

Occupational Stress in Orthodontists in India: A Prospective Observational Study

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ABSTRACT

Background: Stress is a universal phenomenon, excess of which results in intense and distressing experience. Occupational stress refers to a situation where occupation-related factors interact with an employee to change i.e. disrupts or enhances his / her psychological and or physiological conditions such that the person is forced to deviate from normal functioning. Occupational stress is generally defined in terms of the relationship between a person and his environment.

Materials & Methods: The study comprises randomly selected Orthodontists from 6 zones of India (North, North- East, South, East, West and Central). A total of 1000 participants were included with the following Study Variable. Occupational Stress in 3 Groups of Orthodontists in 6 zones of India. With the following Inclusion Criteria, Qualified and Licensed Orthodontist with an Eligible Post Graduation degree, Orthodontists who are Practicing in India (as a Clinician/in Academics), and Orthodontists who will respond to the Questionnaire.

Results: Results suggest that clinicians interested in decreasing occupational stress should first consider ways to improve their time-management skills. An issue that must be considered when reviewing the results of this study is the amount of variation in the responses. Pronounced differences were seen in response to the severity of the 41 potential stressors. Each item was scored as "very stressful" by at least one orthodontist, and as "not stressful" by at least one other.

Conclusion: Time-management skills appear to have a strong effect on occupational stress and job satisfaction. Future studies could examine the effectiveness of time-management techniques and time-management training in orthodontics.

Keywords: Occupation, Stress, Orthodontics.

INTRODUCTION

Stress is a universal phenomenon, excess of which results in intense and distressing experience.

Occupational stress refers to a situation where occupation-related factors interact with an

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employee to change i.e. disrupts or enhances his / her psychological and or physiological conditions such that the person is forced to deviate from normal functioning. Occupational stress is generally defined in terms of the relationship between a person and his environment. There is potential for stress when an environmental situation is perceived as presenting demand which threatens to exceed the person's capabilities and resources for meeting it. Every occupation has some stress, which may differ in its degree (Bhatt, 2013)¹.

The ANS responds reflexively to both physical stressors (for example baroreceptor), and to higher-level inputs from the brain². Researchers have focused on many aspects of stress, including the psychological processes, physiological processes, neurochemical processes, coping with stress, stress-induced illness, assessment of stressful life events and beneficial stress³.

Among many fields, stress research that has developed is the study of stress in the workplace. The study of occupational stress stems from the proposition that some aspects of many kinds of work have bad effects on most people under certain circumstances³. Very few occupational stress studies have involved an orthodontic cohort. A review of the literature involving general dentistry allows the reader to become familiar with the study methods used in a field similar to orthodontics.⁶ The occupational stress associated with general dentistry has been previously researched, and with good reason. Dentists often report, and research has consistently shown that their job is stressful.¹¹ It has been suggested that dentistry may actually be the most stressful health care profession and one of the most stressful of all professions.^{6,12}

The most commonly used method to identify stressful aspects of dentistry is the self-administered survey. A review of the literature found that almost all of the reported studies used this method.¹³⁻²⁶ Only two studies used an alternate method; the previously described study by Reitemeier²⁷ and a report by Humphris and Cooper.²⁸ The latter study used semi-structured interviews of 10 dental practitioners to evaluate occupational stress. Self-administered surveys do introduce some sources of error. These include social desirability bias, acquiescence response set, and non-response error. These biases and errors

require all surveys to be well-constructed and carefully worded.²⁹

The literature, however, lacks adequate reports of stressors in orthodontic practice. The effect of these stressors on the job satisfaction of orthodontists has also not been documented well. The goal of this study is to thoroughly evaluate potential stressors, with the following objectives to determine the most Stressful Aspects of Orthodontic Practice as well as to determine the most frequently occurring Stressors in Orthodontic Practice.

MATERIALS AND METHODS

After the ethical clearance which was obtained from the Ethical Committee of our university. Study Design consists of Orthodontists; they are divided into Three Groups: Group A: Orthodontist working as Clinician only. Group B: Orthodontist working in Academics only. Group C: Orthodontist working as Clinician and in Academics both.

The study comprises randomly selected Orthodontists from 6 zones of India (North, North-East, South, East, West and Central). A total of 1000 participants were included with the following Study Variable. Occupational Stress in 3 Groups of Orthodontists (Group a, Group b, Group c) in 6 zones of India. With the following Inclusion Criteria, Qualified and Licensed Orthodontist with an Eligible Post Graduation degree, Orthodontists who are Practicing in India (as a Clinician/in Academics), and Orthodontists who will respond to the Questionnaire.

Students who are pursuing Post Graduation in Orthodontics and Graduates who are doing Orthodontic Practice in Clinics were excluded.

