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Dietary Habits in Patients Seeking Orthodontic Treatment

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Abstract

AIM: The objective of the study is to evaluate the dietary habits in patients seeking orthodontic treatment.

Materials and Methods: A questionnaire containing 10 multiple choice questions were given to patients seeking orthodontic treatment and answers were recorded.

Results: The best method for patient education is dietary history. Proper instructions on how to keep a dietary history for several days can provide the basis of a brief educational session with the orthodontist.

Conclusion: The present study identified factors that influence dietary intake in patients undergoing fixed appliance treatment. Patients reported adopting a healthier diet as a response to fixed appliance treatment.

These findings highlight the need to further explore dietary changes in response fixed orthodontic treatment in a larger population base.

Keywords : dietary habits , malocclusion , food habits.

Introduction

Diet is derived from the Greek word ‘diaita’ which represents a notion of a whole way healthy lifestyle including both physical and mental health rather than just a narrow weight loss regimen. Balanced diet means having all the necessary nutrients incorporated into the daily food forthe healthy growth and development of an individual.

The relationship of nutrition, food habits and orthodontic treatment has always been misunderstood, many people think if they get fixed appliance they are compromising on the nutrition value of food they don’t realise that all they only have to make certain modifications in the type of food they eat and avoid some,this is where the role of the practitioner comes, the patient must always be educated prior and during the treatment about the dietary habits.

Most of the patients undergoing Orthodontic treatment are mostly kids and adolescents and they are the most fussy eaters when compared to others, at such times utmost care must be taken in explaining to them and their parents carefully about the dietary plan. During growth period especially for teens, proper nutrition is vital and cannot be compromised so it must not be neglected and junk must be avoided as much as possible as they do more bad than any good. The increased consumption of soft drinks has

increased the number of health issues like obesity, diabetes, hypocalcaemia, dental caries, dental erosion, and mental health problems [1]

MATERIALS AND METHODS:

A questionnaire containing 10 multiple choice questions were given to patients seeking orthodontic treatment

1.Do you find speaking Impairment because of orthodontic treatment

A) YES B) NO

If YES; what is the reason

a) Physical aspects of the appliance
b) Advice given by orthodontist
c) Fear of breakage
d) Minimizing embarrassment
e) Time taken to eat
f) Chewing problems
g) Messy eating
h) Change in taste.

2.Do you prevent eating

a) Hard foods because of food getting stuck
b) Avoiding toffee
c) Avoiding chewing gum & fizzy drinks
d) Avoiding hard & sticky food

3.Are you restricting food intake because of being a "late-eater"

If YES; why

a) Pain
b) Immediately after activation
c) Immediately after bonding embarrassment from fellow school friends/ colleagues

