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## Challenges in Orthodontic Practice - Orthodontists' Perspective

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#### KEYWORDS

Bracket,  
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oral hygiene.

#### ABSTRACT:

**Aim:** The aim of present study was to evaluate common challenges faced by orthodontists during their daily practice while treating orthodontic patients.

**Materials & methods:** Study was conducted by an electronic questionnaire survey. A pre-structured questionnaire was made consisting of 21 multiple choice questions. The questionnaire included the personal information of the Orthodontists like their name, experience, and area of practice along with questions regarding challenges in orthodontic practice. Study questionnaire was sent to participants through email to 60 orthodontists. Out of 60 participants, 55 have responded to the survey questionnaire. The data from the questionnaire were tabulated in Microsoft Excel and analyzed statistically.

**Results:** Most of Orthodontists (83.88%) in the study believed that patients have unrealistic expectations from orthodontic treatment and 64.81% clinician observed that patients do not accept surgical treatment option. Mostly orthodontists (87.04%) reported that patients forget or loose elastics. High percentage of orthodontist (51.85%) observed poor oral hygiene as common problem in children followed by bracket breakage but in adults' irregular appointments was found to be common problem by 46.30% of orthodontist. Bracket breakage was more prevalent in premolar area as reported by 38.89% orthodontists followed by breakage of molar tubes by 35.19%



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**Conclusion;** Study concluded that bracket breakage and oral hygiene were common in children. Bracket breakage was more prevalent in premolar area. According to most of orthodontists patients did not share complete medical or dental history and patients also complains for long duration and high cost of treatment.

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## Introduction

Orthodontic treatment focuses on correction of various types of malocclusion such as crowding of teeth, increased overjet, overbite, spacing between teeth and cross bites etc. Orthodontic treatment enhances smile and facial esthetics of patient which is the common reason behind getting treatment among patients. Although treatment also maintains structural balance and provides good occlusion functioning for patients. Treatment includes both removable and fixed appliances and skeletal malocclusion may need surgical treatment also. Fixed orthodontic appliances used for correcting malaligned teeth are also known to evoke soft tissue response due to the irritation caused by the appliances like orthodontic bands and resin-bonded attachments. These also results in inability to maintain oral hygiene due to the hindrance of the orthodontic components, it may be unpleasing experience for patients. There are many other factors which make patients reluctant for treatment. These are: long duration of treatment, pain, discomfort from appliances, ulcers in mouth, extraction of teeth, cost of treatment and orthodontic appliances may pose speech problems for patients.

The field of Orthodontics has achieved great success with the emergence of new advanced technology which gives new road maps for orthodontists to design most accurate and precise diagnosis and treatment planning.<sup>1,2</sup> Despite these advancements, the treatment outcome is influenced by various factors such as clinical skills of

clinician, biological factors of patient, appropriate use of orthodontic appliances and patient compliance.<sup>3</sup>

To achieve good treatment results, patient compliance is needed during treatment in variety of aspects. Patients need to follow regular appointments, maintain good oral hygiene, wear removable appliance or elastics as directed by his/her orthodontist, take care of brackets to avoid breakage and follow the instructions given by orthodontist. The way how the patients behave in the clinic is referred as compliance, recently it is called as adherence. The adherence of patients to treatment is influenced by psychological and behavioral aspects of individual patients. It is very important that patients need to change their daily practices and show cooperation with the orthodontist and follow the instructions given by orthodontist. This conduct of patients result in desirable outcomes from orthodontic treatment.<sup>4</sup>

Various studies reported the association of patient adherence and treatment outcome and demonstrated that non adherence of patients is the main barrier in attainment of desired treatment outcome even with propitious treatment plan.<sup>5-7</sup> It was observed that non-adherence of patients to the treatment is not uniform throughout all the situations; rather, it can be condition-based. In some cases, patients might be adherent, but in other instances, they may show non adherence.<sup>8</sup> The compliance factors may vary according to age, gender and education level of patients. The poor compliance of patients is always make treatment challenging for orthodontist. Therefore the clinician must recognize the



factors of non adherence and take appropriate actions for this to improve patient compliance.<sup>8</sup>

The aim of present study was to evaluate common challenges faced by orthodontists during their daily practices while treating patients.

## Materials and methods

### Study design

Study was conducted by an electronic questionnaire survey. Prior approval has been taken from the ethical committee of the Dental College to proceed further for the study. A pre-structured questionnaire was made consisting of 21 multiple choice questions. The questionnaire included the personal information of the Orthodontists like their name, experience, and area of practice along with questions regarding challenges in orthodontic practice (Table 1).

