

A SURVEY STUDY ON THE CHANGES IN FOOD CONSUMPTION HABITS OF THE PATIENTS DURING FIXED ORTHODONTIC TREATMENT

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ABSTRACT

Background and Objective:

The relationship between oral health status and dietary intake is well acknowledged and that both the number and condition of the teeth can result in impaired masticatory function which in turn can lead to difference in food choices. Treatment time during fixed orthodontic therapy is dependent on the complexity of the malocclusion and the treatment. The patients experience varying amount of discomfort like ulceration, functional difficulties and tongue soreness which in turn influence their way and venue of eating. This study is performed to evaluate the patients dietary behaviour and food choice during the course of treatment.

Materials and Methods:

This prospective study was conducted on a calculated sample of patients who are undergoing their orthodontic treatment in SRM Kattankulathur Dental College and Hospital. A questionnaire survey of 2 sections was prepared and the responses were recorded.

Results:

A total of 100 responses were recorded, out of which there were a greater number of female patients. Mostly the patients had an inclination towards a softer diet. They avoided any kind of sugar consumption during the time of their treatment.

Conclusion:

This study helped us to evaluate the patients dietary behaviour and food of choice due to various factors that were taken under consideration. It also gave us a clear picture that patients chose to adopt a healthier diet.

Key Words:

Nutritional Intake, Orthodontic treatment, Dietary Habits, Balanced diet

INTRODUCTION:

Aesthetics has become a very important issue in the 21st century as it is considered to define one's character. In the past, functional demand was the main concern in any dental treatment but nowadays the focus has completely shifted towards dental aesthetics. The need for an orthodontic treatment has increased due to the expectations and pressures that have been produced socially and culturally.^{1,2}

The development of the oral cavity and its structures is influenced by the nutritional state of an individual. Deficiency of nutritional intake and any kind of toxicity can cause various malformations. Orthodontics is a field where most of the patients are teenagers who are still in their growing stage. Adolescence is a period of profound physiological and psychological changes which is also associated with altered nutritional needs. Henceforth the importance of well-balanced diet is supreme. There is a huge demand for proper nutrition in adolescents due to rapid growth and development as well as the emotional stress during puberty.³ Appropriate nutrition can maximize while nutritional deficiency can destabilize the appropriate biological response of the periodontal ligament and alveolar bone for adequate orthodontic forces.⁴

During orthodontic treatment diet is required to be modified, but deficient and poor nutrient intake should be avoided.³ Moving teeth creates an increased nutritional demand in patients. The physical, physiologic, and emotional stresses caused by orthodontic treatment set in motion hormonal reactions that increase nutrient mobilization and utilization.⁵ The nutritional requirements of the person are raised due to physical, physiological, and emotional stresses due to orthodontic treatment which also results in increased mobilization and utilization of nutrients.⁶

It is widely accepted that orthodontic treatment can cause pressure sensitivity to the teeth which leads to a certain amount of pain, discomfort and functional limitations. This leads to difficulty in mastication of hard foods and also reduces the intake of soft foods. It also leads to refrainment of having to chew natural foods which generally involves the elimination of solid, stringy and dry foods from the diet.⁷

Treatment

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Occlusal changes during the course of treatment may lead to impaired mastication which may lead to digestive disorders as the patients have started to alter their diet by swallowing coarse particles. This may increase the risks of nutrition induced diseases due to impaired dietary intake.⁷⁻⁹

Many patients report with varying degrees of pain, change in diet and difficulty to bite and chew. If any kind of change occurs during this adolescent phase, a significant kind of consideration is needed for patients undergoing the orthodontic treatment which may require special nutritional advice.¹⁰

Orthodontic therapy highly depends on the well-being of the oral tissues. Any inflammation of the oral tissues, or compromised periodontal problems or any ulcerations can affect the orthodontic treatment. Hence, diet directly affects the efficiency of the treatment.¹¹

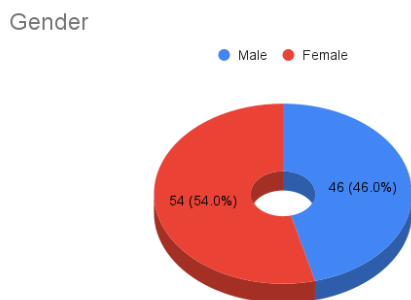
MATERIALS AND METHODS:

This study was conducted in the Department of Orthodontics and Dentofacial Orthopedics of SRM Kattankulathur Dental College and Hospital. The questionnaire was answered by the patients undergoing fixed orthodontic treatment for more than 2 months and who are willing to participate in the study. Patients who have undergone Removable orthodontic treatment were excluded from the study. The estimated sample size of 100 was set at 95% confidence level and $\pm 8\%$ precision.

