A questionnaire study to evaluate the burnout syndrome and stress among dental students from two universities

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Abstract

Background: Stress has been described as an epidemic of the 21st century and even students are not exempted from this scenario. It is now well-established that dental students perceive and experience high levels of stress. Although some stress is inherent in dentistry and education and is likely to be beneficial as a learning stimulus, there is a concern that high levels of stress and prolonged stress exposure may precipitate burnout, a term that describes the experience of long-term work-related exhaustion and diminished interest. Hence this study was attempted.

Aim: To evaluate burnout and stress among students of two dental universities with different curriculum (Karnataka Lingayat Education University, KLEU, and Rajiv Gandhi University of Health sciences (RGUHS)).

Materials and Methods: Information regarding the level of stress and burnout was assessed based on Maslach Burnout Inventory-Student Version (MBI-SS) and Perceived Stress Score (PSS) questionnaire. The responses obtained from 137 participants were analyzed using independent t-tests and Chi-square test.

Results: Statistically significant increase in stress mean scores ($P = 0.002$) was found in KLEU dental students when compared to RGUHS. Applying strict rule of burnout syndrome statistically significant increase in burnout syndrome ($P = 0.029$) with odds ratio 3.97 times more was found in KLEU dental students. No difference in burnout and stress between males and females and the social classes was noted.

Conclusion: Burnout and stress was significantly more in dental students of KLEU as compared to RGUHS students.

Key words: Burnout, dental students, stress, universities

Introduction

Stress has been described as an epidemic of the 21st century. Today humans are exposed to more stress than ever due to increasing competition and various environmental factors. Students are also not exempted from this scenario.

Stress, as well as health and well-being, among dental students has been a frequent topic of research during the last decades.\[^{1-4}\]\n
Although the literature on dental student stress covers different perspectives, such as general levels of stress, consequences of stress or effects of stress prevention—most attention has been directed at perceived causes of stress.

In general, three distinctive categories of stress provoking factors can be distinguished: Faculty-related factors (such as a bureaucratic administration system), study-related factors (such as having to pass exams), and student-related factors (such as personality characteristics or health behaviors).\[^{5}\]

Stress which persists for prolonged period of time leads to condition like burnout which may have adverse consequences.

Burnout is defined by Maslach and Jackson\[^{6}\] as a working environment syndrome, characterized by a process of chronic response to occupational stress, when coping methods fail or are insufficient, thus having negative consequences both at the individual and the professional level, and further affecting the family and social interactions. It is referred to as a multidimensional syndrome consisting of emotional exhaustion, dehumanization, and reduced accomplishment at work.

Burnout is an abnormal response of an individual to chronic emotional stress, and it is characterized by three components: Emotional tiredness, depersonalization, and low personal realization.\[^{9}\]

Initially, this syndrome was described in professionals with an intense and emotional interpersonal contact,\[^{9}\] however, more recently the concept of burnout has been extended to all occupational groups, including students.\[^{9}\]

Advanced training and specialization in health sciences is a complex educational procedure which poses unique challenges to young professionals. Residents of all specialties often have multiple clinical, teaching and research assignments, long work hours, and additional strains that typically accompany a young individual’s life.

The examination of sources, correlates and consequences of stress has become a popular area of research in dental education.
and has been the focus of numerous recent investigations. It is now well-established that dental students perceive and experience high levels of stress. Although some stress is inherent in dentistry and education and is likely to be beneficial as a learning stimulus, there is a concern that high levels of stress and prolonged stress exposure may precipitate burnout, a term that describes the experience of long-term work-related exhaustion and diminished interest.[11]

The present study was developed taking into account the need for more information on this condition. Hence, this study was carried out to evaluate and compare the burnout and stress among the dental students of two universities during degree examination. In addition, compare burnout and stress with regards to gender and socio-economic status.

Materials and Methods

The present study was of cross-sectional design conducted to evaluate burnout and stress among final year undergraduate dental students of 21-23 year age of two universities 15 days before appearing for degree examination. Final year dental students appearing for degree examination from different Dental Universities of Karnataka state formed the population under study. Among which two Universities were selected [KLE University of health education (KLEU) and Rajiv Gandhi University of Health Sciences (RGUHS)]. Permission to conduct the study was obtained from all the concerned authorities (Ethical committee of the Institution, Principal of the two respective dental colleges, where written permission was obtained). Among 84 dental students of KLEU and 76 RGUHS dental student, written informed consent was obtained from the 78 dental students of KLEU and 74 RGUHS dental student who were willing to participate in the study. All the final year dental students appearing for degree examination were asked to fill the questionnaire with no time limits. A 15-item questionnaire related to burnout based on Maslach Burnout Inventory-Student Version (MBI-SS) was used, and 10 questions related to stress during exam based on sheldon cohen’s perceived stress scale (pss). The questionnaire to assess Stress based on sheldon cohen’s perceived stress scale (pss) is a self-assessment, five-point Likert-type scale, with categories from 0 = Never, 1 = Almost Never, 2 = Sometimes, 3 = Fairly often, 4 = Very often.

