



## COMMON DIFFICULTY IN APPLIANCE WEAR: PATIENTS' PERSPECTIVE ON WEARING FIXED ORTHODONTIC THERAPY - A QUESTIONNAIRE-BASED STUDY

### Orthodontics

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### ABSTRACT

**Aim:** This study aims to provide insights into the challenges and concerns that individuals undergoing orthodontic treatment face, focusing on improving the overall patient experience and treatment outcomes. **Materials and Methods:** A self-assessed questionnaire was formulated to investigate and understand the common difficulties experienced by patients from their perspective when wearing fixed orthodontic therapy among orthodontic patients. The questionnaire was pretested to assess its reliability. The questionnaire was distributed to random 300 patients (179 girls and 121 boys) aged 18-30 years and only completely filled questionnaires were taken for analysis. **Results:** The overall discomfort associated with fixed orthodontic appliances were reported as quite significant, with 61% of respondents falling into the "slightly" category and 24% of respondents falling into the moderate category. This suggests that orthodontic therapy can be a source of discomfort for many patients. **Conclusion:** Orthodontic professionals should not only focus on the technical aspects of treatment but also prioritize patient comfort, appearance concerns, emotional well-being, and oral health.

### KEYWORDS

Fixed orthodontic therapy, patient perspective, discomfort, pain, oral health, treatment challenges, questionnaire study.

### INTRODUCTION

Fixed orthodontic therapy, a cornerstone of modern dentistry, plays a pivotal role in enhancing oral function and achieving aesthetically pleasing dentition. It serves to correct malocclusions, align teeth, and significantly improve the self-esteem and self-confidence of patients by transforming their smiles.<sup>[1]</sup> However, the placement of fixed orthodontic appliances within the sensitive confines of the oral cavity introduces a range of challenges and discomforts for patients. This study delves into the perspective of orthodontic patients, seeking to understand and address the common difficulties they encounter while undergoing fixed orthodontic therapy.

The fixed orthodontic therapy process involves attaching brackets and wires to the teeth, which exerts controlled forces to reposition them gradually. While these appliances are indispensable in achieving treatment goals, they can lead to a variety of tactile sensations that may initially cause discomfort. Patients often describe sensations such as pressure on the oral mucosa, soreness of teeth, and the displacement of the tongue.<sup>[2]</sup> These sensations can disrupt patients' daily routines and introduce varying degrees of discomfort. Discomfort, pain, and difficulties associated with eating and speaking are common challenges reported by patients undergoing orthodontic treatment.<sup>[3]</sup>

It is essential to recognize that while orthodontic treatment aims to improve patient's quality of life by enhancing oral health and aesthetics, it can also temporarily diminish their well-being due to the aforementioned challenges.<sup>[4]</sup> Research has indicated that discomfort levels tend to be highest during the initial days following appliance placement.<sup>[5]</sup> Addressing these issues is crucial, as patient dissatisfaction can lead to reduced enthusiasm for orthodontic treatment and, ultimately, compromise treatment outcomes.<sup>[6]</sup> Consequently, it is essential to identify and understand the most prevalent difficulties faced by patients undergoing fixed orthodontic therapy, enabling orthodontic practitioners to provide tailored support and guidance.

While some studies have explored specific issues, such as pain and food lodgement, no comprehensive examination has collated the full spectrum of problems faced by patients during fixed orthodontic therapy.<sup>[7]</sup> This study endeavors to address this gap by comprehensively assessing the common challenges from the patient's perspective. Moreover, the research aims to offer age-specific data analysis to pinpoint the most prevalent issues encountered by patients in specific age groups during their orthodontic journeys.

### METHODOLOGY

This research utilizes a questionnaire-based study design to comprehensively investigate the common difficulties encountered by patients undergoing fixed orthodontic therapy. A structured questionnaire was developed to gather detailed information on the various difficulties faced by patients during fixed orthodontic therapy encompassing the following key areas; Demographic information (age, gender), Specific difficulties experienced (e.g., pain, discomfort, speech impairment, food accumulation), Severity and frequency of these difficulties, Impact on daily activities, Coping strategies employed., Suggestions for improving the patient experience. The questionnaire underwent pre-testing with a small group of orthodontic patients to ensure clarity, comprehensibility, and relevance.

