Stress and professional burnout among newly graduated dentists

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Abstract

Background: Dentists encounter numerous professional stressful situations, beginning from education to day-to-day practice. The resulting stress tends to have a negative impact on their personal as well as professional lives. Objectives: To measure daily burnout, and to investigate the extent of expectations from dental career and the feeling of being unqualified new dental practitioner. Materials and Methods: A close-ended questionnaire, i.e., “the Copenhagen Burnout Inventory,” was utilized for evaluation. A total of 121 dentists with an experience ranging between 6 months and 5 years were included. The period was considered initiating from graduation to dental practicing in urban or rural areas. Ninety-seven dentists replied with filled questionnaires (80.16%). The multivariant analysis was done using SPSS 11.0 ver. (Chicago, USA). Results: Using measures analysis, the mean scores for dentists on the basis of age and sex (n = 97) were calculated. The factors most commonly considered responsible for professional burnout were emotional exhaustion (39.27%), frustrations (47.83%), feeling worn out at the end of the day (35.05%), feeling worn out at the end of the working day (46.80%), exhaustion in the morning at the thought of another day at work (35.05%), feeling that every working hour is tiring (46.80%), less energy and less time for family and friends (47.83%). The most common cause for stress was professional burnout that was recorded commonly in females in the age range of 26–28 years. Conclusions: Dentists are more prone for professional burnout, anxiety, and depression. The main reason for this is the nature of their practice and their personality traits, especially while pursuing dentistry as a carrier. Stress may lead to negative impact on dentists’ personal as well as professional lives.

Key words: Burnout, practice management, psychology

INTRODUCTION

Prolonged physical and psychological exhaustion perceived by an individual may lead to work burnout. There seems to be a drastic decline in the efficiency of dental students due to stress. Stress is the key factor in diminishing one’s efficiency at different age intervals.

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The very first induction of stress may be at school level, such as due to bureaucratic administration system. The need for passing the exams or factors like personality development may even play a role in stress induction.

Burnout of a person results from a combination of multiple dimensions which unite to deteriorate the efficiency of the person. Feeling of being depleted of one’s emotional resources is referred to as emotional exhaustion. Depersonalization refers to a negative, callous, or excessively detached response to the recipients of one’s service or care. Reduced personal accomplishment refers to a decline one’s feeling of competence.

For successful achievement in one’s work, emotional exhaustion is the key dimension that shows robust relationship with various job stressors, such as work overload, role problems, or lack of social support.[3–8]

The expectations of newly formed professionals are not “down to earth,” as they tend to expect more or less like fairy tales. This is called “reality shock,” which may end up in frustration, consequently leading to discomfort and emotional diversion from the job, one that was inspiring.[9,10]

Burnout level increases with deficient career opportunities and limited work. Stress and difficulty to get sufficient patient in the clinic have relatively high burnout risk. Monitoring recently graduated dental students can provide valuable information to explore “reality shock.” The main objective of this study was to monitor burnouts in early dental career. Furthermore, it was also aimed to investigate the dentists’ expectation with regard to work and the factors that may contribute to negligence of dental practice.

In recent practice, knowingly or unknowingly, a competition has developed among dentists for achieving peak of success. This, in turn, may cultivate the first seed of burnout among dentists that further leads to never ending exhaustion and frustration. Thus, it can be the main source of stress in reality for undergraduate dentists.[11,12] The source of stress may be the working environment, i.e. workplace, financial and practice management issues, and the type of personality of the individual. Developed stress may elicit various physiological and psychological effects in a person. The professional burnout eventually leads to emotional as well as mental exhaustion, which may further end up in a negative, indifferent, or cynical attitude of an individual toward patients, clients, or co-workers. Onset of stress not only affects the body, mood, and thoughts of individuals, but also involves a combination of hereditary, psychological, and environmental factors. However, episodes of depression may be precipitated by multiple mild stresses.