### Sample participants

Participants were orthodontic professionals working in different areas of Punjab with different levels of experience in orthodontic practice. Consent has been taken from each participant to be included in the study. Participants included both male and female orthodontist aged between 30 to 50 years. Each orthodontist has minimum of three years experience. Study questionnaire was sent to each participant through email to 60 orthodontists. Out of 60 participants, 55 have responded to the survey questionnaire.

### Data collection

The participants answered the questionnaire based on their experiences in orthodontic settings. The data from the questionnaire were tabulated in Microsoft Excel and frequency distribution for each question was calculated.

S. No.	Question	Response
1.	Do patients have unrealistic expectations from orthodontic treatment?	Yes/No
2.	Do patients choose surgery as treatment option when needed	Yes/No
3.	Do patients complain of high cost of treatment	Yes/No
5.	Do patients often loose or forget wearing elastics	Yes/No
6.	Do patients share complete information regarding oral habits	Yes/No/ Sometimes
7.	Do patients easily agree for extractions	Yes/No/ Sometimes
8.	Do patients feel that all first premolar extraction negatively impact their smile esthetics	Yes/No/ Sometimes
9.	Do your patients remember their appointments without reminder	Yes/No/most times
10.	How likely are patients wear removable retainers after completion of treatment	a) Not likely b) Somewhat likely c) Very likely
11.	How stressful is your orthodontic practice	a) Little b) Not at all c) Very Little
12.	What are major problems you find with removable appliance?	a)Patient don't like to wear b)Patient forget to wear



		c)Patient lost the appliance d)All of the above
13.	Do you feel social media helpful in daily practice	Yes/No/ Sometimes
14.	Which patients complains for long duration of treatment	Male/ Female/ Both
15.	Which is more common problem in children	a)Bracket breakage b)Irregular appointments c)Poor oral hygiene
16.	Which is more common problem in adults	a)Bracket breakage b)Irregular appointments c)Poor oral hygiene d)Refusal for extractions
17.	Oral hygiene is problem in which patients	a) All Patients b) Few patients
18.	Bracket breakage is more common in which areas	a) Incisor b) Molar bands c) Molar tubes d) Premolars
19.	Do patients provide complete dental/ medical history	a) All b) Only few
20.	Which habit is more common in patients	a) Mouth breathing b) Nail biting c) Thumb sucking d) Tongue thrusting
21.	Bracket breakage more common in which patients	a) Adults b) Children c) Both

Table No. 1: Questionnaire used for study

## Results

Data collected was analyzed statistically. Most of Orthodontist (83.88%) in the study believed that patients have unrealistic expectations from orthodontic treatment and 64.81% clinician observed that patients do not accept surgical treatment option and 33.33% considered that only few patients agree for surgical treatment. Mostly orthodontist (87.04%) reported that patients forget or loose elastics which were given to them showing poor compliance of patients for wear of elastics (Table 2). High percentage of orthodontist (51.85%) observed poor oral hygiene as common problem in children followed by

bracket breakage but in adults' irregular appointments was found to be common problem as observed by 46.30% of orthodontist (Table 3). Study reported that bracket breakage was more prevalent in premolar area as reported by 38.89% orthodontists followed by breakage of molar tubes by 35.19% and 7.41% observed bracket breakage in incisor area (Table 3). It was reported that 53.70% Orthodontists believed female patient complains for longer duration of treatment whereas 44.44% believed that both males & females complain for longer duration of treatment. It was also observed in survey that



few orthodontists (1.85%) found that patients share complete information regarding oral habits, 38.89 % reported that patients do not share complete information

and 59.26 % believed that sometimes patients share information regarding their oral habits (Table 2).

S. No.	Question	Response frequency in percentage	
1.	Do patients have unrealistic expectations from orthodontic treatment?	Yes	83.88
		No	16.67
2.	Do patients choose surgery as treatment option when needed	Yes	1.85
		No	64.81
		Few	33.33
3.	Do patients complain of high cost of treatment	Yes	92.59
		No	7.41
5.	Do patients often loose or forget wearing elastics	Yes	87.04
		No	12.96
6.	Do patients share complete information regarding oral habits	Yes	1.85
		No	38.89
		Sometimes	59.26
7.	Do patients easily agree for extractions	Yes	7.41
		No	31.48
		Sometimes	61.11
8.	Do patients feel that all first premolar extraction negatively impact their smile esthetics	Yes	35.19
		No	16.67
		Sometimes	48.15
9.	Do your patients remember their appointments without reminder	Yes	18.52
		No	3.70
		most times	77.78
10.	How likely are patients wear removable retainers after completion of treatment	Not likely	25.93
		Somewhat likely	72.22
		Very likely	1.85