Scoring: PSS scores are obtained by reversing responses (e.g. 0 = 4, 1 = 3, 2 = 2, 3 = 1, and 4 = 0) to the four positively stated items (items 4, 5, 7, and 8) and then summing across all scale items.

The questionnaire was pilot tested on a sample of 30 3rd year dental students appearing for annual examination of Belgaum city. On the basis of the feedback received, modifications were made.

Maslach Burnout Inventory-Student Version (MBI-SS) was changed from seven point likert scale to five-point likert scale by clubbing some options which were confusing to the students like always and almost always to always and almost never and never to never.

The original questionnaire was replaced with the modified version in the study.

Scheduling

This study was carried out from 5th July-24th July 2012, 15 days before appearing for degree examination.

Statistical analysis

Data was analyzed using Statistical Package for the Social Sciences (SPSS) for windows, Version 19; SPSS Inc. Chicago, IL, USA. To test the reliability of the survey items, Cronbach’s alpha co-efficient was used. Frequency distribution analysis was done for all questionnaire related to burnout and stress. Comparisons among students of two University was done by unpaired t-test and Chi-square test.[9,14,15]

Results

Among 160 dental students, 152 were willing to participate. After obtaining the filled questionnaires, it was realized that 15 questionnaires were incompletely filled, and hence they were excluded from the analysis. Therefore, only 137 questionnaires were subjected for final analysis. The reliability analysis, Cronbach’s alpha coefficient value was found to be 0.81.

The final study sample of 137 (31 males and 106 females) completed the MBI-SS and PSS questionnaire. General information like age, gender, parents’ socio-economic status, college of study and university was also collected. The
response rate was 85.62%. For the total sample, mean age was 21.95 ± 1.14 years.

A total of 137 out of 160 final year undergraduate dental students among which 48.9% were enrolled from RGUHS (n = 70) and 51.09% from KLEU (n = 70). And 22.6% of students were males (n = 31) and 77.4% were females (n = 106). Eighty percent of students in KLE university college belonged to upper class whereas only 37.3% belonged to upper class in RGUHS [Table 1].

Responses coded by the participant’s on the MBI-SS were as such. When asked do you feel emotionally drained by your studies, 55.7% dental students of KLEU always and often felt emotionally drained by their studies when compared to the 46.2% dental students of RGUHS. And 54.3% of KLEU dental students felt tired when getting up in morning and facing another day in college when compared to 43.2% RGUHS dental students.

Interestingly, 43.3% of dental students of RGHUHS felt always burnt out by their studies and only 21.4% of KLEU dental students often felt burnt out. One more thing to add up, 51.4% students of KLEU felt burntout sometimes which is alarming condition. And 64.1% of RGHUHS students always felt confident enough that they were effective in getting things done and only 45.7% of KLEU students often felt the same.

During exams, dental students of KLEU 52.8% often and 44.7% of RGHUHS students regularly felt that they were unable to control important things in life. Thirty percent of KLEU students fairly often were not able to cope up with all things when compared to 20.9% RGHUHS students. And 45.7% of KLEU students often felt difficulties were piling up so high that they could not overcome them compared to 35.8% of RGHUHS students.

There was a statistically significant difference in the mean stress scores between KLEU and RGHUHS dental students (P = 0.002), whereas the mean burnout scores in KLEU dental students when compared to RGHUHS was found to be statistically insignificant (P = 0.982).

For the KLEU and RGHUHS students, the mean values of emotional exhaustion were 11.15 ± 4.9 and 11.38 ± 3.6, cynicism was 5.85 ± 4.7 and 8.07 ± 3.1 and professional efficacy was14.35 ± 4.7 and 17.7 ± 3.9, respectively. Exhaustion domain showed no statistical significant (P = 0.732) difference between KLEU and RGHUHS students, whereas statistical significant difference was seen between KLEU and RGHUHS dental students with cynicism (P = 0.001) and (P = 0.008) professional efficacy.