A prestructured questionnaire (Fig. 1) was given to random 300 patients (179 girls and 121 boys) aged 18-30 years satisfied with the inclusion criteria which include Participants include individuals of all ages who are currently undergoing fixed orthodontic therapy, and, individuals who have already completed their orthodontic treatment or those unwilling or unable to participate in the survey will be excluded. Data collection was done at orthodontic clinics and dental hospitals where patients are actively undergoing fixed orthodontic therapy. Informed consent was obtained from each participant before questionnaire administration. Participants were asked to complete the self-administered questionnaire either on paper or electronically, depending on their preference and the availability of resources. Completely filled forms are only considered for analysis. Participant confidentiality was maintained, and data was anonymized for analysis.

### RESULTS

Statistical evaluation of the data was performed using the IBM SPSS statistics software. A significant majority (73%) reported experiencing moderate pressure or discomfort in their oral mucosa, which includes cheeks and lips. A substantial number of respondents (56%) reported experiencing soreness in their teeth or jaw, primarily in the "slightly" category. A vast majority (91%) expressed concerns about their appearance when wearing braces.

Many respondents (63%) reported significant difficulties with eating and food getting stuck in braces or appliances and 20% are extremely worried about the problem of food impactions. More than half of the respondents (53%) reported extreme difficulty in cleaning their teeth which underscores the importance of proper oral hygiene education and support for orthodontic patients to prevent issues like cavities and gum problems.

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**Demographic Information:**  
 Age: \_\_\_\_\_ years  
 Gender: [ ] Male [ ] Female [ ] Other  
 How long have you been undergoing fixed orthodontic therapy? \_\_\_\_\_ months/years

**Common Difficulties During Fixed Orthodontic Therapy:**

Please indicate the extent to which you have experienced the following difficulties during your fixed orthodontic therapy. Use the scale below:  
**1 = Not at all 2 = Slightly 3 = Moderately 4 = Quite a bit 5 = Extremely**

i) Pressure or discomfort on your oral mucosa (cheeks, lips, etc.)  
 1 2 3 4 5

ii) Soreness of teeth or jaw:  
 1 2 3 4 5

iii) Concern about appearance when wearing braces:  
 1 2 3 4 5

iv) Challenges with eating or food getting stuck in braces or appliances:  
 1 2 3 4 5

v) Difficulty in cleaning your teeth:  
 1 2 3 4 5

vi) Discomfort or difficulty in speaking:  
 1 2 3 4 5

vii) Anxiety regarding extraction:  
 1 2 3 4 5

viii) Discomfort due to breakage of band or breakage of bonded attachment:  
 1 2 3 4 5

ix) Discomfort due to problems in gums like bleeding, swelling:  
 1 2 3 4 5

x) Difficulty due to diet restriction imposed during the treatment:  
 1 2 3 4 5

xi) Weight loss while wearing braces:  
 1 2 3 4 5

xii) Overall discomfort associated with your fixed orthodontic appliances:  
 1 2 3 4 5

**Impact on Daily Activities:**

To what extent have the difficulties you've experienced during orthodontic treatment affected your daily activities (e.g., eating, speaking, oral hygiene)?  
 1 2 3 4 5

**Coping Strategies:**

Have you employed any specific strategies to cope with the difficulties you've encountered during your orthodontic treatment? If yes, please describe them briefly:  
 \_\_\_\_\_

**Suggestions for Improvement:**

Do you have any suggestions for orthodontic practitioners on how to make the orthodontic treatment experience more comfortable for patients?  
 \_\_\_\_\_

**Fig.1: Prestructured Questionnaire**

A majority (63%) reported discomfort or difficulty in speaking. Effective communication is vital, and orthodontists should be prepared to address this concern with patients, especially those who rely heavily on clear speech for their professions. A significant proportion (56%) expressed only moderate anxiety regarding extractions.

A high percentage (72%) reported only less discomfort due to the breakage of bands or bonded attachments and over half of the respondents (54%) reported only less discomfort due to problems in their gums, such as bleeding and swelling.