The aim of the present study was to determine the development of burnout risk in newly qualified dentists and to investigate the extent of expectations in young dentists with regard to work.

MATERIALS AND METHODS

Demographic status

Udaipur, being one of the major healthcare centers in Rajasthan, is spread over a total area of 37 km² and 625 m with an approximate population of 4 lacs. There are two medical and two dental colleges under the healthcare sector in Udaipur. There are more than 150 dentists practicing in their own private clinic or hospitals, on an average.

Sampling methods

Ethical approval for the study was obtained from the Institutional Ethical committee for Research, Darshan Dental College, Udaipur. The Copenhagen Burnout Inventory in English, based on a 5-point Likert scale and introduced by Kristensen et al.,[13] which is a widely accepted questionnaire[14–16] was used in the present study.

The close-ended questionnaire was distributed among newly qualified dentists for evaluation. A total of 121 dentists with experience ranging between 6 months and 5 years since graduation and practicing in urban or rural areas of Udaipur district were mailed the questionnaire. Their names were linked with a personal code to prevent bias. The survey was done by distributing questionnaires with postage return envelopes. A personal letter explaining the purpose of survey in neutral terms with confidential research protocol were Explained, with avoidance of any indication regarding burnout survey was taken care off.

Inclusion criterion was graduated dental surgeons, while the exclusion criteria included all incompletely filled questionnaire or dentists who did not respond to the mailed questionnaire.

RESULTS

Out of total 121 questionnaires, 97 were included in the final study (80.16%). There were 43.3% male and 56.7% female participants. Mean age of participants was 25.2 years (SD = 2.4). The multivariate analysis was done using SPSS 11.0 (SPSS, Inc., Chicago, IL USA).
Among the participants in the age group of 26–28 years, 39.27% were affected by emotional exhaustion and 47.83% individuals felt a high degree of burnout due to work. A total of 46.80% individuals felt worn out at the end of the day, while 47.83% individuals had time for their friends and family. The participants in the age group between 23 and 25 years were never tired during their working hours (46.80%), while 35.05% individuals of age group between 29 and 31 years were somewhat frustrated by their work [Table 1].

The female participants were predominantly affected by emotional exhaustion (78.13%). The other outcomes of stress included increased burnout due to work (81.83%), frustration due to work (59.96%), feeling worn out at the end of the working day (80.07%), feeling exhausted in the morning at the thought of another day at work (59.96%), feeling tired during working hours (80.07%), and not having enough time for friends and family (81.83%) [Table 2].

The questions analyzing the main stress-producing factors, i.e. “Do you feel worn out at the end of the working day?,” ‘Are you exhausted in the morning at the thought of another day at work?,” and “Do you feel that every working hour is tiring for you?,” had higher mean scores of 3.1, 3.5, and 4.25, respectively [Table 3].

Stepwise logistic regression analysis showed a significant relationship (P < 0.05) with the model for questions

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**Table 1: Age of participants and degree of burnout among participants**

