Patient cooperation regarding food restrictions during orthodontic treatment - A questionnaire study

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ABSTRACT

Aim: The aim of this study was to find patient cooperation regarding food restriction during orthodontic treatment. Objective: The objective of this study was to improve our knowledge on maintenance and patients' cooperation regarding food restrictions during orthodontic treatment. Introduction: Orthodontic appliances involve permanent fixtures on the teeth for the purpose of moving them. These attachments may sometimes be a hindrance for maintaining good oral hygiene. This is because there is a narrow gap between the wire and the tooth where the food particles can easily get lodged. For this reason, there are certain food restrictions to be followed by the patients to protect the appliance and prevent breakages from happening. Materials and Methods: It is a questionnaire study where 100 patients wearing orthodontic fixed appliance were selected and given a total of ten questions, for which they were asked to provide answers. These questions were related to food restrictions during orthodontic treatment. Results: This study reveals how many patients actually cooperate regarding food restrictions during orthodontic treatment. The study shows that patient cooperation regarding food restrictions during orthodontic treatment is average (64%). Conclusion: From this study, it has been shown that most of the patients were aware of the diet and food restrictions to be followed during orthodontic treatment. Only a minimal amount of patients followed food restrictions that have to be followed during orthodontic treatment. Added that the orthodontists have to stress more on diet restrictions so that the patients as well as the dentist do not have to face problems during the treatment.

KEY WORDS: Patient, Cooperation food, Orthodontic treatment

INTRODUCTION

Orthodontic appliances involve permanent fixtures on the teeth for the purpose of moving them. These attachments may sometimes be a hindrance for maintaining good oral hygiene. This is because there is a narrow gap between the wire and the tooth where the food particles can easily get lodged. For this reason, there are certain food restrictions to be followed by the patients to protect the appliance and prevent breakages from happening.

When a bracket gets debonded, the orthodontist loses control over the tooth. This could lead to various complications, for example, where a tooth alone gets displaced out of the arch or the midline can get shifted to one side. Orthodontic treatment is highly technique-sensitive and time-consuming clinical procedure. Patient’s understanding in its technical aspect and compliance in appliance maintenance are important for management and successful outcome of the treatment. The purpose of the present study is to evaluate the current perspective of Nepalese orthodontic patients toward orthodontic treatment regardless of the practitioner and treatment center and to assess the difference of perceptions between female and male patients. Orthodontic treatment in young children is known as interceptive orthodontics, and it can begin as early as age 6 or 7. At this age, teeth are still developing and the jaw is still growing which means that certain conditions, such as crowding, may be easier to address. It is important to note that early treatment does not apply to all orthodontic problems; however, it may help in certain cases.

It is very important to clean in between your teeth with a floss threader and floss; a stimudent (toothpick cleaner) or a proxabrush (interproximal cleaning
The demand for orthodontic treatment in adults appears to be increasing (Salonen et al., 1992). This is thought to be the result of improved dental and orthodontic awareness, as well as increased social acceptance of appliance therapy. Innovations in the esthetics of appliances may also be a major factor in the increase in acceptability of orthodontic treatment for adults. Adults considering treatment now have a choice in the type of appliance design available including conventional steel, ceramic, and gold-plated metal buccal brackets; lingual appliances; and removable appliances, including clear plastic aligners. Innovations in treatment appliances have increased the ability to treat malocclusions that were previously untreated without surgery or extraoral anchorage. An increase in interdisciplinary treatment planning has resulted in an increased need for orthodontics as an adjunct to other dental specialties.

Benefits of Early Orthodontics

Early intervention takes advantage of the fact that a child’s jaw is still growing. Early treatment is useful when the dental arches and jaws are not in the correct position. Functional appliances can fix or improve these problems. More treatment usually is needed later on, but it may be shorter and less involved. Kid braces have improved a lot in the past couple of decades. Technology has made them more comfortable and more attractive than the braces most parents remember wearing.

Breakages happen only due to heavy pressure on the bracket caused by biting hard substances. It is for this reason that patients are asked to maintain certain food restrictions during orthodontic treatment.

Foods to Avoid while using Braces

Eating with braces can be tricky. Braces help us to have better teeth and more beautiful smiles in the long run. However, in the short run, they can make it a little harder to practice a good oral health routine. Brushing and flossing are more difficult, and you need to be aware of what foods to avoid with braces. Hence, if a trip to the orthodontist is in your future, you might consider a few changes toward a “braces friendly” diet. There are some foods that are not off-limits per se, but that you should either avoid or be careful eating, which are as follows:

Other hard foods (besides, candy) – This includes everything from harder types of bread such as pizza crust, to nuts, to vegetables like raw carrots. Since they require so much force to bite through, they can damage your wires and brackets. Cook raw vegetables so they are soft. If you must eat a hard bread, consider softening it with broth or sauce.

Tough meats – Snacks like beef jerky can loosen the wires and brackets of your braces. The same can happen with poorly cooked beef or pork, so be careful when consuming these meats.

Ice – Ice in your drink is OK, even sucking on ice chips. But do not bite or chew ice; This is probably the most common culprit when it comes to damaged braces. Finally, there are some foods that are fine to eat with braces, but you should probably take a minute to cut them into much smaller pieces. Those include raw vegetables and fruits, croutons, “bulky” breads such as French/Italian bread and hard rolls, pizza, and meat.

