



## Original Research Article

## Understanding orthodontic treatment – patients' perspective

M Ravi Teja<sup>1,\*</sup>, Mahesh C M<sup>1</sup>, Aravind Raju<sup>1</sup>, Arun A V<sup>1</sup><sup>1</sup>Krishnadevaraya College Of Dental Sciences & Hospital, Bengaluru, Karnataka, India

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## ABSTRACT

**Aim:** This study was conducted to evaluate patient's understanding of orthodontic instructions about the care of their orthodontic appliance and maintenance of oral hygiene during the fixed mechanotherapy.

**Materials and Methods:** This study was done in the Department of Orthodontics at Krishnadevaraya College of Dental Sciences, Bangalore. A self-assessed questionnaire was formulated to assess the awareness among patients regarding the care of their fixed appliance. It was distributed among patients and only completely filled questionnaires which were 100 in number were considered for analysis. The questionnaire was divided into 3 categories – Food, Hygiene and General Instructions on Maintenance. The Questionnaire had a total of 18 questions with YES or NO type of response.

**Results:** The data obtained by the survey was statistically analysed. Number of Male and Female patients was 37 and 63 respectively. In the category of Food, the overall positive response was 87.6%, whereas negative response was 12.4%. In the category of Hygiene, the overall positive response was 87.2%, whereas negative response was 12.8%. In the category of General Instructions and Maintenance, the overall positive response was 83.5%, whereas negative response was 16.5%.

**Conclusion:** Though majority of the patients exhibited impressive levels of understanding regarding food and hygiene, there was a lack of awareness about the general instructions and maintenance. So as orthodontists, we need to emphasize more on the awareness of patients regarding the care of their appliance which will go a long way in improving the overall results.

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## 1. Introduction

“The single biggest problem in communication is the illusion that it has taken place”. said the eminent playwright George Bernard Shaw.

Similarly, as orthodontists we should not be in an illusion that all the instructions, which have been given to the patient are understood by them.

Because in a field like orthodontics where the success of the treatment is as dependent on the compliance of the patient as it is on the skill of the orthodontist.

Proper communication and understanding between the patient and their orthodontist is of utmost importance.

The orthodontic treatment often involves the use of fixed appliances in the correction of malocclusions. However, the

placement of fixed orthodontic appliances could affect the ease of oral hygiene procedures among patients.

A high standard of oral hygiene is therefore essential for all patients undergoing orthodontic treatment. Inadequate oral home care and dental hygiene practices can lead to accumulation of plaque and make orthodontic patients at increased risk of developing gingivitis, gingival recession, loss of gingival attachment, decrease the periodontal support and dental caries.<sup>1</sup>

It has to be pointed out that malocclusion is not a primary etiological factor but an auxiliary factor, which facilitates dental plaque accumulation. Good oral hygiene is a key factor required to facilitate uninterrupted orthodontic treatment. Numerous studies show a significant increase in the quantity of dental plaque as well as the occurrence of gingivitis in patients with fixed orthodontic appliances

\* Corresponding author.

E-mail address: [raviteja.sunshine@gmail.com](mailto:raviteja.sunshine@gmail.com) (M. R. Teja).

because they make removal of dental plaque difficult.

The patients need to be taught about the correct technique and frequency of tooth brushing. They also need to learn about the appropriate types of toothbrushes, as well as about other aids for oral hygiene maintenance like mouthwashes etc.

## 2. Materials and Methods

The study was conducted in Department of Orthodontics, Krishnadevaraya College of Dental Sciences. The population attending the hospital was spread across the high, middle, and lower socioeconomic groups. The educational status of the population was varied. Informed consent was obtained from each participant before the study. A self-assessed questionnaire was formulated to assess the understanding levels among orthodontic patients. The overall guidelines for questionnaire development followed the guidelines of Williams.<sup>2</sup> The questionnaire was divided into 3 parts featuring multiple-choice questions (18 in total) representing Food, Hygiene and General Instructions on Maintenance with YES or NO type of response.

