



Clear aligners vs. Fixed Orthodontic appliances: A systematic review

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Introduction

- Fixed orthodontic appliances (FOA) are the therapy of choice for most patients, particularly during childhood and adolescence. This technique is not very popular for adult orthodontics due to aesthetic concerns. As a result, new orthodontic techniques have been created to improve the appearance of teeth and make oral hygiene routines easier.
- One of the most common concerns among patients seeking orthodontic treatment is aesthetics. Investigators have established various methods, such as ceramic or composite braces, lingual orthodontics, and clear aligners, to address the growing aesthetic need for an alternative to traditional braces.

- The purpose of this review was to systematically search the literature and summarize the available scientific evidence regarding the efficiency, effectiveness, advantages, and disadvantages of Clear aligner therapy as compared to Fixed appliance therapy amongst patients of any age with permanent dentition who underwent conventional orthodontic therapy with patients who underwent clear aligner therapy.

To understand the effectiveness of orthodontic treatment with clear aligners in comparison to fixed orthodontic treatment in patients with permanent dentition.

List the different types of orthodontic treatment, the reasons why patients might prefer one over the other, and how gender and age might influence preference.

Provide historical context for clear aligners and their pros and cons.



Study method: Electronic database searches of published articles, case studies and literature reviews were performed. The reference lists of all eligible articles were examined for additional studies.

Sample size: The electronic database identified 15 relevant articles, case studies and literature reviews.

Types of Studies:

Randomized controlled trials, prospective studies, cross-sectional, comparative studies, qualitative studies, and literature reviews which examined the effects of CAT with FAT, were considered eligible for inclusion in this review.

Types of participants:

Orthodontic patients of any age with permanent dentition, who were treated with clear aligners therapy as well as subjects who were treated with fixed appliances therapy.



Data Collection

Data collection was based on thorough search of articles, studies which compared the Clear aligner therapy with fixed appliance therapy on various aspects like efficiency, effectiveness, effects on periodontal health, aesthetics.

The data collection format was in the following form:

- Title/author/year of study
- Study design/setting
- Number/age/gender of subjects
- Comparative factor of study



Results

Outcomes	Therapy	Better	Deteriorate	No change
Esthetics	Clear aligners			
	Fixed appliances			
Periodontal health	Clear aligners			
	Fixed appliances			
Retention post treatment	Clear aligners			
	Fixed appliances			
Treatment visits	Clear aligners			
	Fixed appliances			
Oral hygiene	Clear aligners			
	Fixed appliances			
Patient experience	Clear aligners			
	Fixed appliances			
Complex cases (Extrusion, mesialisation, rotation)	Clear aligners			
	Fixed appliances			

Advantages

1. Clear aligners can straighten your teeth in half the time it takes with traditional braces.

1. Unlike traditional braces, clear aligners are not attached to your teeth. Instead, they are placed over the teeth and worn for at least 22 hours per day. This implies you can eat and drink without them.

1. Fewer dental visits

1. Improved periodontal health

Disadvantages

1. Clear aligners are not the best choice for extreme cases.

2. Buttons and other auxiliaries need to use to keep the aligners in place.

3. It's normal to feel self-conscious when wearing transparent aligners for the first time. You can have difficulty pronouncing specific words, or even speaking in general.

4. Expensive as compared to fixed appliances



Conclusion

As the demand for and interest in the clear aligner system grows, issues about the system's efficacy persist. There has been minimal clinical research on the effectiveness and efficacy of transparent aligners reported to far. Previous research has mostly consisted of case studies or product descriptions, making it impossible to objectively quantify the efficacy of clear aligner systems.

It can be concluded from all the articles and research papers that when it comes to patient comfort and esthetics, clear aligners are always a preferred choice as compared to fixed orthodontic appliances.

Family members, particularly mothers, can have a significant impact on whether or not orthodontic treatment is performed; however, parents' and clients' worries about orthodontic treatment, as well as its consequences on self-esteem, attitudes, beauty, and dental health, should also be considered.

- In recent years, the clear aligner treatment has grown in popularity and usefulness. The published publications comparing Clear Aligners to traditional fixed appliances mostly have problems and gaps, including as inadequate methodology with a high risk of bias, a lack of control groups or blinding techniques, and a limited sample size that affects internal validity and study findings.



Thank You

