionnaire consisting of four parts with 56 questions.

First part: Included eight questions related to demographic information like age, sex, religion, mother tongue, residential status, nationality, marital status and year of BDS.

Second Part: Included twenty five questions related to various stressors. It was further divided into four parts.

- a) Academic factors which included questions like frequent examinations, patient care responsibilities and fear of failing etc.
- b) Physical factors like inadequate hostel facilities, insomnia etc.
- c) Social factors like financial problems, language barriers etc.
- d) Other factors like career insecurity, professional identity etc.

Third Part: Consisted of questions related to various stress consequences like fatigue, tiredness, back pain etc.

Fourth Part: Questions related to various stress coping strategies like professional counseling, talking to friends, recreational activities etc.

Response to questionnaire varied from never to very often (never (1), almost never (2), Sometimes (3), Fairly often (4) and Very Often (5). Participants were asked to tick the score applicable to them.

Statistical Analysis

The obtained data was analyzed using the statistical package for the social sciences (SPSS) software for windows version 20.0 (IBM SPSS-Chicago, IL:SPSS Inc.)/ Means of stress scores were compared among different batches of BDS. Numbers and Percentages were used to compute the results. Multiple group comparisons were made to compare the level of stress using ANOVA test with p value less than 0.05 considered significant.

RESULTS**Table 1: Socio-Demographic Characteristics**

All the students present on the day of survey participated in the study. Total number of participants in the current study was 209 out of which 30.1% were males and 69.9% were females. Maximum participants were of final year BDS (33.4%). Most of the participants were residing in the hostel and 30.4% were residing with their families. Maximum participants were of Indian Nationality.

Table 1: Socio Demographic Details.

| Variable | Number | Percentage |
|----------------------|--------|------------|
| Gender | | |
| Male | 63 | 30.1% |
| Female | 146 | 69.9% |
| Age | | |
| < 20 years | 61 | 29.2% |
| > 20 years | 148 | 70.8% |
| Nationality | | |
| Indian | 191 | 91.4% |
| International | 18 | 08.6% |
| Residential Status | | |
| Outside Campus | 38 | 18.2% |
| Hostel | 107 | 51.2% |
| With Family | 64 | 30.6% |
| BDS | | |
| 1 st year | 31 | 14.8% |
| 2 nd year | 36 | 17.3% |
| 3 rd year | 33 | 15.9% |
| 4 th year | 70 | 33.4% |
| Internship | 39 | 18.6% |

Table 2: Stressors Among Participants

The table describes various stressors among participants. In BDS First and Second year among the academic factors frequent examination (38.8%, 38.9%), fear of failing (33.3%, 35.3%) and difficulty in learning procedures (27.7%, 29.4%) were the major stressors where as in third and fourth BDS and in internship the frequent stressor was difficulty in getting patients (69%, 79.1% and 41.6%). Among the interns faculty partiality was also a frequent stressor.

Insomnia was found to be the major physical stressor among all years of BDS students (30.5%, 30.5% and 37.9%) except for the final year and internship.

In internship the major physical stressor was the inadequate hostel facilities (30.7%) and environmental factors played a crucial role in stressing the final year students.

Under the social stressors financial problem was found to play a major role in BDS first year, second year and interns (16.6%, 16.7% & 33.3%) whereas among third year students the major social stressor was interpersonal relationships problem (25.8%), where as mental harassment was the major stressor in BDS fourth year (32.3%).

Among other stressors lack of confidence was found to be a stressor in BDS first and second Year (11.1% & 11.2%) and among BDS third year, fourth year and Interns career insecurity played a major role in inducing stress (30.3%, 38.3%,33.3%).