4.Do you find weight loss after orthodontic treatment

A) YES B) NO

5.How many days once you consume sweets

a) Once a month
b) Once every week
c) Occasionally days
d) Daily

6.Do you find restriction in consuming junk food

a) Yes b) No

7.Did you switch to soft foods after orthodontic treatment

a) Yes b)No

8.Do you have difficulty in chewing

a) Pain
b) After bonded /adjusted

9.Do you have alteration of taste after ortho treatment

a) Yes b) No

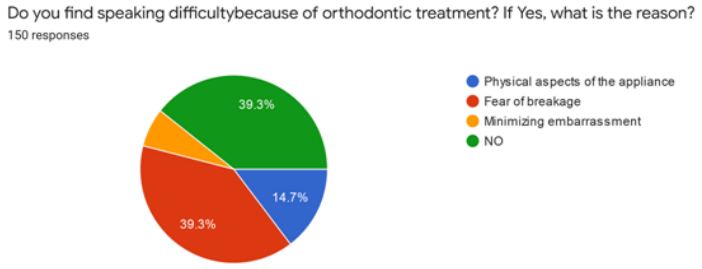
10.How often do you meltup a soft candy

a)<2 minutes. b)2-4 minutes c)5minutes d)>5minutes

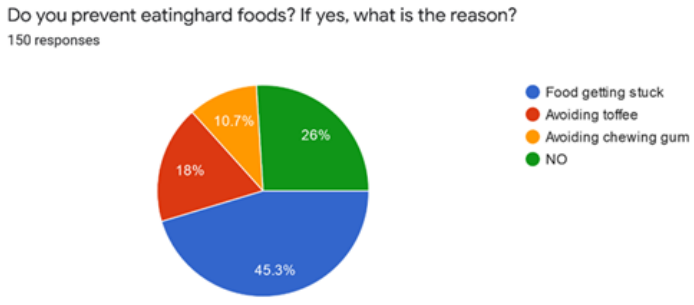
11.How often do you suck a hard candy

a)<2 minutes b)2-4 minutes c)5 minutes d)>5 minutes

Results:

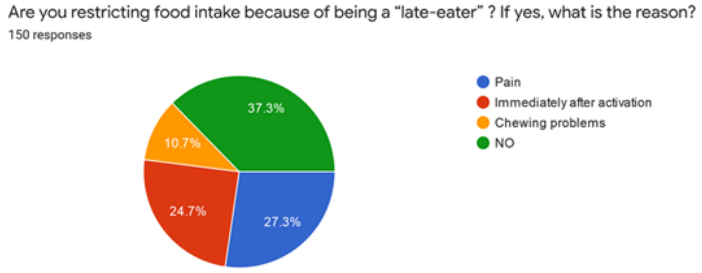


Based on the results obtained, 39.3% of them said they don't have difficulty speaking during orthodontic treatment, 39.3% had fear of breakage, 14.7%found it difficult to speak due to the physical aspect of the appliance and the rest of them avoided speaking due to embarrassment.

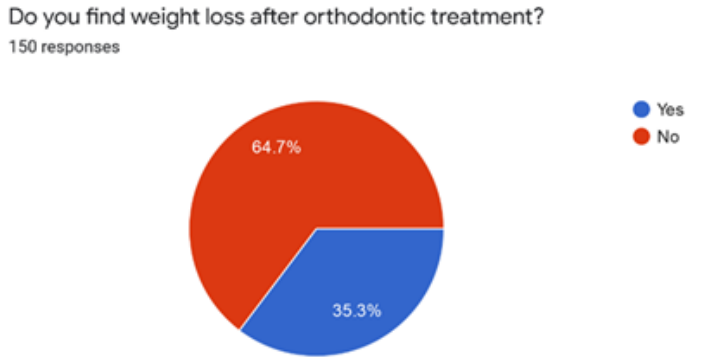


Results obtained shows that 45.3% of the people avoided eating hard food as they get stuck whereas 26% people

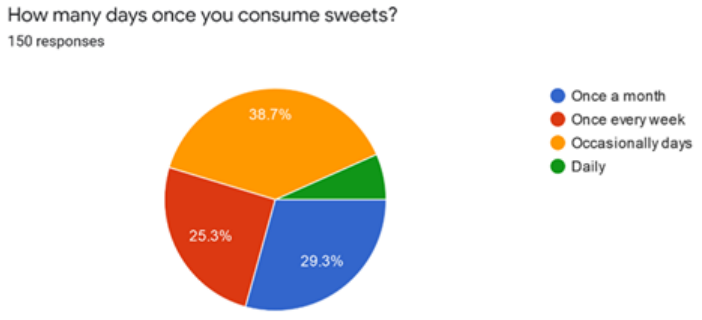
didn't avoid hard type of food. 18% of them avoided toffee and 10.7% of them chewing gum.



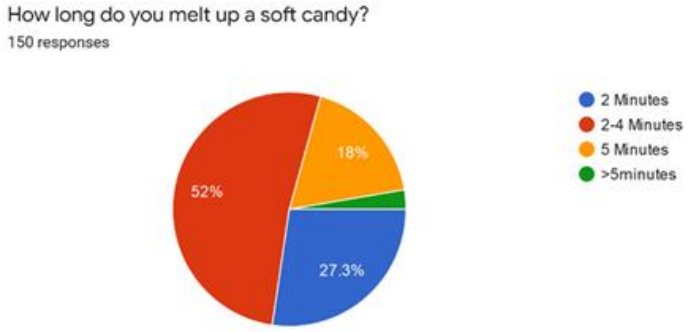
Results show that 37.3% of people did not restrict food intake whereas 27.3%of them had restricted food intake because of pain and 24.7% of them restricted after immediate activation and 10.7% of them due to chewing problems.