This survey study had 2 sections: The first one includes the demographic data and the second section includes the questions based on the dietary habits. Patients were allowed to choose multiple responses

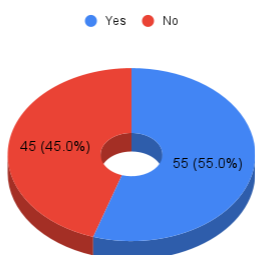
RESULTS:

A total of 100 responses were recorded out of which the demographic data reveals 46% were Male and 54% were females. Majority of the respondents were in the age group of 22 to 27 years of which maximum of them had their treatment going on for about 2 years.

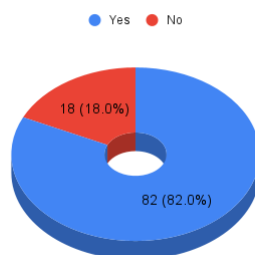


A majority of 55% of patients had felt a change in their diet during the orthodontic treatment. Also 82% of them had a positive impact on their food regime and started having a healthy dietary intake since the treatment had begun. About 73% of them had started to have uneasiness and difficulties during intake of certain type of food. 86% have started avoiding hard and sticky foods to a huge level.

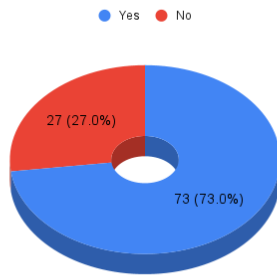
Any change in your diet after your orthodontic treatment started?



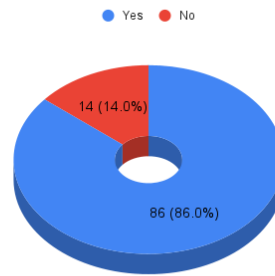
Have you started eating healthy food after your treatment began?



Any difficulties in eating any certain type of food?



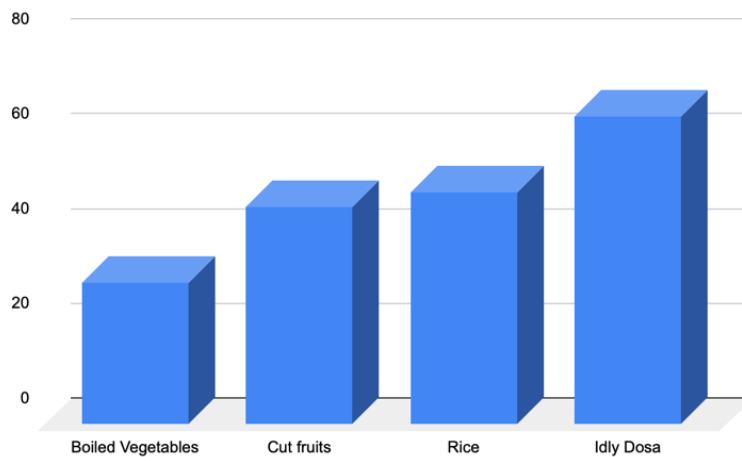
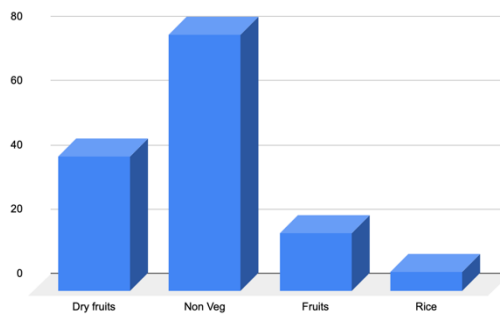
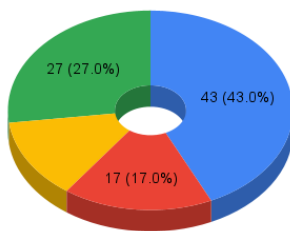
Are you avoiding hard and sticky foods?



