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Section D206

**Comparison of Short-Term Oral Impacts Experienced by  
Patients Treated with Invisalign or Conventional Fixed  
Orthodontic Appliances**

### **Summary of the article:**

Saitah Alajmi , Arwa Shaban and Rashed Al-Azemi conducted an observational retrospective study on 60 adults on the benefits of wearing thermoplastic clear aligners rather than conventional fixed orthodontic appliances-braces. Article was published in the Journal of Medical Principles and Practice in December 2019 (<https://www.ncbi.nlm.nih.gov/pubmed/31842018> ).

A total of sixty adults participated in the study with ages between 18 and 50 who presented certain criteria that were favorable for the study. The study assesses the severity of pain and also frequency and amount of pain killer medication patients use when using clear aligners or braces. It also studies the limitations of daily routine and food consumption. The study was conducted using the Oral health-related quality of life questionnaire (OHRQoL). Participants with the clear aligners reported more difficulty in speech while no impediment in chewing and the amount of food consumed. Participants with conventional appliances reported more mucosal ulceration and increased use of pain relief medication.

The authors concluded that there are some differences in the two types of appliances and that the clear aligners are more tolerable due to less pain and the patient need of food consumption.

#### **1. Article information:**

“Comparison of Short-Term Oral Impacts Experienced by Patients Treatment with Invisalign or Conventional Fixed Orthodontic Appliances “ written by Saitah Alajmi , Arwa Shaban and Rashed Al-Azemi. Article was published in the Journal of Medical Principles and Practice ( <https://www.karger.com/Journal/Home/224259> ). It was published in December 2019 (<https://www.ncbi.nlm.nih.gov/pubmed/31842018> ).

Authors declare no conflict of interest and the study did not require or receive any funding.

## **2. Study analysis:**

The type of study is a Case Control study. Authors conducted the study due the many factors that come when trying to choose between clear aligners and conventional appliances. Before this study it was known that it was easier for patient to maintain their oral health with the clear aligners due to the ability of removing them while eating or brushing their teeth, while patients using conventional treatment suffered from pain and discomfort. Authors aim was to compare and contrast the differences between the two different appliances in regards to the patient day to day routine, oral symptoms, treatment satisfaction and also pain and use of analgesics.

## **3. Experimental design:**

The study was composed of sixty participants in total with ages between 18 and 50 ,and were split in half. The first group had thirty participants that were wearing clear aligners out of which 20 females and 10 males. The second group also had thirty participants out of which 21 females and 9 males. Participants were selected based on certain inclusion criteria such as treatment that involved both jaws , no crowding or spacing <1mm, >4mm, complete dentition with the exception of the 3rd molar and Class 1 of occlusion.

The study was over a period of time of 1 month. The researchers evaluated the benefits and disadvantages of both clear aligners and conventional orthodontic treatment by based on participants self-reports through the surveys provided by the researchers. After all the data was collected, researchers analyzed the data statistically and provided graphs.

## **4. Results:**

At the end of the experiment researchers found that there are no significant changes between the 2 groups in regards to demographics , to limitations of daily routine, to limitations and disturbances in eating, to Oral symptoms. Patients using clear aligner reported a higher satisfaction with the appearance of their appliances than patients

using conventional treatment, however the difference is not significant. Both groups experienced pain in the first few days of treatment, but the patients with the clear aligners experienced a more pressure like pain, while patients with the conventional treatment experienced a more sharp or throbbing pain. The difference in pain was insignificant, but the patients with conventional treatment reported a higher use of analgesics.

### **5. Conclusion:**

The researchers concluded that there were significant differences in the age distribution stating that older people are seeking a more esthetic option which might have affected patients experience with the treatment and can be considered a “confounding” factor. Researchers also concluded that there are some differences between clear aligners and conventional treatment, which consist of patients with clear aligners reporting more speech disruption and no difficulty chewing, while patients with conventional treatment report more mucosal ulceration without bleeding or bruising. Researchers suggest that more studies based on patients' reports should be done on a long-term basis.

### **6. Impression:**

After reading the article it occurred to me that this research is very helpful, given that as dental hygienists our responsibility is to spread awareness about oral health. This article helped me understand the difference between clear aligners and conventional treatment, and their pros & cons. This will help me to further advise my future patient what works better for them given their current oral health. After reading this article a few questions have occurred to me such as: Isn't there something to prevent the patient from getting mucosal ulceration? What exactly is causing the ulcerations? And what can we, as dental hygienists, do to ease the patients pain?

