

Original Research Article

Orthodontic occupational stress survey among Indian orthodontists- A cross-sectional study

Sonia Chauhan^{1*} ¹Dept. of Orthodontics & Dentofacial Orthopedics, Deen Dayal Upadhyay Zonal Hospital, Shimla, Himachal Pradesh, India.

Abstract

Aim: Aim of this study was to appraise the different aspect of orthodontic practice which causes stress among orthodontists practising in India.

Materials and Methods: The data was collected over a period of 3 months using Orthodontic Occupational Stress Questionnaire which was created using google form format. The form was circulated using whatsapp among the orthodontists practising in India. Data was collected and coded in using Excel sheet and analysed using SPSS version 21.

Results: A total of 103 responses were received of which 67% were male and 33% were female. For 53.4 % of the orthodontists the most stressful aspect of orthodontic practice was relapse in patient on retention after orthodontic treatment is over. The second stressful condition was when patient fails to comply with the treatment instructions. The third area of concern was when patient comes with a broken appliance and orthodontists has to repair or remake the appliance or refix the attachment which costs them their time, energy and resources. The fourth conditions which stresses out orthodontists was constant request by the patients to remove the appliance/ braces before the orthodontic treatment was over. Missing the appointment or being late for the scheduled appointment annoys the orthodontists who already are struggling to keep up the schedule. Sixth most concerning factor was poor oral hygiene despite repeated instructions among their patients which alters the future course of treatment.

Conclusion: The most stressful situation according to orthodontists practising in India was to see relapse in patients on retention after orthodontic treatment is over which highlights the concern of case selection by the orthodontists.

Keyword: Orthodontists, Occupational Stress, Factors, India

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1. Introduction

Stress can be defined as ‘external events or conditions that affect the organism.’¹ Stress is usually comprehended as a consequence of the failure of an individual to respond adequately to mental, emotional or physical demand.²

According to one study³ dental profession has been associated with high level of stress. Stress associated with occupation has been shown to have undesirable consequences like burnout and hypertension.⁴ Occupational stress is the study of aspects of work that either have or threaten to have, negative effects.⁵

Orthodontics is a branch of dentistry, which deals with the alignment of crooked teeth and enhancement of smile

esthetics of the patient. The orthodontists deals with the same patient for a long period of time before concluding the treatment and appointment with each patient demands long working hours due to which orthodontists may experience varying levels of stress. This stress if unchecked may lead to depression or mental disturbances.⁶

Various studies have been conducted around the world to assess the occupational stress among the orthodontists.^{3,4,6,7,8} Studies on occupational stress among orthodontists have been conducted in different countries like Canada,^{4,9,9} Morocco,⁷ Saudi Arabia,⁸ Italy,¹⁰ Australia.¹¹ This study aims to explore the reasons for occupational stress among Indian orthodontists working in government or private sectors.

*Corresponding author: Sonia Chauhan
Email: chauhan.sonia2508@gmail.com

2. Materials and Methods

This was a cross-sectional study conducted among 103 Indian orthodontists and orthodontic residents.

2.1. Inclusion criteria

1. Orthodontic practitioners with a degree in orthodontics in government or private practices
2. Orthodontic Residents in government or private colleges.

2.2. Exclusion criteria

1. Orthodontic practitioners and orthodontic residents practising outside India.
2. Orthodontists not indulging in active clinical practice.

2.3. Data collection

The data was collected over a period of 3 months using an Occupational Stress Questionnaire related to the practice of orthodontics created with the help of google form (Table 1)

Table 1: Orthodontic occupational stress survey: Questionnaire

Q-1	How stressful is it to treat children of 14-18 years of age?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-2	How stressful is it to treat adult patients?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-3	How stressful are the physical working condition in your department?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-4	How stressful is it to train new assistants?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-5	How stressful is it to keep a schedule?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-6	How stressful is it if a patient is late/misses an appointment?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-7	How stressful is it to maintain good communication with other specialist?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-8	How stressful is it to manage patients referred to you?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-9	How stressful is it when the patient fails to comply with the treatment instruction?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-10	How stressful is it to manage disagreement with co-workers regarding orthodontic care?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-11	How stressful is it when you see relapse in patients on retention after orthodontic treatment is over?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-12	How stressful is it when patients comes with a broken appliance?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-13	How stressful is it when parents/patients requests to remove appliance/braces before treatment is completed?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-14	How stressful is it to motivate the patients with poor oral hygiene?	a) Not Stressful	b) Moderately Stressful	c) Very stressful
Q-15	How stressful is it when there is lack of patient appreciation?	a) Not Stressful	b) Moderately Stressful	c) Very stressful

The questionnaire was circulated among the orthodontists using whatsapp group. Demographic information like age, gender, numbers of working hours, hospital settings, years of experience was collected. Questionnaire consists of 15 questions which assessed the level of stress experienced by the orthodontists while dealing with patients. The response was scored using 3 point Likert scale as follows: Not Stressful=1, Moderately Stressful=2 and Very Stressful=3.