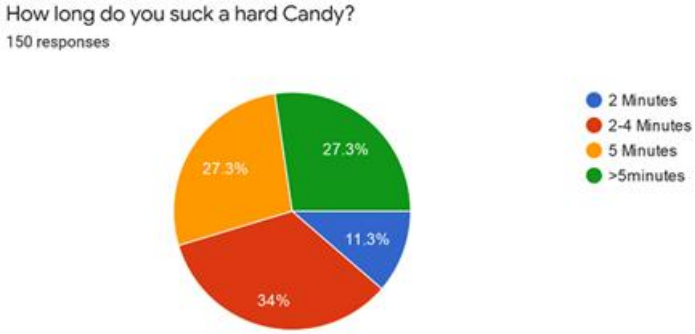
Based on the results obtained, 64.7% people did not obtain weight loss after the orthodontic treatment and 35.3% underwent weight loss.



Results show that 79.3% of the people did not face alteration of taste after orthodontic treatment whereas 20.7% of them had altered taste sensation.



Results show the average time taken by the people to melt up soft candy is 2-4 minutes for 52% of people.27.3 % of them take 2 minutes , 18% of them take up to 5minutes and the rest of them take more than 5 minutes.



Results show the time taken to suck hard candy is 2-4 minutes for 34% of the people, 5 minutes for 27.3% of the people , more than 5 minutes for 27.3% people and 2 minutes for 11.3% of the people.

Dietary habits may adversely affect orthodontic treatment by reducing the shear bond strength of brackets, increased risk of dental caries and enamel micro hardness and change of colour of orthodontic adhesives and elastic ligatures which appears as an unpleasant stain [3,4]The number of the studies related with the impact of acidic foods and soft drinks on the corrosion of orthodontic appliances and release of metal ions is very limited. Hair mineral analysis can be a useful tool in the determination of metal ions release from orthodontic alloys [5]

Although orthodontic treatments these days are designed to accommodate your lifestyle, some dietary modifications must be definitely made and care should be taken to

prevent damage to your braces and the risk of prolonging orthodontic treatment.

The first few days wearing fixed appliance may be the most restrictive. During this time, the adhesive is still curing which means you will need to consume only soft foods. This probably will not be a problem, however, as your teeth may be tender or sensitive while adjusting to the appliances.

The best foods to eat with fixed appliance are those that are not high in sugar and do not require excessive chewing. You can eat most foods normally the way you did without appliance, but some foods can damage orthodontic appliances or cause them to debond. Anyone who wears braces should avoid excessive snacking and aim to eat a healthy and balanced diet.

Regardless of what typeof foods you eat with fixed appliance, it is important to keep the crevices between the teeth and around the brackets very clean. That means brushing and use of floss and inter-dental brushes after meals to prevent the build-up of plaque and decay. Not only it does damage to your teeth, but can also cause discolouration.

Discussion

Often during the course of the Orthodontic treatment,patients starts developing cravings and may end up eating his/her favourite food item which might not be the best choice ,if it is not a braces friendly food option and can cause problems but some people try to avoid such food and make better choices, for example they avoid hard food because they feel more pain and pressure while biting them. The mean (SD) patient weight at first and second visit of orthodontic treatment was 67.43 (24.42) 64.98 (22.7) kg respectively. The difference in the patient weight between first and second visit was statistically significant. Patients with discomfort and patients who used medication to relieve pain were reported to haveweight loss

According to a study published by Hickory W and Nanda R on **Nutritional considerations in orthodontics.** It is proven that diet is a vital factor,that affects the general health of many orthodontic patients. Orthodontists will hardly visualise indicators of nutritional deficiencies[10].

