

## Awareness Of Orthodontic Patients To Food Restriction And Oral Hygiene Maintenance

Research Article

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## Abstract

Oral hygiene is very important as there is an increased risk of getting cavities, stains and accumulation of food during orthodontic treatment. Along with oral hygiene education, the patients would also be instructed in their diet pattern. The aim of the study is to determine the awareness of orthodontic patients to food restriction and oral hygiene maintenance. The objective is to understand the importance of diet and oral hygiene maintenance in orthodontic phase. On a sample of 100 orthodontic patients with braces, a questionnaire was given to fill. To assess their knowledge, practice and attitude of the patients towards dietary and oral hygiene instructions. The survey included 10 questions with regards to oral hygiene and food restriction. The result showed that the majority of them were aware of the oral hygiene and food restrictions. Though many of them were aware of orthodontic aids such as interdental brushes, they did not use it. This study helps in understanding how many of the patients are able to understand the significance of the instruction given with regards to oral hygiene and food restrictions and how many of them need to be educated. If the patients are not aware of it, this study would help us, dentists, to educate our patients in a much efficient way in the future to show the importance.

**Keywords:** Oral Hygiene; Diet; Restriction; Braces; Orthodontic Aid; Appliances.

## Introduction

During an orthodontic treatment phase, it is important to maintain oral hygiene in order to keep the teeth, the gums and the appliances clean. The main oral infection to be concerned about is plaque formation [18]. Plaque is a type of soft deposit which forms biofilm adhering to tooth surfaces and to other hard surfaces in the oral cavity including removable and fixed restorations. [14]. It was stated that during an orthodontic treatment phase, there is an increase in the bacteria's concentration, and alterations in salivary buffer capacity, pH acidity and salivary flow rate [2].

Generally, prior to any orthodontic treatment the periodontium condition is checked and treated for any periodontal problems so as to avoid any complications during the orthodontic treatment phase [5]. With addition of the orthodontic appliances, oral hygiene maintenance may become more challenging. The

brackets, wire and retainers are all sources of food entrapment and infection growth [8]. It is during this phase that they become more susceptible to plaque accumulation. Thus, one should also be aware of their diet restrictions to not aggravate the bacterial concentration and create more concern on the measures to clean the teeth [15].

There are various over the counter products available in order to ease the difficulty of keeping the teeth with orthodontic appliances clean. They are bi-level toothbrush, floss threaders, interdental brushes and mouth rinses such as antiseptic rinses. These will also bring out a better prognosis of the orthodontic treatment [16]. It is necessary to maintain the balance between the protective factors and the caries risk factors during the orthodontic treatment with a rigorous home care program toward correct oral hygiene procedures necessary to control plaque accumulation for caries and periodontal disease prevention [9].

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## Material And Method

This questionnaire based study was conducted for a period of one month (December 2016). Questions based on oral hygiene maintenance of orthodontic patients were asked to a population of 100 braces wearing patients. The survey included a total of ten structured questions to assess the knowledge, practice and attitude of the patients towards oral hygiene instructions. The structured questionnaire was distributed among 100 orthodontic patients at Saveetha Dental College and Hospital. The results were presented in texts and tables and were statistically analyzed. They were later illustrated with graphic illustration to see the comparison better.

## Result

The graphs show that majority (84%) of the population is cautious of food getting stuck in their thus adapt various methods to remove them but majority (32%) of them tend to opt for mouthwash or gargling, while the second most group (26%)

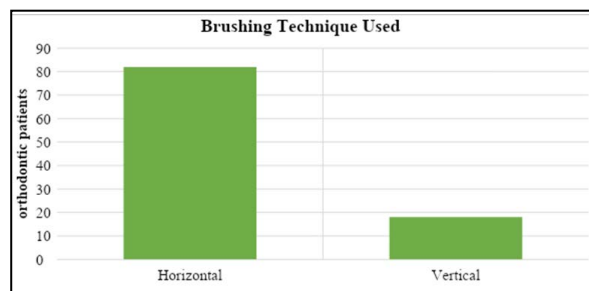
uses interdental brushes. Most of them are aware of interdental brushes but only few tend to use them. However, the patients had been keen on taking note of the food instructions as the majority of them correctly list down the food which should be avoided.

Another interesting fact obtained during this study is that the majority of the population were unaware and had never undergone scaling after application of braces. Overall, this study helped us understand how many of our patients are aware of the oral hygiene and the food restrictions and how many of them need to be further educated. For patients who are not aware of it, this study would help us, dentists, to educate our patients in a much efficient way here onwards.