**Table No. 2: Frequency distribution of Responses recorded in survey**

S.No	Questions	Response frequency in percentage (%)	
1.	How stressful is your orthodontic practice	Little	70.37
		Not at all	14.81
		Very Little	14.81



2.	What are major problems you find with removable appliance?	Patient don't like to wear	11.11
		Patient forget to wear	1.85
		Patient lost the appliance	1.85
		All of the above	85.19
3.	Do you feel social media helpful in daily practice	Yes	25.9
		No	3.70
		Sometimes	70.37
4.	Which patients complains for long duration of treatment	Male	1.85
		Female	53.70
		both	44.44
5.	Which is more common problem in children	Bracket breakage	40.74
		Irregular appointments	7.41
		Poor oral hygiene	51.85
6.	Which is more common problem in adults	Bracket breakage	14.81
		Irregular appointments	46.30
		Poor oral hygiene	9.26
		Refusal for extractions	29.63
7.	Oral hygiene is problem in which patients	All Patients	75.93
		Few patients	24.07
8.	Bracket breakage is more common in which areas	Incisor	7.41
		Molar bands	18.52
		Premolars	38.89
		Molar tubes	35.19
9.	Do patients provide complete dental/ medical history	All	16.67
		Only few	83.33
10.	Which habit is more common in patients	Mouth breathing	14.81
		Nail biting	38.89
		Thumb sucking	29.63
		Tongue thrusting	16.67
11.	Bracket breakage is more common in which patient	Adults	7.41
		Children	53.70
		Both	38.89

**Table No. 3: Frequency distribution of responses recorded in survey**



## Discussion

In the present study 62.96% of Orthodontists were practicing in urban area whereas 35.19% were practicing in Semi Urban Area. Most of Orthodontist (83.88%) in the study believed that patients have unrealistic expectations from orthodontic treatment and 64.81% clinicians observed that patients do not accept surgical treatment option and 33.33% considered that only few patients agree for surgical treatment. So it showed that patients do not want surgical treatment when it is needed, but they want correction of their malocclusions. Most of orthodontists reported that their patients complain for high cost of treatment. The other normal routine dental procedures have less cost as compared to orthodontic treatment so patients always complain for this high cost.

As orthodontic treatment is of longer duration and successful treatment needs patient compliance throughout the treatment duration. In present study mostly orthodontist (87.04%) reported that patients forget or loose elastics which were given to them showing poor compliance of patients for wear of elastics. Similarly only 1.85% orthodontists believed that patients strictly wear removable retainers after completion of treatment. When removable appliances were given to patients, either they do not like to wear these appliances, or they forget or lost their appliances. Pauls et al<sup>9</sup> found that, to attain desired outcomes from treatment, patient should wear functional appliances for at least 12.8 hours per day, and wear time of active plates should be 13.9 hours per day. Various studies agreed that wear time of appliances never exceeds 7 to 9 hours of the prescribed 8 to 15 hours per day. It is very poor at 65% of the 13 hours prescribed and is likely to compromise the effectiveness of the orthodontic treatment.<sup>10</sup>

Another study reported that patients usually misinform clinician and declared that they wear orthodontic appliances for more hours than the real time of wearing. It was observed that if wear time of appliance is monitored by clinicians and caregivers, it does not necessarily enhance compliance for wearing removable appliance. When patients are informed that their wear-time is recorded, they tend to show increased compliance but still wear time of appliances is lesser than that prescribed by the clinician.<sup>11</sup>

High percentage of orthodontist (51.85% ) observed poor oral hygiene as common problem in children followed by bracket breakage but in adults' irregular appointments was found to be common problem by 46.30% of orthodontist. This may be due to the busier schedule and more responsibilities of adults but they maintain oral

hygiene and they take care of their brackets very well and as compared to children. Abuaffan AH et al<sup>12</sup> also reported good oral hygiene in their study but infrequent visits to the orthodontic clinic. Authors observed in their study that most of orthodontic patients brushed their teeth twice a day or more and some patients also received professional cleaning of teeth. Another study reported that acceptable level of awareness about oral hygiene in orthodontic patients which was influenced by various factors like gender and level of education.<sup>13</sup> Ammar MH et al<sup>14</sup> and Yang IH et al<sup>15</sup> found that more bracket breakage in teens as compared to adults which is in agreement with our results.