Table 2: Stressors among participants.

| Stressor | 1 st year | 2 nd year | 3 rd Year | 4 th Year | Internship |
|--|----------------------|----------------------|----------------------|----------------------|------------|
| Academic Factors | | | | | |
| Frequent Examination | 38.8% | 38.9% | 30.3% | 6.87% | 23.0% |
| Fear of Failing | 33.3% | 35.3% | 4.4% | 66.2% | 35.8% |
| Difficulty in learning clinical procedures | 27.7% | 29.4% | 31.2% | 26.9% | 25.6% |
| Difficulty in getting Patients | 22.2% | 22.9% | 69% | 79.1% | 41.6% |
| Physical Factors | | | | | |
| Insomnia | 30.5% | 30.5% | 37.9% | 28.8% | 28.2% |
| Inadequate hostel facilities | 25.0% | 26.5% | 37.9 | 28.6% | 30.7% |
| Environmental Factors | 30.5% | 31.4% | 35.5% | 37.0% | 20.0% |
| Social Factors | | | | | |
| Financial problem | 16.6% | 16.7% | 0 | 16.2% | 33.3% |
| Interpersonal Relationship Problem | 13.8% | 14.7% | 25.81% | 14.7% | 23.0% |
| Mental Harassment | 8.3% | 9.1% | 35.8% | 32.3% | 10.2% |
| Others | | | | | |
| Lack of Confidence | 11.1% | 11.2% | 19.4% | 15% | 17.9% |
| Career Insecurity | 8.3% | 8.6% | 30.3% | 38.3% | 33.3% |

Table 3: Influence of Academic Factors

Frequent examination, criticism about work and getting appropriate patients were found to have significant difference in causing stress among BDS students.

Table 3: Influence of Academic Factors.

| Factor | Sum of Square | Mean Square | F value | P value |
|----------------------------------|---------------|-------------|---------|---------|
| Frequent Examination | 35.63 | 8.9 | 5.9 | .000 |
| Patient Care Responsibility | 29.121 | 7.2 | 2.9 | .021 |
| Lengthy and Frequent Assignments | 25.87 | 6.4 | 3.5 | .008 |
| Lack of cooperation | 32.10 | 8.02 | 2.9 | .021 |
| Criticism about work | 47.5 | 11.8 | 5.5 | .000 |
| Appropriate Patients | 67.8 | 16.9 | 6.4 | .000 |

P value \leq 0.05.

Table 4: Consequences of Stress

Headache (45%, 46%) and eye strain (44%,43%) were the major consequences of stress observed in BDS first and second Year where as sleep disturbance (like irregular sleeping pattern, disturbed sleep) was the most common consequence in BDS third Year, fourth Year and Internship.

Table 4: Consequences of Stress.

| Consequences | BDS 1 ST YEAR | BDS 2 ND YEAR | BDS 3 RD YEAR | BDS 4 TH YEAR | INTERNSHIP |
|-------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------|
| Headache | 45% | 46% | 32% | 37% | 25% |
| Eye Strain | 44% | 43% | 39% | 40% | 36% |
| Sleep Disturbance | 41% | 40% | 50% | 55% | 48% |

Table 5: Stress Coping Strategies

In BDS first year and second year talking to friends (60%, 48%) was found to be the major stress coping strategy. In BDS third year, fourth Year and Interns listening to music (59.3%, 53%, 37.1%) was found to be the major stress reliever. Maximum BDS students (60%) never opted for negative habits like smoking or consumption of alcohol.

Table 5: Stress Coping Strategies.

| Stress Coping Strategy | BDS 1 ST YEAR | BDS 2 ND YEAR | BDS 3 RD YEAR | BDS 4 TH YEAR | INTERNSHIP |
|------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|------------|
| Talking to Friends | 60% | 47% | 53.1% | 49% | 26.3% |
| Listening to Music | 55% | 40% | 59.3% | 52.9% | 37.1% |
| Talking to Parents | 38.7% | 31.4% | 37.5% | 26.08% | 27.7% |
| Shopping | 48.2% | 31.4% | 37.5% | 26.08% | 27.7% |
| Crying | 48.3% | 41.6% | 25.0% | 35.8% | 26.3% |
| Watching Movies | 46.6% | 34.2% | 46.8% | 47.8% | 37.1% |

DISCUSSION

It has been shown by various studies that dental education ever since its origin has been very stressful in all the countries on the globe.