A significant percentage (63%) reported moderate difficulty due to diet restrictions imposed during treatment. Orthodontic professionals should provide guidance on maintaining a healthy diet while addressing the limitations posed by braces or appliances and 61% of patients reported no issues with weight loss while wearing braces. The overall discomfort associated with fixed orthodontic appliances was reported as quite significant, with 61% of respondents falling into the "slightly" category. This suggests that orthodontic therapy can be a source of discomfort for many patients. (Table. 2, Fig. 2)

**Fig.2: Problems During Orthodontic Appliance Wear, Patients Responses**

**DISCUSSION**

Fixed orthodontic therapy is a widely utilized dental treatment modality, with the primary objective of enhancing oral function and achieving an aesthetically pleasing dentition.<sup>[7]</sup> While the benefits of orthodontic treatment are well-established, it is equally important to recognize the challenges and difficulties that patients encounter during the course of fixed orthodontic therapy.

Our study has revealed that patients undergoing fixed orthodontic therapy often encounter various forms of physical discomfort, including sensations of pressure on oral mucosa, soreness of teeth, and displacement of the tongue. The results of the present study demonstrate that approximately 91% of participants are conscious of appearance due to the use of a fixed orthodontic appliance, which exerted a negative influence on life which can be related to the previous studies<sup>[4]</sup> which highlights the importance of addressing the cosmetic aspect of orthodontic treatment and potentially exploring less visible

treatment options.

It is important to acknowledge that while these sensations are temporary, they can significantly disrupt patients' daily lives, causing discomfort and sometimes even pain. Understanding these challenges is crucial for orthodontic practitioners, as it allows for improved patient counseling and management.<sup>[8]</sup>

**Table. 1: Difficulties During Fixed Orthodontic Therapy**

Difficulties During Fixed Orthodontic Therapy	1	2	3	4	5
Pressure or discomfort on your oral mucosa (cheeks, lips, etc.)	2	3	73	12	10
Soreness of teeth or jaw	6	56	34	2	2
Concern about appearance when wearing braces	0	1	5	3	91
Challenges with eating or food getting stuck in braces or appliances	3	2	12	63	20
Difficulty in cleaning your teeth:	3	7	7	30	53
Discomfort or difficulty in speaking	2	3	63	20	12
Anxiety regarding extraction	0	0	56	34	10
Discomfort due to breakage of band or breakage of bonded attachment	72	10	12	3	3
Discomfort due to problems in gums like bleeding, swelling	54	22	18	3	3
Difficulty due to diet restriction imposed during the treatment	4	7	63	23	3
Weight loss while wearing braces	2	61	24	7	6
Overall discomfort associated with your fixed orthodontic appliances	3	61	24	7	5

The study findings highlight that the discomfort and difficulties associated with fixed orthodontic therapy can impact patients' daily activities supported by the other studies. Eating, speaking, and maintaining oral hygiene can become more challenging tasks for patients with orthodontic appliances.

The duration of orthodontic treatment, which typically spans one to one and a half years, underscores the importance of addressing these challenges effectively to ensure that patients can continue their daily routines without excessive disruption.

This study has provided insights into potential variations in the difficulties faced by patients based on age and gender. Younger patients, for instance, may be more resilient in adapting to orthodontic appliances, while older individuals may report greater discomfort which is similar to other studies.<sup>[9]</sup> These age-related differences should inform orthodontic practitioners in their approach to patient care, as tailored guidance and support may be necessary for specific age groups.

One of the strengths of this study is its focus on the patient's perspective. By directly capturing the experiences and perceptions of patients undergoing fixed orthodontic therapy, we gain valuable insights that can inform patient-centered care.<sup>[6,10]</sup>

The study emphasizes the importance of active communication between orthodontic practitioners and their patients to manage expectations and address concerns effectively.

Our findings suggest that patients employ a variety of coping strategies to manage the difficulties associated with fixed orthodontic therapy. These strategies range from modifying dietary choices to seeking advice from peers who have undergone similar treatment.<sup>[11]</sup>

Recognizing these coping mechanisms can guide orthodontic practitioners in providing additional guidance and support to their patients, for example: the use of aligners to improve oral hygiene and gingival health.<sup>[12]</sup>

Identifying common difficulties patients face during fixed orthodontic therapy offers a foundation for improving the overall patient experience. Orthodontic practitioners should strive to proactively address these challenges through patient education, clear communication, and appropriate interventions.

**CONCLUSION**

The findings underscore the importance of a holistic approach to

orthodontic care. Orthodontic professionals should not only focus on the technical aspects of treatment but also prioritize patient comfort, appearance concerns, emotional well-being, and oral health. By addressing these concerns and providing comprehensive support, orthodontists can enhance patient satisfaction and the overall success of orthodontic therapy.

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