2.4. Statistical analysis

The data collected from the questionnaire were coded and tabulated for statistical analysis using Microsoft Excel Spreadsheet Software. Data were analysed using the Statistical Package for Social Sciences (SPSS) Software. Descriptive statistics (frequencies, percentages, mean and standard deviation) were used to describe the categorical and quantitative variables.

3. Results

A total of 103 practicing orthodontists participated in the survey out of which 67% (69) were male and 33% (34) were female. A large portion of the participants 53% (55) were of the age group 31-40 years. 24.3% (25) of orthodontists worked for 51-60 hours/week. 82.5 % (85) of the orthodontists worked in private setting while only 17.5% (18) were government employees.

The response for 15 questions related to stress among orthodontists were calculated in percentages, mean and standard deviations.54.4% of the orthodontists found treating the children of 14-18 years of age stressful while for 57.3% of orthodontists found treating adult patient a stressful task. 48.5% admitted that the physical working condition of their department were stressful (**Figure 1**). 48.5% of participants found that it was stressful to train new assistants.

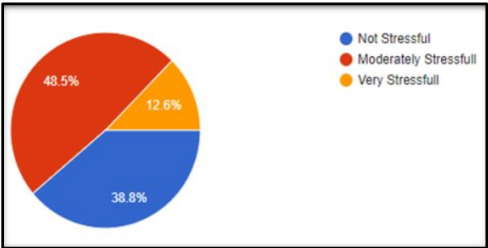


Figure 1: Stress related to physical working condition in department

57.3% of the practitioners struggled to keep a schedule (**Figure 2**). 42.7% of the orthodontists get irritated when a patient misses or is late for the appointment. 33% of the orthodontists find it difficult to communicate with other specialist regarding a case (

Figure 3). 46.6% of the orthodontists find it stressful to manage patients referred to them (**Figure 4**).

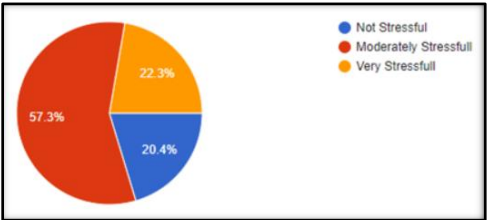


Figure 2: Stress related to keep a schedule

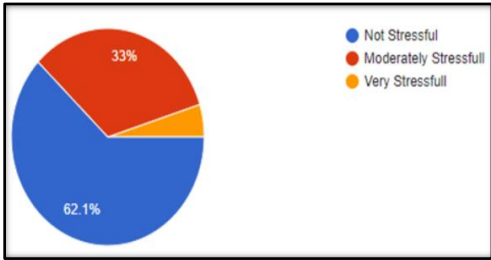


Figure 3: Stress to maintain good communication with specialist

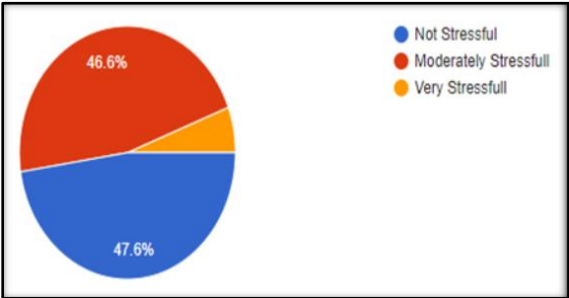


Figure 4: Stress to manage patient referred to orthodontist

51.5% of the orthodontists find it annoying when a patient fails to comply with treatment instructions. 43.7% of the practitioners find it stressful to manage disagreement with their co-workers regarding orthodontic case (**Figure 5**). Relapse in patient after orthodontic treatment stresses out 53.4% of the practitioners (**Figure 6**). 49.5% of the orthodontists find it most stressful when patient reports with a broken appliance.