In the present study, various factors were studied that can cause stress among dental graduates, consequences of this stress and various stress coping strategies adopted by dental students to survive well in this field. The causes of stress differed by the year of study with some overlap. It's important to identify the stressors and eliminate them as they lead to neuromuscular disorders which can affect the performance gradually.^[4]

In the present study frequent examinations, criticism about work and getting appropriate patients were found statistically significant stress factors. These results were in agreement with the studies conducted by Maryam and Alireza^[4] and Ramezani et. al^[6] in which daily work pressure, passing exams were found as main stressful factors.

According to our study, fourth and third year students were found to have more stress as compared to students of other years of BDS. This was in accordance with the study conducted by Maryam and Alireza.^[4], Akbaris et al^[5] and Ramezani et al.^[6]

In third year BDS students are exposed to clinical procedures and lot of dealing with different dental materials making them feel inadequate for the task which in turn results in student becoming fearful about completing the clinical work and examination requirements on time.^[7,8,9] Issues related to patient clinical management were the most observed stressor for fourth year stressor. It can be related to stress the students face on entering the clinical setting.^[10] Dental schools emphasis deeply on clinical skills and make sure graduates of the school are well competent.^[11]

Insomina was found to be one of the major stressor among BDS first, second and third year Students. This finding was in consistent with the previous studies conducted by Ahmad MS^[9], Jalalrddin H et. al,^[12] and Polychronopoulou A et. al.^[13] But, this finding was not true for BDS final year students and interns.

Among the BDS second year frequent examination and fear of failing were the important stressors. Similar results were seen in the study by Mas suryalis ahmed et al.^[9] He also stated that BDS second year students start up with the pre-clinical work which requires lot of study and they are still adjusting to the new environment so do not get time for other activities making the situation stressful.^[9]

Inadequate hostel facilities were found to be one of the main reasons of stress among BDS final year as poor accommodation leads to inappropriate environment for studying. This can be related to the reason quoted by Jalalrddin H. Hamissi in his study.^[12] He stated that hostel is a place where students from different family background and interests live together which can sometimes make the environment inappropriate. As per finding of Vakil N quality of food in mess can also make hostel inappropriate to live.^[3]

In confirmation with previous studies^[3,12] present study also confirmed that attitude of staff was also found to be very stressful.

Our study observed that headache, eye strain and sleep disturbances was found to be the most common consequence of stress in BDS first and second year. This was in accordance with the study conducted by Ahmad MD.^[9]

Listening to music was found to be the most significant among the stress relievers seen in our study especially among the interns, third year and fourth year students was in accordance with the result of study conducted by Tegbir Singh.^[11] He concluded that 98% of students of third year and fourth year used music, TV and internet to combat stress.

Study by Tegbir Singh^[11] and Ahmad MS^[9] also showed that 90% students tried to get emotional support from families and friends and similar results were seen in our study where BDS first and second year where 60% students relieved stress by talking to their friends.

Besides these other stress coping strategies that were adopted was watching movies, shopping and reading. Smoking/Alcohol consumption was never picked up as stress buster by 60% BDS students.

In today's world some amount of stress is associated with all the occupations but it can be handled easily using a structured approach. Students who wish to enroll for professional courses like dentistry should be exposed to nature of profession and the curriculum prior to admission. So, that student enrolling for dentistry should have a mindset of the type of clinical and academic work the student has to deal with.

STRENGTH

The most encouraging part of the study was that all the positive stress coping strategies were adopted by the students to combat stress.

LIMITATIONS

There were certain drawbacks in the study like questionnaire prepared could have been more detailed. Some more questions in relation to teaching methodology could have been added. Another limitation of the study was the strength of students present on the day of study was less. So, the distribution of students in different years was not equal. The results cannot be generalized as the study has focused on only one college out of so many colleges.

CONCLUSION

Based on the study we suggest that most of the students pursuing BDS are facing some sort of stress during the course. Though, we cannot generalize the results as only students of one dental school have been selected for the study.

The most interesting and positive part of the study was that only handful students were practicing negative stress coping strategies like alcohol or smoking.

But after the analysis of the facts and figures obtained in the study we suggest that it should be made mandatory that dental curriculum should be reviewed at regular intervals and some workshops must be conducted for the staff to improve upon the student dealing, teaching methodology and how to provide a friendly teaching environment. A student counselor should be appointed in all dental schools for the counseling of students who are unable to cope up with the stress of this course.

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