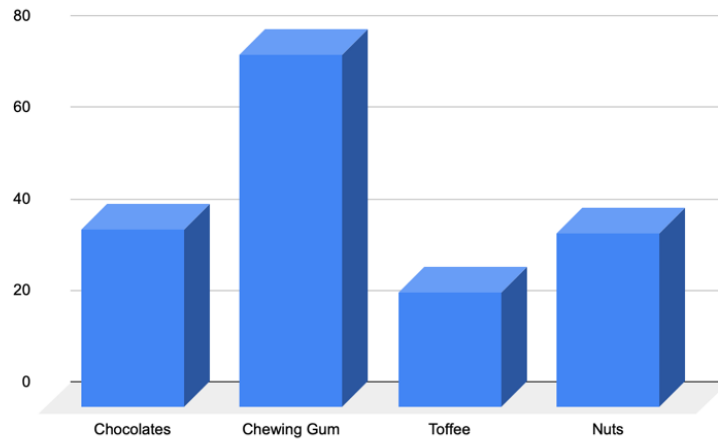
According to the obtained results when asked about what did they find difficult to eat during the course of their treatment non vegetarian food was avoided by 80 out of the total number of people and the next higher was Dry fruits. The data clearly highlights that Soft drinks (43%) and Cold Water (27%) were avoided by the participants. Almost maximum of the respondents preferred to eat Idly and Dosa (65) in comparison to the others but there was a marginal difference between cut fruits(46) and rice(49).

Select what all you find difficult to drink

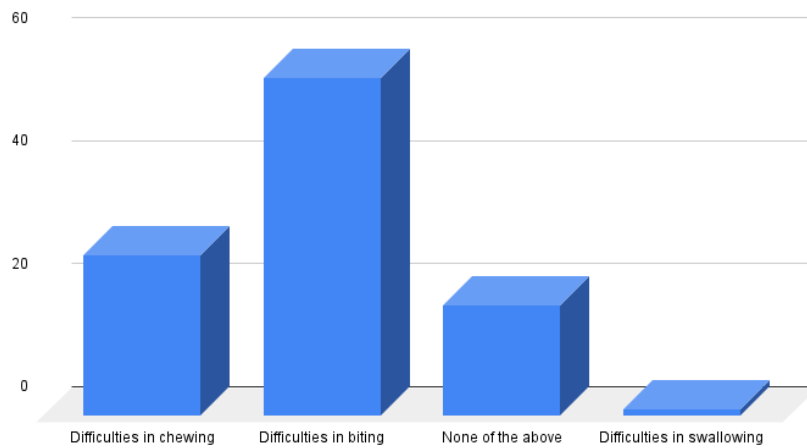
● Soft drinks ● Soups ● Tea and coffee ● Cold water



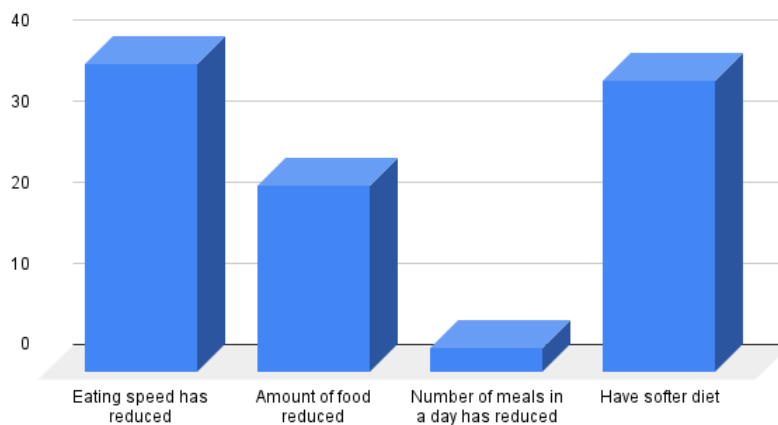
As an when the treatment proceeds, there is a need to cut off on some food items. The graph illustrates the point that around 79 out of the total respondents preferred to avoid Chewing Gum and 39 of them avoided Chocolates. Many people with a majority of 68% had complains of difficulty in biting while having any food items. Due to which among them 38 % have reduced their eating speed during the whole treatment time.



Have you faced any of the following difficulties?

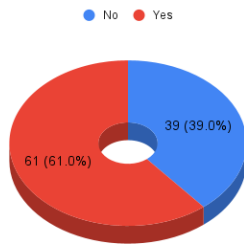


Has your way of eating changed in any way?

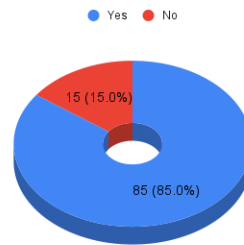


Furthermore, it can be observed that 61% have agreed that they need to cut their food into pieces and get them cooked in a different way. Around 85% of the people are quite conscious about checking the wire and brackets after every meal.

Do you have to cut your food into pieces or get it cooked in a different way?