41 Questions are framed using a list of Potential Stressors and each Orthodontist was mailed via E-mail, and Google Forms, with Copy of Introduction letter. Potential Stressors were divided into 5 Categories: Income, Patient, Staff, Time and Work-related Stressors. Respondents were asked how stressful each item was (severity) and how frequently it occurred. Severity was scored using a five-point Likert's type scale with the endpoints Not Stressful(1) Mildly Stressful (2), Moderately Stressful (3), Severely Stressful (4), Very Severely Stressful" (5). The frequency was scored using a

five-point scale as N- never, R- rarely, M- monthly, W- weekly, D- daily.

The survey was coded, and data were entered into Microsoft Excel 2013 (Microsoft Corp., Redmond, WA). Data were analyzed using Excel 2013 and SPSS 20.0 for Windows (SPSS Inc., Chicago, IL).

The mean frequency score of each item was calculated to determine the most frequently occurring stressors in orthodontic practice. The mean category score for each of the six stressor categories was calculated using the severity scale. Factors affecting occupational stress was calculated Fig 1: Questionnaire.

as the special effect of personal and practise characteristics on the overall occupational stress score determined. Independent sample t-tests were used for characteristics represented by nominal variables. One-way ANOVA with Tukey post hoc comparisons was used for categorical variables and two-tailed Pearson correlation coefficients were used for scalar variables.

Results

Out of 1000 google forms request we received 429 responses.

Questions	How stressful?	How often?
1. You Belong To Which Of The Following Category	1 2 3 4 5	N R W M D
2. You Belong To Which Geographical Location	1 2 3 4 5	N R W M D
3. Patient Expressing Treatment Charges Are High	1 2 3 4 5	N R W M D
4. Patient Being Late / Missing Appointment	1 2 3 4 5	N R W M D
5. Patient Dissatisfied With Their Received Treatment And Unreal Expectations	1 2 3 4 5	N R W M D
6. Patient/ Parent Questioning	1 2 3 4 5	N R W M D
7. Pressure To Remove Appliances Prior To Treatment Completion	1 2 3 4 5	N R W M D
8. Treating Adult Patients	1 2 3 4 5	N R W M D
9. Difficulty in Gaining Patient's Confidence/Trust	1 2 3 4 5	N R W M D
10. Motivating Patient For Extraoral Appliances /Elastics	1 2 3 4 5	N R W M D
11. Relapse In Patient With Retainers	1 2 3 4 5	N R W M D
12. Patients Not Accepting Preferred Treatment	1 2 3 4 5	N R W M D
13. Patient With Broken Appliance	1 2 3 4 5	N R W M D
14. Lack Of Patient Appreciation	1 2 3 4 5	N R W M D
15. Treating A Case With Unfavourable Prognosis	1 2 3 4 5	N R W M D
16. Accepting Compromise Treatment Result	1 2 3 4 5	N R W M D
17. Patient's Fee Payments (Quoting/Collecting/Missing)	1 2 3 4 5	N R W M D
18a. Motivating Patient With Poor Oral Hygiene / Decalcification	1 2 3 4 5	N R W M D
19. Maintaining Good Relation With Referral Source	1 2 3 4 5	N R W M D
20. Managing Uncooperative Patients	1 2 3 4 5	N R W M D
21. Fatigue Due To Frequent Travelling For Visits	1 2 3 4 5	N R W M D
23. Repayment Of Personal Student Loans	1 2 3 4 5	N R W M D
24. Maintaining Patient Records	1 2 3 4 5	N R W M D
25. Having To Train New Assistant	1 2 3 4 5	N R W M D
26. Dealing With Complaints From Staff	1 2 3 4 5	N R W M D

27. Staff Illness	1 2 3 4 5	N R W M D
28. Communication Problem With Staff	1 2 3 4 5	N R W M D
29. Competition From Other Orthodontists	1 2 3 4 5	N R W M D
30. Keep Schedule /Falling Behind Schedule	1 2 3 4 5	N R W M D
31. Long Work Hours / Overworked	1 2 3 4 5	N R W M D
32. Physical Demand Of Practice	1 2 3 4 5	N R W M D
33. High Concentration Level	1 2 3 4 5	N R W M D
34. Transferring Out Patient From Another Area To Your Clinic And Vice Versa	1 2 3 4 5	N R W M D
35. Limited Time Per Patient	1 2 3 4 5	N R W M D
36. Lack Of Time For Family	1 2 3 4 5	N R W M D
37. Inability To Meet My Own Expectations	1 2 3 4 5	N R W M D
38. Managing Paperwork	1 2 3 4 5	N R W M D
39. Administrative Duties	1 2 3 4 5	N R W M D
40. Communication Problem With Other Specialists	1 2 3 4 5	N R W M D
41. Overall How Stressful Do You Find The Practice Of Orthodontics	1 2 3 4 5	N R W M D

Table 2: Occupational stress in different groups.

DEMOGRAPHICS	PERCENT %
ACADEMICIAN ONLY	23.1%
CLINICIAN ONLY	28.7%
BOTH	48.3%

Table 3: Occupational stress in orthodontists according to geographical location.