Studies published by Paulina Wołowiec, Katarzyna Chojnacka,Bartłomiej W. Loster, and Marcin Mikulewicz on the release of trace Elements from Fixed Orthodontic Appliances,it was shown food with relatively low pH (such as fruit juices, coffee, yoghurt, and vinegar) can detoriate conditions in the oral cavity and can also release Cr and Ni ions from orthodontic appliances.This study was done with principles laid down in Helsinki Declaration. The study was carried out with 47 patients (16 males and 31 females), average age 17.2 ± 6.6 years. They were asked to fill a questionnaire coinciding their personality and it was found that a thorough investigation on the impact of dietary habits on release of metal ions from orthodontic appliances aids in developing nutritional recommendations for patients. These recommendations will reduce exposure of patients to Cr and Ni released from orthodontic appliances1[11]

According to research published by Jeevan M Khatri, Vijaymala D Kolhe on nutrition and orthodontics , Orthodontic patients avoid many sources of food, like fruits, raw vegetables, and other hard foods, as they cannot chew properly because of pressure of the teeth in the initial 3–5 days period.They also consume less proteins, fiber, calcium, iron, and some vitamin[12]

Patient-centered care is a relatively new concept, aimed at understanding patients' treatment needs, experiences, satisfaction, and the perceived overall quality of the healthcare system (McGrath and Bedi, 1999).[13]

Treatment time with fixed appliances is subject to considerable variation and is highly dependent on malocclusion complexity and the treatment approach

adopted (Turbill *et al.*, 2001). Among the frequent complaints that patients raise during treatment is the amount of discomfort, including pain from their teeth, oral ulceration, tongue soreness, and functional limitations (Brown and Moerenhout, 1991; Sergl *et al.*, 1998; Bergius *et al.*, 2002; Bartlett *et al.*, 2005; Fleming *et al.*, 2009).[14]

The relationship between oral health status and dietary intake is well documented in the literature. It is acknowledged that both the number and condition of teeth can result in impaired masticatory function, which in turn can lead to changes in food choice and habits (Acs *et al.*, 1992; Sheiham *et al.*, 1999).[15]

In orthodontics, many studies have explored the physical, social, and psychological effects of treatment and how pain and discomfort affect these aspects of life. Most of these investigations have found that oral heath status and quality of life are negatively affected (Zhang *et al.*, 2008). However, there is very limited information available on the effects of appliance treatment on dietary intake (Cheraskin and Ringsdorf, 1969a,b; Riordan, 1997). The main challenge in this field is that nutritional epidemiology is complex and methods of dietary assessment are not without limitations (Bingham, 1991).[16]

In the last two decades, qualitative approaches in research have become popular and accepted methods across different disciplines (Feldmann *et al.*, 2007; Ryan *et al.*, 2009). In contrast to quantitative research, qualitative research is concerned with the quality or nature of human experiences and the meanings of phenomena to individuals. If a study is explanatory in nature or attempting to find a meaning and understand experiences of a given situation to a group of individuals, qualitative methodologies are an appropriate choice (Draper, 2004). [17]

CONCLUSION: It is highly beneficial to provide adequate dietary guidance for the orthodontic patients to optimize patients physiologic response to the orthodontic treatment. The practitioners should take responsibility for obtaining nutrition history, evaluating the diet, educating the patient about diet components, their importance in oral health, motivating the patient to improve diet & follow up to support patients effort to change food behaviour. Also the patients with braces should be advised about the importance of including food like fruits, vegetables, grains ,protein and cereals in their diet and have a wholesome balanced diet plan rather than taking junk foods such as cakes, pastries, soft drinks etc. which are loadedwith sugar and fat. They should also limit their salt, fat and sugar intake. Furthermore, the patient undergoing orthognathic surgeries present special considerations. Their diet should include nutritious soft food with an adequate balance in all components, including carbohydrates, fatty acids, proteins, vitamins & minerals.

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