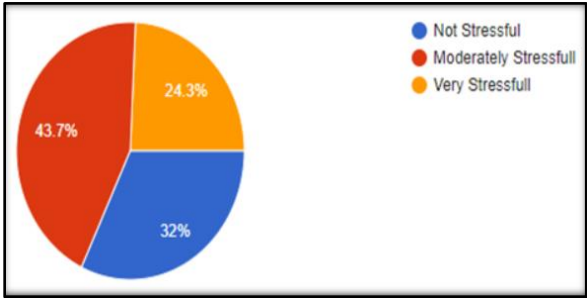


Figure 5: Stress to manage disagreement with co- workers

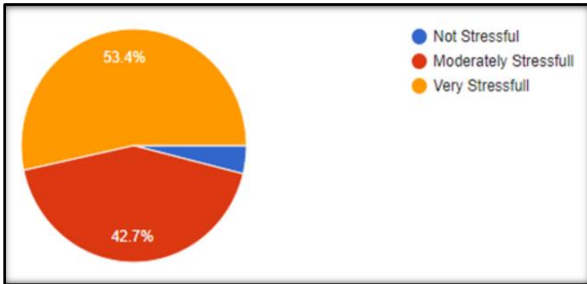


Figure 6: Stress due to relapse after orthodontic treatment

46.6% of the participants acknowledges request to remove appliance/ braces before treatment is over as most stressful condition(**Figure 7**).46.6% of the participants found it stressful to manage referred patients.48.5% of practitioner felt stressful when patient do not appreciate the efforts put in by the specialist in treating their malocclusion(**Figure 8**).The individual scores marked by the participants for 15 questions were tabulated after coding each response(based on Likert scale) and mean score for each was calculated.

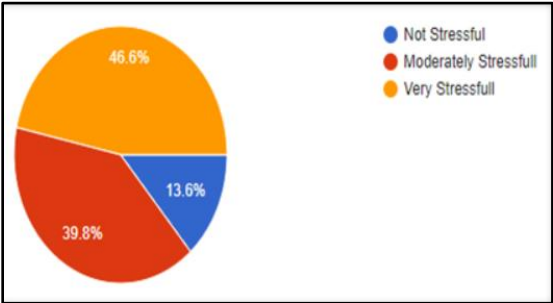


Figure 7: Stress when a patient requests to remove an appliance before treatment is over

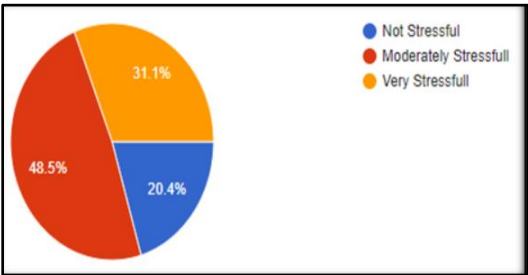


Figure 8: Stress when there is lack of patient appreciation

All the factors related to stress were ranked according to mean score a descending order (

Table 2). The stressors with a mean score greater than or equal to 2.20 were identified as those contributing significantly to occupational stress (**Table 3**).

Table 2: Rank order of stressors evaluated in the current study based on the mean severity score

Rank	Name of The Stressor	Mean	SD
1	Relapse in patients on retention after orthodontic treatment is over	2.50	0.57
2	Failure to comply with treatment instructions	2.44	0.63
3	Patients reporting with a broken appliance	2.41	0.66
4	Requests to remove appliance/braces before treatment is completed	2.34	0.70
5	If a patient is late/misses an appointment	2.25	0.71
6	To motivate the patients with poor oral hygiene	2.20	0.70
7	To train new assistants	2.18	0.69
8	When there is lack of patient appreciation	2.09	0.74
9	To keep a schedule	2.00	0.64
10	To manage disagreement with co-workers regarding orthodontic care	1.93	0.75
11	To treat adult patients	1.74	0.59
11	The physical working condition in your department	1.74	0.67
12	To treat children of 14-18 years of age	1.61	0.56
13	To manage patients referred to you	1.58	0.60
14	To maintain good communication with other specialist	1.43	0.58

Table 3: Stressors contributing significantly to occupational stress (Mean score ≥ 2.20)

Rank	Stressors contributing significantly to occupational stress	Mean	SD
1	Relapse in patients on retention after orthodontic treatment is over	2.50	0.57
2	Failure to comply with treatment instructions	2.44	0.63
3	Patients reporting with a broken appliance	2.41	0.66
4	Requests to remove appliance/braces before treatment is completed	2.34	0.70
5	If a patient is late/misses an appointment	2.25	0.71
6	To motivate the patients with poor oral hygiene	2.20	0.70