The overall mean value of burnout for males and females were 33.51 ± 10.1 and 30.36 ± 8.8. Whereas, the mean values of emotional exhaustion were 11.74 ± 4.5 and 11.13 ± 4.2, cynicism was 7.72 ± 4.6 and 6.51 ± 4.0 and professional efficacy was 15.96 ± 5.0 and 16 ± 4.5, respectively. No statistical significant difference was noted when compared between the genders.

Similarly the overall mean values of burnout for upper class and upper middle class were 30.27 ± 8.8 and 32.25 ± 9.5. Whereas, the mean values of emotional exhaustion were 10.9 ± 4.4 and 11.80 ± 4.2, cynicism was 6.2 ± 4.4 and 7.66 ± 3.6 and professional efficacy was 15.19 ± 4.9 and 17.14 ± 4.0, respectively. No statistical significant difference was noted when compared between the social classes.

After applying strict rule of burnout syndrome statistically significant increase in burnout syndrome (P = 0.029) with odds ratio 3.97 times was found in KLEU dental students when compared to RGHUHS dental students [Table 2].

Discussion

In the present study, two colleges of two different universities were selected to rule out the possibility of whether variation in curriculum of two different universities could result in different outcome of burnout and stress score of the study participants. Basically in the KLEU curriculum, short research topics are mandatory for final year students. The objective questions are included in final year theory examination and Practical/clinical examination pattern is based on Objective Structured Practical Examination/Objective Structured Clinical Examination which is not the case with in the dental colleges under RGHUHS.

The recognition of burnout as a public health problem led to its inclusion in the list of occupational diseases related to work.[11]

Dentists, who are in contact with the patients, have to settle financial matters, maintain specific working posture, and work...
within the limited space of the oral cavity. These are some of the dental professional specificities which can lead to high levels of stress among them.[16,17]

The literature has shown that the severity of this stress, collective with factors such as lack of energy and enthusiasm, feelings of exhaustion, and emotional instability, may lead to the onset of burnout syndrome.[11]

To address this situation, there is a need for an early identification of symptoms related to burnout, which should preferably take place when workers are still in training, i.e. during their graduate course.

In India, there has been an increase in the number of women taking up dentistry. This has been identified in the present study. Also, 77.4% of the study participants in the final year of under graduation being females.[18]

Differences in burnout and perceived stress between male and female students showed no statistically significant difference. This is in agreement with the findings reported by Juliana et al.[12] this finding could be due to the sample being predominated by females.

Eighty percent of the dental students of KLEU belonged to high socio-economic status when compared to dental students of RGUHS which was 37.4%. Therefore, it could be a reason that high socio-economic status also plays a significant role in low perceived threshold level towards stress and burnout by the dental students.

Burnout mean score when compared between undergraduate dental students of the two universities showed no statistical significance.

Exhaustion domain showed no statistical significant difference between KLEU and RGUHS students, whereas statistical significant difference was seen between dental students with KLEU students scoring higher on cynicism and professional efficacy than RGUHS students. Similar observation was made by Juliana et al.[11]

After applying strict rules of burnout syndrome i.e. only those students who exceeded the cut-off score on all three domain where included for analysis, statistical significant results were found in which four times high levels of burnout syndrome were registered in the undergraduate dental students of KLEU when compared to RGUHS due to increased extra - curriculum activities like sports and cultural events in KLEU. These results are in accordance with the study conducted by Alemany‑martinez et al.[19]

A study conducted by Tangade P et al., Acharya S et al. showed a high level of stress among the undergraduate dental students.[10,20] Similar results were seen in the present studies with high level of stress found in undergraduate dental students of both the universities and these could be due to the fact that dentistry as profession requires more precision which in turn increases the stress level.

The present study found statistical significant results in Stress mean score, stress being higher in KLEU when compared to RGUHS undergraduate dental students. As KLEU has raised its standard to be NAAC “A” accredited, change in examination pattern could be the reason for increase stress in students of KLEU.

In the present study, there were some limitations, it could not establish the etiological factors related to burnout as it was a cross sectional study. Only one college was included from RGUHS which cannot be considered as representative of the university.

Conclusion
In the present study, there was no difference in burnout and stress between males and females and the social classes. Burnout and stress was found more in dental students of KLEU compared to RGUHS students.

The present study employed a relatively small sample and a narrow group consisting of final year dental students of two colleges. Thus, the findings cannot be extrapolated to other colleges. Further studies should be carried out to explore the reason and prevalence of stress and burnout among dental students in various different universities of India. It is important that the dental students should be provided a stress free college environment, so that the student can concentrate more on their studies in the curriculum.

References

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