| Age, years | Very high degree | High degree | Somewhat | A low degree | Very low degree | Total | P   |
|------------|------------------|-------------|----------|--------------|-----------------|-------|-----|
| Q1. Is your work emotionally exhausting? | 20-22 | 0 | 4.1 | 3.1 | 0 | 0 | 7.2 | 0.404 |
| | 23-25 | 6.2 | 8.2 | 14.4 | 3.1 | 0 | 32.0 |
| | 26-28 | 4.1 | 14.4 | 17.5 | 3.1 | 0 | 39.2 |
| | 29-31 | 0 | 11.3 | 9.3 | 1.0 | 0 | 21.6 |
| Total | 10.3 | 38.1 | 14.0 | 7.2 | 0 | 100 |
| Q2. Do you feel the burnout because of your work? | 20-22 | 0 | 4.1 | 1 | 2.1 | 0 | 7.2 | 0.133 |
| | 23-25 | 5.2 | 12.4 | 9.3 | 5.2 | 0 | 32.0 |
| | 26-28 | 1.0 | 16.5 | 17.5 | 4.1 | 0 | 39.2 |
| | 29-31 | 0 | 13.4 | 5.2 | 3.1 | 0 | 21.6 |
| Total | 6.2 | 44.4 | 33.0 | 14.4 | 0 | 100 |
| Q3. Does your work frustrate you? | 20-22 | 3.1 | 1 | 3.3 | 0 | 0 | 7.2 | 0.739 |
| | 23-25 | 12.4 | 6.2 | 10.3 | 3.1 | 0 | 32.0 |
| | 26-28 | 12.4 | 14.4 | 9.3 | 3.1 | 0 | 39.2 |
| | 29-31 | 4.1 | 5.2 | 11.3 | 1 | 0 | 21.6 |
| Total | 32 | 26.8 | 34 | 7.2 | 0 | 100 |
| Q4. Do you feel worn out at the end of working day? | 20-22 | 0 | 2.1 | 3.1 | 2.1 | 0 | 26.8 | 0.606 |
| | 23-25 | 0 | 9.3 | 11.3 | 8.2 | 3.1 | 45.4 |
| | 26-28 | 0 | 8.2 | 20.6 | 8.2 | 2.1 | 19.6 |
| | 29-31 | 0 | 7.1 | 10.3 | 1 | 3.1 | 8.2 |
| Total | 0 | 26.8 | 45.4 | 19.6 | 8.2 | 100 |
| Q5. Are you exhausted in the morning at the thought of another day at work? | 20-22 | 0 | 0 | 3.1 | 2.1 | 2.1 | 7.2 | 0.530 |
| | 23-25 | 3.1 | 6.2 | 6.2 | 6.2 | 10.3 | 32.0 |
| | 26-28 | 2.1 | 3.1 | 14.4 | 12.4 | 7.2 | 39.2 |
| | 29-31 | 1 | 2.1 | 7.3 | 3.1 | 5.2 | 21.6 |
| Total | 6.2 | 11.3 | 34.0 | 23.7 | 24.7 | 100 |
| Q6. Do you feel that every working hour is tiring for you? | 20-22 | 0 | 0 | 1 | 5.2 | 1 | 7.2 | 0.613 |
| | 23-25 | 0 | 0 | 6.2 | 8.2 | 17.5 | 32.0 |
| | 26-28 | 0 | 1 | 7.2 | 13.4 | 17.5 | 39.2 |
| | 29-31 | 0 | 0 | 4.1 | 8.2 | 9.3 | 21.6 |
| Total | 0 | 1 | 18.6 | 35.1 | 45.4 | 100 |
| Q7. Do you have enough energy for family and friends during leisure time? | 20-22 | 5.2 | 2.1 | 0 | 0 | 0 | 7.2 | 0.244 |
| | 23-25 | 15.5 | 6.2 | 7.2 | 3.1 | 0 | 32.0 |
| | 26-28 | 19.6 | 15.5 | 3.1 | 1.0 | 0 | 39.2 |
| | 29-31 | 6.2 | 9.3 | 4.1 | 2.1 | 0 | 21.6 |
| Total | 46.4 | 33 | 14.4 | 6.2 | 0 | 100 |
“Q5 Are you exhausted in the morning at the thought of another day at work?” and “Q6 Do you feel that every working hour is tiring for you?,” keeping the age and sex of the participants constant [Table 4].

DISCUSSION

The aim of the present study was to determine the burnout risk in newly qualified dentists and to investigate the extent of expectations among young dentists regarding work.