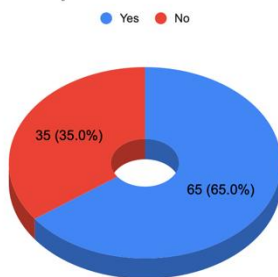


Are you conscious about checking your wire or brackets after every meal?

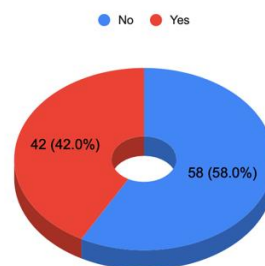


The results also demonstrate that 65% are uncomfortable having braces on while having a meal socially. But on the contrary maximum (58%) of them have not rejected going out for a meal while having their braces on, which leads to a more positive and a confident environment.

Do your braces make you uncomfortable while eating socially?

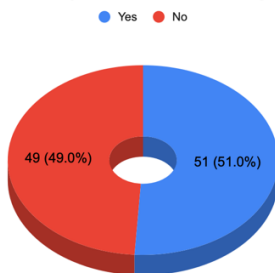


Have you ever rejected going out for a meal due to your braces?

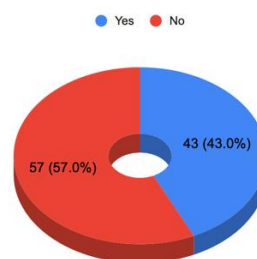


There was a very close difference when asked about that did they debond their brackets while eating. Around 51% agreed to it. Most of them (57%) don't have any major issue while brushing their teeth with braces on.

Have you debonded any brackets while eating?



Have you found it difficult to brush with your braces on after a meal?



DISCUSSION:

During orthodontic treatment, nutritional history should be accounted and patients' diet should be adjusted to include all necessary elements keeping in mind the habits, convenience, likes and dislikes of the patients.

During Orthodontic treatment, nutritional history should be taken into account and accordingly the meals should be adjusted keeping all the necessary elements in mind and also the patient likes, dislikes and habits^{11,12}

There have been a few reports on the effects of diet due to orthodontic treatment. Orthodontists always advice patients to have a soft diet to accommodate with the pressure sensitivity that they will experience gradually due to the tooth movement⁶. Many other studies too have also seen a huge impact on the behavior of the patient¹³.

The study gives us a brief view on the choices the patients have been making during the start of the orthodontic treatment and it is much on the healthier side. Since, the maximum respondents on whom the survey was conducted are from the early to late 20's,

the behavior of the patients regarding the effect of orthodontic treatment too have been assessed. It gives us a clear answer that many of them are conscious about their braces during eating or when they are in a social community.

Regarding the dietary intake of the patients, we found out that the majority of patients had complaints regarding difficulty to bite or chew. This was also in agreement with the previous studies conducted on effects on dietary intake of patients¹³.

There was also a clear finding that was reported in the change of consistency of the food type. Most commonly the food items and drinks that were avoided or the patients found difficult to have were: Non Vegetarian food, Dry Fruits, Soft drinks, Cold Water and Chewing Gum.

There were a variety of responses as the patients were from different ages groups. Since the majority of the respondents were in the age group of 20 – 27 years, the results were consciously shifted towards the esthetic and healthier side.

As adolescents age is the most critical stage during the development of the person hence intake of a proper diet needs to be given particular importance. It is recommended that targeted nutritional guidance is provided to patients during orthodontic treatment.¹⁴ The results of this study reveals that the patients had started to have a healthier and a more balanced diet after their orthodontic treatment started. They started having more fruits and boiled vegetables. Further studies need to be conducted on a larger group of people.

1987 guidelines for accreditation of dental schools by the American Dental Association require “the graduate must be competent to provide dietary counselling and nutritional education relevant to oral health” Study of diet and nutrition is also a mandatory part of the curriculum in Indian dental schools.^{7,8}

If the food cannot be cleaned off from the braces completely it may lead to decay and discolouration of the teeth. Braces and wires which are made of metal or ceramic, are fragile and are usually damaged by eating the wrong type of food.⁷ The present study briefly tell us that majority of the people are conscious about checking their wires and braces after every meal. This, indicates that patients have a sense of responsibility towards their diet.

CONCLUSION:

Food consumption habits usually play a major role during the orthodontic treatment, hence patients are advised to take up a balanced diet and should have softer food.¹⁵ The present study indicates that patients have adopted a more healthier diet during the course of their treatment. The findings highlight the need to conduct further studies on a larger population with different age groups.

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