Bracket breakage was more prevalent in premolar area as reported by 38.89% orthodontists followed by breakage of molar tubes by 35.19% and 7.41 % observed bracket breakage in incisor area. Similarly Maryam Z et al<sup>16</sup> also observed that bracket breakage is more common in premolar area. Similar to this, another study also reported that bracket bond failure was greater in molar and premolar areas. Also the bracket breakage was higher in young orthodontic patients as compared to older patients,<sup>17</sup> this also showed agreement with our study result. The reasons of higher bracket breakage in younger patients may include careless behaviour and less self motivation in children where as adult patients are more responsible and follow instructions given by orthodontist.<sup>17</sup> Both these studies found that bracket bond failure was more in mandibular arch than maxillary, but in our study arch is not specified.

Talking about the stressful life of Orthodontists, 70.37% believed the orthodontic practice to be little Stressful. This stress may be due to compliance problem of patients, as the treatment duration is longer so it may be difficult to keep the patient motivated to achieve positive attitude and good compliance from patients which is necessary for attaining desirable outcomes from orthodontic treatment.

It was reported that 53.70% Orthodontists believed that female patients complain for longer duration of treatment whereas 44.44% believed both males & females complain for longer duration of treatment. But in contrast to this, Sharma S et al<sup>18</sup> done a study using questionnaire among orthodontic patients and they found that only 29.3% patients considered the long duration of treatment as problem for them.

Habits are one of the most important parts in Orthodontics as malocclusions can be caused or worsened by oral habits. Successful treatment outcome



needs elimination of etiology of malocclusion. So information regarding oral habits is crucial in diagnosis and treatment planning. According to survey nail biting is the most common habit seen by orthodontist followed by thumb sucking. It was also observed in survey that few orthodontists (1.85%) found that patients share complete information regarding oral habits, 38.89 % reported that patients do not share complete information and 59.26 % believed that sometimes patients share information regarding their oral habits.

Medical and dental history of patients also plays an important role as there are various medical conditions which need special precautions or alternation in treatment procedures. Drugs and hormones affect orthodontic tooth movement and some drugs affect gingival and periodontal health. According to survey 83.33% orthodontists found that only few patients share their complete medical/dental history to doctor.

Present study reported that 31.48% Orthodontists believed that patients do not easily agree for extraction of teeth, 61.11% considered that sometimes patients easily agree for extractions and only 7.41 % reported that patients easily agree for extractions. The reluctance for extractions may be due to the fact that patients feel that first premolar extractions negatively influence their smile esthetics. High percentage of orthodontists observed that patients feel that all premolars extraction cause negative impact on smile esthetics. Arshad F et al<sup>19</sup> evaluated perception and knowledge of patients who has advised extraction of permanent teeth for orthodontic purpose. It was seen that the overall level of knowledge and perception for extraction of teeth was less in patients. Therefore they recommended creating more awareness among orthodontic patients regarding need of extracting teeth which may help in less stress and more satisfaction among patients.

Present study reported that 25.9% orthodontist believed that social media is helpful and 70.37% considered that it is helpful only sometimes. In today's time social media becomes an integral part of everyone's life. Studies showed that patients search for doctors on social media and they explore about treatment procedures also. Uploading the pre and post treatment photographs on social media accounts help patients to evaluate the treatment results which they can achieve, this helps in reinforcing positive attitude for treatment. Reviews of previous patients are also helpful in motivating new patients. So orthodontists need to be stay updated with

the use of social media also which influence their practice in today's time.<sup>20</sup>

## Conclusion

Study concluded that bracket breakage and oral hygiene were common problems in children. Bracket breakage was more prevalent in premolar area. According to most of orthodontists patients did not share complete medical or dental history and patients also complain for long duration and high cost of treatment. It was seen that patients do not agree easily for surgical treatment options and extraction of teeth. Most of Orthodontists, (70.37%) believed the orthodontic practice to be little Stressful. This may be due to compliance problem of patients, as the treatment duration is longer so it may be difficult to keep the patient motivated to achieve positive attitude and good compliance from patients which is necessary for attaining desirable outcomes from orthodontic treatment. Therefore present study concluded that bracket breakage, oral hygiene, unrealistic expectations of patients, reluctance to surgery and extraction, poor compliance for removable appliances are challenges for orthodontists in their daily practice. To overcome these, patient motivation is needed so that they develop positive attitude towards treatment and follow the instructions given by their orthodontist which helps to attain desirable outcome from the treatment.

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