At a group level, young dentists showed no burnout signs after graduation (less than a year of practice) when compared with the manual norm score. The mean levels of emotion exhaustion, depersonalization, and personal accomplishment appeared favorable at both points of time. On the other hand, individual risk...
### Table 3: Mean burnout scores (SD) among participants according to age groups and sex

| Age, years | Sex | Q1    | Q2    | Q3    | Q4    | Q5    | Q6    | Q7    |
|------------|-----|-------|-------|-------|-------|-------|-------|-------|
| 20-22      | M   | 2.43  (0.53) | 2.71 (0.95) | 2.00 (1.0) | 3.00 (0.82) | 3.86 (0.90) | 4.00 (0.58) | 1.29 (0.49) |
|            | F   | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 23-25      | M   | 2.38 (0.92) | 2.33 (0.91) | 2.05 (1.07) | 3.19 (0.98) | 3.43 (1.47) | 4.29 (0.78) | 1.81 (1.08) |
|            | F   | 2.60 (0.97) | 2.70 (1.06) | 2.30 (1.06) | 3.10 (0.99) | 3.50 (1.27) | 4.50 (0.85) | 2.20 (1.03) |
| 26-28      | M   | 2.67 (0.89) | 2.75 (0.62) | 2.17 (1.11) | 3.00 (0.95) | 3.08 (1.31) | 4.42 (0.79) | 1.25 (0.45) |
|            | F   | 2.42 (0.76) | 2.58 (0.76) | 2.04 (0.87) | 3.15 (0.73) | 3.69 (0.88) | 4.12 (0.86) | 1.81 (0.80) |
| 29-31      | M   | 2.00 (0.00) | 3.00 (0.00) | 3.00 (0.00) | 3.00 (0.00) | 4.00 (0.00) | 2.00 (0.00) | 0     |
|            | F   | 2.65 (0.83) | 2.55 (0.83) | 2.12 (1.04) | 3.10 (0.91) | 3.38 (1.31) | 4.26 (0.73) | 1.57 (0.86) |
| Total      | M   | 2.45 (0.83) | 2.56 (0.81) | 2.20 (0.91) | 3.09 (0.89) | 3.58 (1.05) | 4.24 (0.84) | 1.98 (0.91) |
|            | F   | 2.51 (0.74) | 2.56 (0.82) | 2.16 (0.96) | 3.09 (0.89) | 3.49 (1.16) | 4.25 (0.79) | 1.80 (0.91) |

M=Male, F=Female, SD=Standard deviation

### Table 4: Stepwise logistic regression of participant burnout scale

| Coefficients | t  | P   |
|--------------|----|-----|
| B            | Std. error |
| Model 1      | Predictors: (constant), sex, age, dependent variable: Q1 |
| (Constant)   | 1.921 | 1.531 | 1.255 | 0.213 |
| Age          | 2.272E-02 | 0.055 | 0.427 | 0.671 |
| Sex          | -7.269E-03 | 0.198 | -0.037 | 0.971 |
| Model 2      | Predictors: (constant), sex, age, dependent variable: Q2 |
| (Constant)   | 2.677 | 1.606 | 1.667 | 0.099 |
| Age          | -3.433E-03 | 0.056 | -0.061 | 0.951 |
| Sex          | -2.349E-02 | 0.208 | -0.113 | 0.910 |
| Model 3      | Predictors: (constant), sex, age, dependent variable: Q3 |
| (Constant)   | -2.287E-02 | 1.882 | -0.012 | 0.990 |
| Age          | 8.119E-02 | 0.065 | 1.240 | 0.218 |
| Sex          | 9.573E-02 | 0.244 | 0.392 | 0.696 |
| Model 4      | Predictors: (constant), sex, age, dependent variable: Q4 |
| (Constant)   | 3.490 | 1.753 | 1.991 | 0.049 |
| Age          | -1.421E-02 | 0.061 | -0.233 | 0.816 |
| Sex          | -2.660E-02 | 0.227 | -0.117 | 0.907 |
| Model 5      | Predictors: (constant), sex, age, dependent variable: Q5 |
| (Constant)   | 6.360 | 2.268 | 2.804 | 0.006 |
| Age          | -9.083E-02 | 0.079 | -1.151 | 0.253 |
| Sex          | -0.399 | 0.294 | -1.355 | 0.179 |
| Model 6      | Predictors: (constant), sex, age, dependent variable: Q6 |
| (Constant)   | 3.150 | 1.553 | 2.029 | 0.045 |
| Age          | 3.737E-02 | 0.054 | 0.692 | 0.491 |
| Sex          | -0.424 | 0.226 | -1.877 | 0.064 |
It is strongly recommended that combined the information from graduated dentists. Among other professions, this kind of burnout risk increases with advancing age, especially among male dentists, while recent information states that younger dentists show the first sign. Apparently, burnout affects a various group of dentists after some years of practice. Hence, dental associations are able to help dentists by offering more objective means of early burnout warning, such as periodic burnout evaluation. An interesting description of burnout feedback system can be found in Tê Brakeset al. After graduation, dentists need to adapt to a huge requirement of practice. As found in the present study shows that practice management issues leads to worry. There are many aspects of professional functioning that have to be dealt with fully in a way that does not allow mistake. It is accepted that the present study has many limitations due to a small number of participating subjects at both times, which influences the outcome. Interpretation of data was performed by cross-sectional research among dentists, in which it was found that majority of dentists suffered from professional burnout after many years of practice management. Burnout risk increases with advancing age, especially among male dentists, while recent information states that younger dentists show the first sign.