METHODOLOGY

A study was conducted among patients wearing orthodontic fixed appliance residing in Chennai, Tamil Nadu. Chennai has an umpteen number of dental clinics; dental specialty centers and over dozen dental colleges produce an estimated thousand dental graduate every year. Since very few studies have been conducted to incorporate patient cooperation regarding food restrictions during orthodontic treatment.

The present study was conducted to determine the patient cooperation regarding food restrictions during orthodontic treatment in Chennai, Tamil Nadu. Following simple random sampling, 100 patients were selected. A self-administered questionnaire was distributed to the selected number of patient in Chennai. This questionnaires were distributed to patients, the filled questionnaires were collected, and only completed filled forms were considered for analysis.

Data were entered in terms of age, sex, occupation, duration of wearing braces, and self-administered questions.

RESULTS

Table 1 shows the descriptive characteristics of the participants. The study sample consisted of 100 patients, among which 54% were from 18 to 25 years of age, 28% were from 18 to 32 years of age, and 18% were from >32 years of age. Based on gender, there is female predilection (64%) and males were 36%. Based on occupation, 68% were students and 32% were working. Based on the duration of wearing braces, 54% were from 2 months to 12 months, 17% were from 2 months to 36 months, and 29% were >36 months.
Figure 1 shows the descriptive characteristics of age and duration of wearing braces where patient age ranging from 18 to 32 was seen and duration from 2 months to 36 months was observed.

Figure 2 shows descriptive characteristics of gender and occupation. Based on gender, there is female predilection, and based on occupation, students’ wearing braces were dominant.

Figure 3 shows that the females have more bleeding on gums compared to males, and according to the survey, a number of females who take soft chocolates is higher when compared to males. Female takes more fried items and junk foods compared to males.

**DISCUSSION**

Following food restrictions allows a patient to minimize time wearing braces and to achieve the best results possible. Good cooperation is important in successful orthodontics. Specific diet information will be given when the appliances are placed. Proper cleaning and hygiene habits are of critical importance. Keeping the mouth in a healthy condition during treatment is vitally important and the daily use of fluoride rinse will help the maintenance of good oral health.[3-6] Factors such as belief, attitude, perceptions, and reasons thought to be associated with compliance. They considered these factors as a combination of personality type, negative motives (pain, inconvenience, and dysfunction), and positive motives (health awareness, dental knowledge, and personal oral embarrassment).[4] A study by Bos et al.,[12] however, did not find a correlation between compliance and satisfaction among orthodontic patients. The present study assessed information of the patient on orthodontic treatment required for its compliance and maintenance. The assessment on the attitude of the patient was related to perception on treatment service and cost, and questions on practice were related to oral hygiene methods and carefulness of the patient. The present study did not assess the barriers to action, as the questions were not targeted at the reasons for non-cooperation. The study also did not consider patients’ pain perception and inconvenience due to braces. The study on pain experience during orthodontic treatment among Nepalese patients was analyzed. Various studies identified female orthodontic patients as more cooperative than males. The present study showed similar finding in many parameters that female Nepalese patients possessed better understanding and perceptions toward ongoing orthodontic treatment and found a moderate level of knowledge and awareness about orthodontist and irregular teeth and less awareness about orthodontic treatment among Indian school children through an epidemiological survey. Significantly positive attitude toward orthodontists in previously treated subjects compared to untreated ones. The orthodontically treated subjects’ attitude toward the satisfaction with treatment result and experiences with follow-up appointments was good. It is assumed that the general public has a positive attitude toward orthodontic profession; parents who were former orthodontic patients are more likely to approve their child for orthodontic treatment.[7-9]

It is satisfactory to learn that Nepalese orthodontic patients possess a good level of knowledge about orthodontic treatment. However, only 45.7% of patients had the information about wearing of retainer. This fact would lead to difficulty in prescribing the retainers after the treatment and jeopardize the stability of results. The practice of orthodontic patients on oral hygiene, food restriction, and regularity of appointment was good; however, the use of special cleaning aids was moderate. The present report on oral hygiene maintenance of Nepalese orthodontic patients is consistent with the previous study on the same population. These information are pertinent
for better clinical management for service providers. It can help improve their service and enhance rapport with the patients.\textsuperscript{8-10} Actually, orthodontist’s interpersonal behavior and role in patient motivation are other aspects of successful orthodontic treatment. The orthodontist should give positive feedback and communicate with the patient on the issues of patient cooperation and their inconveniences. Orthodontists should explain about the appliance including retainers and advice on oral hygiene, dietary control, and appliance maintenance methods.\textsuperscript{11} Patients who are dissatisfied with the treatment and interpersonal aspects tend to avoid care and jeopardize the name and fame of the orthodontic practice and the practitioner.\textsuperscript{12}

CONCLUSION

From this study, it has been shown that most of the patients were aware of the diet and food restrictions to be followed during orthodontic treatment. Only a minimal amount of patients followed food restrictions that have to be followed during orthodontic treatment. Added that the orthodontists have to stress more on diet restrictions so that the patients as well as the dentist do not have to face problems during the treatment.

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