Questionnaire was evaluated by orthodontic practitioners to ensure clear understanding of questions, relevant to the aim of the study.<sup>3,4</sup> It was distributed among patients and only completely filled questionnaires which were a total of 100 in number were taken for analysis. The received data was tabulated for data analyses in MS office Excel sheet.

The statistical analyses were performed using SPSS software version 20.0. Descriptive analyses were expressed in frequencies and percentages. The level of statistical significance was set at  $P < 0.05$ .

## 3. Results

Patients had a good understanding about the consistency of foods which can and cannot be eaten during the treatment period. (Figure 1)

About 21% of the patients didn't know about the cutting up of hard foods before consumption which can debond the brackets and of them 27% were males while 17.5% were females.

28% of the patients who took part in the survey didn't know about the harmful effects of the consumption of sugary foods and 32.4% of them were males while 24.4% of them were females.

Patients showed a good understanding about hygiene practices that need to be followed during their fixed appliance therapy. (Figure 2)

Except in the case of use of fluoride mouth wash where 24% of participants didn't have awareness about its beneficial effects.

It comprised of 29.7% of males and 20.6% of them were females.

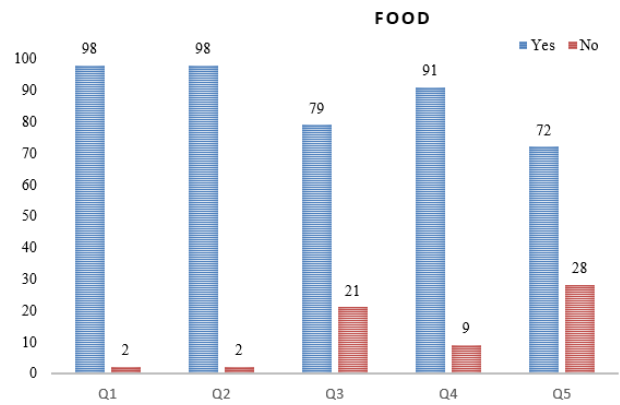


Fig. 1: Food Habits

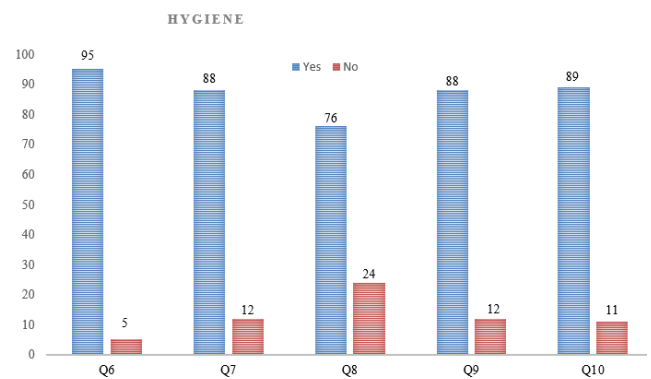


Fig. 2: Hygiene Habits

In this category few variations were found about the levels of understanding among patients regarding the care of their fixed appliance. (Figure 3)

About 19% of the patients didn't know about the application of soft wax on the braces if it was irritating the patient's tissues and it comprised of 21.6% were males and 17.5% were females.

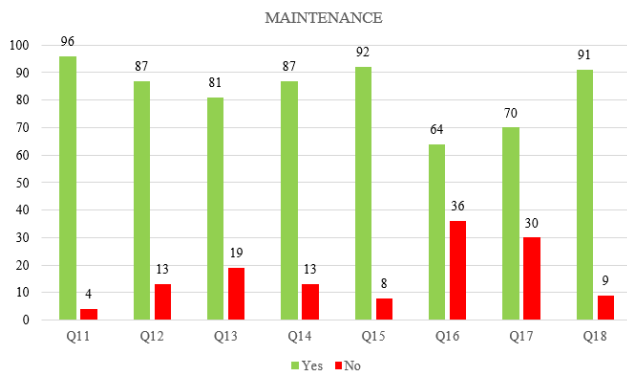
An alarming 36% of the patients had no idea about the use of retainers after the fixed appliance therapy was completed and their uses and it was made up of 43.2% males and 31.7% females.