Future research on burnout among dental students and newly qualified dentists should focus on longitudinal studies. The advantage of longitudinal studies is that it can highlight early warning signals of future burnout risk. The present study does not fully satisfy in discovering these early warning signals, because of the small sample size. Till date, very few studies relating stress and burnout among dental students could be traced that combined the information from graduated dentists. Among other professions, this kind of burnout research also appears to spear. An exception of this was found in a recent study by McManas et al. An interesting finding of these studies was that emotional burnout, exhaustion, and depersonalization long after graduation could be predicted by certain personal characteristics. The big challenge is to decrease the level of stress to prevent the burnout risk among dental graduates, as more stress is given to dental students during the last decades. It is strongly recommended to use longitudinal studies in the future for evaluating students’ stress. Also, implementing Person-related factors such as coping style, hardiness, and depression vulnerability is valuable, which may be provided for effective burnout prevention among dentists.

CONCLUSION

Stress management should be considered important for dental students and practicing dentists. The dental educational curriculum should uplift and highlight the importance of business management, stress management, and communication skills. Stress should be considered one of the occupational hazards for dental profession. Nowadays, some dental associations offer stress management workshops, professional help, counseling services, and support networks. In addition, dentists must realize about their expectations and attitudes, if they are realistic, achievable, or rational. Hence, dentists should avoid development of such burnout risk factors and even the government should create more professional opportunities for dental graduates.

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Conflicts of interest
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REFERENCES

1. Sugiuara G, Shinada K, Kawaguchi Y. Psychological well-being and perceptions of stress amongst Japanese dental students. Eur J Dent Educ 2005;9:17-25.
2. Humphris G, Bänkholm A, Freeman R, Gorter R, Hoad-Redlick G, Murtomaa H, et al. Psychological stress in undergraduate dental students: Baseline results from seven European dental schools. Eur J Dent Educ 2002;6:22-9.
3. Schaufeli W, Enzmann D. The Burnout Companion to Study and Practice: A Critical Analysis. London, UK: CRC Press; 1988.
4. Maslach C, Jackson SE. The measurement of experimental burnout. J Occup Behav 1981;2:99-113.
5. DiMatteo MR, Shugars DA, Hays RD. Occupational stress, life stress, and mental health among dentists. J Occup Organ Psychol 1993;66:153-62.
6. Croucher R, Osborne D, Marches W, Sheiham A. Burnout

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indication reveals an increasing ratio of young dentists reporting unfavorable levels of burnout. Stressfulness of Work and practice management factors in which reality was experienced to be worse than expected. With regard to burnout, an interesting aspect of the present findings was that although group mean levels were unfavorable, data reveal unfavorable tendency at a more individual level. Apparently, most of the dentists who were newly qualified showed efficiency to bear with stressful work. This is in line with the study in which a representative sample of the full Dutch dental professionals was surveyed, wherein mean level of dentists appeared favorable when compared with normal scores while still working. The same tendency can be seen in the present study; some dentists fall in the range of “high” or even “very high” on emotional exhaustion. It should be noted that the high and very high ranges are based upon clinically validated manual norm scores.