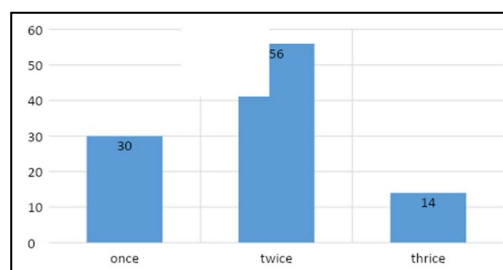
## Discussion

Oral hygiene is very important as there is an increased risk of getting cavities, stains and accumulation of food during orthodontic treatment [13]. During an orthodontic treatment phase, a simple

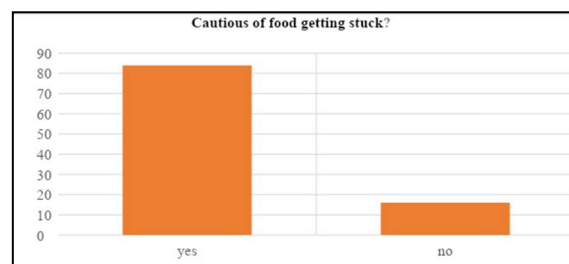
Graph 1. Shows the brushing technique of choices.



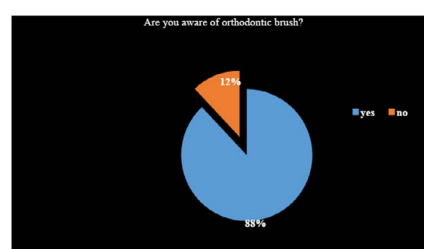
Graph 2. Shows the frequency of brushing the teeth in a day.

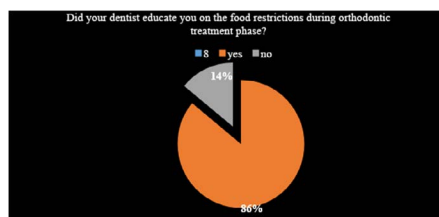


Graph 3. Shows the number of people concerned with aesthetic factors.



Graph 4. Shows the percentage of the population aware of orthodontic brush.



**Graph 5. Shows the percentage of the population aware of food restrictions during orthodontic treatment.**

task such as brushing becomes difficult for individual patients. Poor oral hygiene during this phase will also lead to bad mouth odor and eventually lead to loosening of tooth support periodontium problems. Thus, in order to accomplish this difficult task there are many different products to help ease the task.

In cases of patients with orthodontic appliances, a soft-bristled or a bi-level toothbrush can be used for effective plaque removal. The bi-level toothbrush is a type of toothbrush with longer bristles on the edges and shorter once in the middle used for effective cleansing on patients with braces [17]. Though not recommended, an electric toothbrush set at a moderate setting can also be used. The commonly used cleansing aid in orthodontic patients is an interdental brush [19].

An interdental brush can be used for the hard-to-clean areas of teeth. The small bristles of this special tooth-cleaning aid, which is shaped like a pipe cleaner, can get in between wires, brackets and teeth [3]. With gentle and persistent effort, it's possible to reach into the smallest nooks and crannies, and control plaque buildup [9]. During orthodontic treatment, one should also floss regularly [6]. Though it may seem impossible there are some special products to help make this easier - including floss threaders and particular kinds of floss, which can help to get the floss between wires and gum lines.

Orthodontists should always instruct their patients on these oral hygiene maintenance methods and products for good prognosis [12]. Depending on the oral hygiene status of the oral cavity, the orthodontics may recommend an in-office or at-home supplemental fluoride treatment to boost the cavity resistance. An antiseptic rinse may also be recommended to ease minor gum inflammation or irritation [12]. In case of retainers, it should be cleaned daily. The dentist may also additionally recommend a cleaning solution [1]. However hot water is not recommended as it may distort the soft plastic and make it unusable. It is important to keep removable retainers clean in a case when not in mouth.

Controlling the diet involves restriction of food that could increase the risk of developing tooth decay or cause damage to appliances. In order to avoid tooth decay, the orthodontic patients are advised to cut down or eliminate foods with an excess of sugar, like soda, sweets, and ice cream. It also means avoiding foods that could easily get stuck in the braces such as chewing gum, hard candies, licorice and caramels [7]. Foods that are very hard or extremely sticky can also cause physical damage to orthodontic appliances.

Certainly braces or retainers with broken wires or loose brackets will not be able to carry out its orthodontic function. One should avoid hard foods like hard candies or nuts, beef jerky and hard pizza crust [11]. However that doesn't mean that they avoid eating

healthy foods like carrots and apples. These kinds of food should be cut into bite-sized pieces and then consumed. Habits such as chewing on ice, pencils, or nail biting are habits that can cause damage to the orthodontic appliances, and even result in chipped teeth [4].

## Conclusion

Despite having good knowledge on orthodontic treatment, the patient's attitude and practice towards orthodontic treatment is mostly moderate. As discussed above there are a number of sources of potential iatrogenic damage to the patient during orthodontic treatment. It is important for practicing orthodontists to inform patients about the retainers, appliance maintenance and build interpersonal rapport with the patients. Along with oral hygiene education, the patients should also be instructed in their diet pattern. Following the oral hygiene and food instructions would allow an efficient orthodontic treatment.

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