GEOGRAPHICAL LOCATION	PERCENT %
NORTH	18.2%
EAST	11.9%
WEST	19.1%
SOUTH	46.4%
NORTH-EAST	
CENTRAL	

This study identified many sources of stress; some of these are common to dentistry, while others are unique to orthodontics. The items identified as the most stressful, based on mean severity scores are "The patient shows dissatisfaction with the care received", "Performing clinical tasks on a difficult or uncooperative patient", "Falling behind schedule".

The results indicated that most severe stressors usually occurred infrequently, and the most frequent stressors usually were not very severe.

The most concerning stressors are those with high severity and frequency.

These items are defined as having mean severity and mean frequency scores of 3.00 or greater. These are: "Falling behind schedule", "Trying to keep to a schedule", "Constant time pressures", "Patients with broken appliances", "Motivating patients with poor oral hygiene and/or decalcification".

Most frequently occurring stressors based on mean frequency scores are "Managing adult patients", "Patients being late for or missing adjustment

appointments", "Motivating patients with poor elastic and/or headgear compliance".

Table 4: Potential stressors with the highest frequency and severity.

Questions	Mean
15. Treating a case with unfavourable prognosis	3.6317
32. The physical demand of practice	3.5711
38. Managing paperwork	3.5664
33. High concentration level	3.5338
31. Long work hours / overworked	3.4149
11. Relapse inpatient with retainers	3.0536
30. Keep schedule /falling behind schedule	3.0536
8. Treating adult patients	3.028
24. Maintaining Patient Records	2.7879

These items were considered the most concerning stressors in orthodontic practice and Mean category scores for the 10 categories of stressors are presented in the above table. The category with the highest mean score was time-related stressors. Paired t-tests showed this category score to be significantly ($p < 0.01$) higher than all of the other category scores. No statistically significant difference was found between the next highest categories: staff- and patient-related stressors.

Overall occupational stress scores ranged from 0 to 99 with a mean of 39.57 (SD 8.52). This study was constructed for the orthodontic population and included many items specific to the orthodontic profession. Most of the highly scored stressors received low-frequency scores. The frequency score for the most stressful item, "The patient shows dissatisfaction with the care received", was only 2.4 (SD=0.41) similarly, most of the frequent stressors had low severity scores. The most frequent stressor, "Managing adult patients" had a mean severity score (SD=0.96). The importance of considering the frequency of a stressor should be emphasized.

This analysis revealed 9 items that received a mean severity score of 3.0 or greater. This is less than the number reported by Bourassa and Baylard (5) following a study of dentists using the same scale

and a similar number of items. They reported 10 items with mean severity scores of 3.0 or greater.

Results suggest that clinicians interested in decreasing occupational stress should first consider ways to improve their time-management skills. An issue that must be considered when reviewing the results of this study is the amount of variation in the responses. Pronounced differences were seen in response to the severity of the 41 potential stressors. Each item was scored as "very stressful" by at least one orthodontist, and as "not stressful" by at least one other. In most cases, the variation within responses to an item is smaller than the differences between items. This variation is to be expected based on current stress research. Personality and individual differences are known to have important influences on the stress response. The severity score standard deviations in this study are similar to those reported in other studies of dental stressors. (25) Perhaps the influence of personality and individual differences is most evident in overall occupational stress scores.

CONCLUSION

The goal of this research project was to thoroughly evaluate potential stressors, overall occupational stress in practising orthodontists. This was completed using an anonymous, self-administered, mail-out study distributed to 1000 orthodontists

practising in India. As this was the first study to evaluate occupational stress, previous research in the dental field was used for guidance during the project. The project was completed with the hope of finding information that may be helpful to an orthodontist who hopes to reduce occupational stress.

A large amount of individual variation is found in evaluations of overall occupational stress and potential stressors in orthodontics.

•The most concerning stressors in orthodontic practice seems to involve time- management and patient cooperation issues.

A limitation that was previously discussed was the wide range of the results. In most cases, individual differences within a variable were greater than the differences between variables. However, the variability seen in these results is similar to the amount of variation reported in other occupational stress and job satisfaction study.

I would recommend that Perhaps the area most deserving of study is the effectiveness of stress management training. The relationship between occupational stress and job satisfaction is clear, but the effectiveness of trying to change how orthodontists deal with stress is unclear. Time-management skills appear to have a strong effect on occupational stress and job satisfaction. Future studies could examine the effectiveness of time-management techniques and time-management training in orthodontics.

Final Comments

Throughout the course of this project, a great deal of feedback was received from orthodontists across the country. This topic is interesting because all orthodontists can relate to these issues, and everyone has an opinion to share. Perhaps this thesis will stimulate discussion on the topics of occupational stress and job satisfaction in orthodontics. Hopefully, this will help those few who feel that orthodontics is too stressful or who are dissatisfied with orthodontics.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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