4. Discussion

Dentistry is contemplated to be a difficult profession among all medical profession especially in terms of training the apprentice and dealing with patients clinically.¹²⁻¹⁵ The items with a mean score of 2.20 or greater were considered as the most concerning stress factors in orthodontic practice. In the present study, the six most potent stressor among orthodontists are relapse in patient on retention after orthodontic treatment, failure of a patient to comply with treatment instructions, broken appliance, constant request of the patients to remove the braces /appliance before the completion of treatment, being late or missing the appointment and poor oral hygiene.

Relapse in patients after orthodontic treatment was the most stressful factor for practitioners in India. This finding was similar to that reported in Canadian,⁴ Nigerian¹⁶ and Indian¹⁷ orthodontists. Failure to comply with the treatment instructions was another area of concern. The result were similar to other studies.^{4,7,8}

Patient reporting back to the clinic with broken appliance or detached brackets/attachments was the 3rd area of concern for Indian orthodontists which was unlike other studies.^{4,7,8,16,17} Continuous request from the patients to remove the braces/ appliance before the treatment is over often stresses the clinicians as they fear relapse in incompleting cases. This finding was similar to a study conducted on Moroccan population but contrary to a few studies.^{4,8,16}

Missing or being late for the scheduled appointment was categorised as the fifth stressor among orthodontists which was categorised similarly by same studies.^{4,7,8,16,17} Poor oral hygiene among orthodontic patients infuriates the practitioners and despite repeated instructions to maintain good oral hygiene when patients fail to comply this naturally leads to stress among the orthodontists as future course of treatment is affected negatively. This finding was similar to studies conducted on Canadian⁴ and Moroccan⁷ population.

With the health care facilities reaching to the door steps of the community, the private practitioners are facing a lot of competition among each other to deliver the best possible care with limited time and money. This generates stress of competition among private orthodontic practitioner.

Meanwhile in areas where health care facilities are predominantly provided by the government schemes, the orthodontists at a government hospital are over burdened with patients. The need to provide best possible care is putting unparalleled strain on the well being of the practitioners which negatively affects their productivity.¹⁸

In order to address the problems related to stress, the orthodontists must pay more attention while choosing a case to avoid relapse. Patient must be made aware of the

limitations and scope of orthodontic treatment to avoid unnecessary unrealistic expectations on the part of patients.

Patients should be made responsible for any relapse after treatment in case of failure to maintain proper oral hygiene or comply with instructions. Patients reporting with broken appliance should be charged extra so that they deliberately take care of their appliance. Written consent should be taken prior to the treatment that if a patient requests prior removal of appliance or brackets then the sole responsibility of any relapse will be that of the patient.

Occupational stress depends upon an individual and his /her environmental interactions.¹⁹ Early recognition of occupational stress helps in preventing burnout in orthodontists.²⁰ According to a study⁴ there would be reduction in the level of stress if an orthodontist focuses on patient education, maintenance of oral hygiene and strict adherence to instruction.

Stress causes a lot of distress to mental and physical well being of a practitioner. Evidence suggests that there is a link between stress and musculoskeletal disorder.²¹ Orthodontists work on a number of patients throughout the day and follow the same repetitive hand movements which leads to the development of musculoskeletal disorders.²² This particularly affects the orthodontists practising lingual orthodontics. To overcome this problems dental students and specialists should be educated regarding correct working posture and habits.²³⁻²⁵

According to a study²⁶ health professional who undergo burnout early in their practice have more chances to retain their practice and follow a flexible work life approach. Humphris²⁷ advocated certain ways to alleviate stress conditions like anticipate problems, time management skill, relaxation, diet and working habits.

5. Conclusion

According to the present study relapse in patients after orthodontic treatment is over was the most stressful factor of concern among the Indian orthodontists followed by concern for the patients who fail to comply with the treatment instructions. Broken appliance and detached brackets and attachments was the third stressor for orthodontists.

Careful case selection and clear, strict instructions to the patient regarding maintenance of good oral hygiene and compliance with treatment schedules and taking utmost care of orthodontic appliance /attachments should be the prime objective of orthodontists. Flexible appointment schedules and accommodating referred/emergency patients should be the approach to lead a stress free, thriving and prosperous practice.

6. Source of Funding

None.

7. Conflict of Interest

None.

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