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and issues of the work environment reported by general dental practitioners in the United Kingdom. Community Dent Health 1998;15:40-3.
7. Locker D. Work stress, job satisfaction and emotional well-being among Canadian dental assistants. Community Dent Oral Epidemiol 1996;24:133-7.
8. Vincent MO. Some sequelae of stress in physicians. Psychiatr J Univ Ott 1983;8:120-4.
9. Gorter RC, Eijkman MA. Career expectations and the type of dentist in the light of burnout. Ned Tijdschr Tandheelkd 2002;109:212-6.
10. Freudenberg HJ. Staff burnout. J Soc Issues 1972;30:159-65.
11. Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory Manual. 3rd ed.. Palo Alto, CA: Consulting Psychologist Press Inc.; 1996.
12. Pöhlmann K, Jonas I, Ruf S, Harzer W. Stress, burnout and health in the clinical period of dental education. Eur J Dent Educ 2005;9:78-84.
13. Kristensen TS, Borritz M, Villadsen E, Christensen KB. The Copenhagen burnout inventory: A new tool for the assessment of burnout. Work Stress 2005;19:192-207.
14. Schaufeli WB, van Dierendonck D. Maslach Burnout Inventory, Nederlands versie (MBI-NL). Provisional Manual. Utrecht, The Netherlands: Utrecht University, Research School Psychology and Health; 1995.
15. Schaufeli WB, van Dierendonck D. UBOS: Utrechtse Burnout Schaal. Handleiding [UBOS: Utrecht Burnout Scale: Manual]. Lisse, The Netherlands: Swets Test Publishers; 2000.
16. Gorter R, Albrecht G, Hoogstraten J, Eijkman MA. Factorial validity of the Maslach burnout inventory-Dutch version (MBI-NL) among dentists. J Organ Behav 1999;20:209-17.
17. Gorter RC, Albrecht G, Hoogstraten J, Eijkman MA. Professional burnout among Dutch dentists. Community Dent Oral Epidemiol 1999;27:109-16.
18. King MB, Cockcroft A, Gooch C. Emotional distress in doctors: Sources, effects and help sought. J R Soc Med 1992;85:605-8.
19. Humphris G. A review of burnout in dentists. Dent Update 1998;25:392-6.
20. Osborne D, Croucher R. Levels of burnout in general dental practitioners in the south-east of England. Br Dent J 1994;177:372-7.
21. te Brake H, Eijkman MA, Hoogstraten J, Gorter R. Dentists’ self assessment of burnout: An internet feedback tool. Int Dent J 2005;55:119-26.
22. Alexander RE. Stress-related suicide by dentists and other health care workers: Fact or folklore? J Am Dent Assoc 2001;132:786-94.
23. Burke RJ, Richardsen AM. Stress, burnout, and health. In: Cooper CL, editor. Handbook of Stress, Medicine and Health. New York: CRC Press; 1996. p. 101-17.
24. McManas IC, Keeling A, Paice E. Stress, burnout and doctors’ attitudes to work are determined by personality and learning style: A twelve year longitudinal study of UK medical graduates. BMC Med 2004;2:29.
25. Schaufeli WB, Salanova M, Gonzalez-Roma V, Bakker AB. The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. J Happiness Stud 2002;3:71-92.
26. Blinkhorn AS. Stress and the dental team: A qualitative investigation of the causes of stress in general dental practice. Dent Update 1992;19:385-7.