In 30% of the patients, they didn't know that they have to visit their regular dentist along with the orthodontist while undergoing fixed appliance therapy. And it comprised of 32.4% males and 28.6% females.

## 4. Discussion

### 4.1. Response to Food

During the orthodontic therapy soft foods must be consumed which are not sticky in nature by the patients and in the present study 98% of the participants understood this aspect.



**Fig. 3:** General Instructions and Maintenance

Sweet food with high sugar content should be avoided whenever possible since it causes enamel weakness and dental caries.<sup>5</sup> Thus, the consumption of sweet food should be followed by tooth brushing or mouthwash. In the present study, it was understood that only 72% of the population avoid sweet food. Which shows a higher value than a study which was done by Nadar.S<sup>6</sup> in which only 50% of population avoided sweet foods. When proper oral hygiene is followed, there is no harm; hence, people should be advised accordingly.

Hard foods may cause damage by bending the wires, or breaking the brackets. Thus, it should be strictly avoided during orthodontic treatment.<sup>7</sup> Nearly 79% of the population avoided hard food and the percentage of them was 73% in men and 82% in women. Sticky food also has the same issues such as bending of wires and weakening of cement. In this study, 98% of the sample population avoided sticky food which includes 97% of males and 98% of females.

#### 4.2. Response to Hygiene

Maintaining good oral hygiene procedures during fixed appliance therapy is important for gingival health and to prevent the development of white spot lesions.<sup>8</sup> Intraoral, in order to help in plaque control, a good brushing technique and mouth wash are advised on a daily basis.<sup>9</sup> In this study, 70.3% of males and 79.4% of females use mouthwash, which has a combined value of 76%. This value is more than a research done by Baheti and Toshniwal,<sup>10</sup> in which 57.4% of the population used mouthwash, and a study done by and a study done by Nadar Sin which, 28% of males and 52% of females use mouthwash, which has a combined value of 40%.

#### 4.3. Response to General Instructions and Maintenance

It is satisfactory to learn that orthodontic patients possess good level of knowledge about orthodontic treatment. However, only 64% of patients had the information about

wearing of retainer which was slightly better than a study done by Rabindra M Shrestha on Nepalese orthodontic patients which had only 45.7%.<sup>11</sup> Knowing this, it can be troublesome to prescribe the retainers to patients after the completion of treatment and if they don't wear them regularly, it can endanger the results of the treatment.

Patients also showed poor understanding of the fact that they have to visit their regular dentist along with their orthodontist during the course of their fixed appliance therapy. With only 70% of patients showing willingness to visit their regular dentist.

Actually, orthodontist's interpersonal behaviour and role in patient motivation is another aspect of successful orthodontic treatment. The orthodontist should give feedback and communicate with the patient on their issues of cooperation and inconveniences. The provided information enhances the ability to improve the service of the orthodontist towards the patients and maintain the harmony in a clinical scenario.<sup>12</sup>

## 5. Conclusion

The overall awareness among the patients was acceptable, and the awareness among females was comparatively better than the males. There is a need to incorporate more communication aids between the orthodontist and the patient in future. Extra attention should be given in educating and motivating the patients on oral hygiene practices and maintenance instructions during orthodontic treatment in a proper manner by using more audio-visual aids or training the support staff in the orthodontic practice so they can further educate the patients and this could be beneficial for not only the patient but also the doctor treating them by improving the overall treatment results.

## 6. Source of Funding

None.

## 7. Conflicts of Interest

None.

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### Author biography

**M Ravi Teja** Post Graduate

**Mahesh C M** Professor

**Aravind Raju** Reader

**Arun A V** Reader

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