

## Awareness on various restraints in perceiving orthodontic treatment among the adolescent age group

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### ABSTRACT

**Background:** There is a need for orthodontic treatment in the adolescent age group as almost all the individuals need orthodontic treatment to correct their occlusion. This study is carried out to evaluate the attitude of patients toward various restraints in perceiving orthodontic treatment among adolescent age group and also to have an idea on awareness about orthodontic treatment among the adolescent age group. **Aim:** The aim of the study is to analyze various restraints in perceiving orthodontic treatment among the adolescent age group. **Materials and Methods:** The study is carried out by preparing a questionnaire containing 13 questions which are to be circulated among randomly selected adolescent age group population using an online survey tool – survey planet. 100 questionnaires were filled. The questionnaire was used to analyze the various restraints in perceiving orthodontic treatment. General awareness about orthodontic treatment was also analyzed among adolescent age group population. **Results:** Nearly 73% adolescent population stated 2 years duration of treatment is major restraint in perceiving orthodontic treatment, 78% of population stated cost as restraint in perceiving orthodontic treatment, and 78% population did not undergo orthodontic treatment as they did not want their esthetics to be compromised for 2 years duration. Most of them also stated that they did not perceive orthodontic treatment as they could not reach the specialist; hence, it was also known that there is less number of specialist in the population. **Conclusion:** The main restraint encountered or faced by an adolescent individual in perceiving orthodontic treatment is the financial crisis which is not met due to the high cost of the treatment, following which long duration of treatment also serves as a restraint in perceiving orthodontic treatment. Other restraints in perceiving orthodontic treatment include undergoing extraction for treatment, dietary changes for the next 2 years, the unesthetic appearance of the orthodontic appliance.

**KEY WORDS:** Adolescent age group, Orthodontic treatment, Questionnaire, Restraints, Survey

### INTRODUCTION

Many dentists on a daily basis have been noticing in their private practices that there is increasing number of adult patients seeking orthodontic treatment.<sup>[1-3]</sup> When one plans for orthodontic treatment among adolescent age group, we should bear in mind that mature population generally present a different experience in relation to orthodontic treatment in respect to buccal pathologies, and psychological limitations when compared to children.

The detailed idea in the psychological aspects of the adolescent population shows that they have a generally greater awareness of their malocclusion, which generates very optimistic expectations about

the final results of their treatment.<sup>[2,4,5]</sup> In the search for providing a productive treatment to such patients, it is compulsory that orthodontists research and comprehend the desires, troubles, and inspirations of this adolescent population, so as to offer treatment that fulfills their desires.

Epidemiologic data collected since the 1980s show that there is an increase in the demand of patients in the adolescent age group (18+) who want orthodontic treatment. In the United States, in 1988, 60–70% of patient were looking forward to orthodontic treatment, whereas in Europe, also adolescent population showed increased interest in seeking orthodontic care.<sup>[3,5]</sup> Recent studies show that the frequency of malocclusion in the adolescent population is similar, if not higher to that observed in children and teenagers. According to the North American government in the NHANES III (Third National Health and Nutrition

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Survey), in 1990s, overjet was seen in 41.1% of American adolescent population, deep bite by 49%, open bite by 3.3%, and there was also a significant malalignment present in the upper and lower anterior 56% and 62.9%, respectively.<sup>[1,6]</sup> In 2003, a study carried out with 200 adolescent patients, evaluated the various restraints in perceiving orthodontic treatment. The researchers found out the restraints to be, from the highest to the lowest prevalence: Long treatment duration, discomfort of the appliances, unesthetic appearance of the brackets, pain, and fear of failure of the final result.<sup>[7]</sup>

There is large demand among adolescent age group who seek and need orthodontic treatment; it has been reported that most of these patients are females<sup>[3,4]</sup> and that the indication for them to receive an orthodontist comes from the family dentist.<sup>[3]</sup> Just like all the other health-related treatment, orthodontic treatment also has its indications and contraindications, which must be carefully assessed before initiation of the treatment.

The indications for orthodontic treatment among adolescent age group are: The possibility of improving teeth implantation in the periodontal tissues, determining a harmonious occlusion, distribution of edentulous spaces so that they can be restored later, improvement of the occlusal condition and protection of the stomatognathic system and satisfaction of the patient's esthetical demands.

The contraindications for orthodontic treatment in adolescent patients are: Severe skeletal discrepancies (in these cases surgical treatment would be preferable), patients with systemic diseases, severe alveolar bone loss, when the results might not fulfill the expectations of both the patient and the professional in charge of the treatment, questionable prognostic stability, and lack of patient interest or motivation.<sup>[8]</sup>

The main reason that drives adolescent individuals for orthodontic care is their dissatisfaction with their dental and/or facial appearance; many studies report that adolescent patients have greater concern for their dental esthetics thus presenting higher demands concerning the results achieved after orthodontic therapy.<sup>[2,3,9,10]</sup> Previous studies showed that many of the patients presented a neurotic or unstable psychological profile with problems of self-esteem. These studies warn orthodontists that these patients tend to have great expectations, some of them even unreal expectation, regarding treatment results. Hence, a clear idea on the result of the treatment should be explained to the patient to avoid future disappointments.<sup>[2,4,5]</sup>

In 2005, researchers circulated a questionnaire to be answered by 100 adolescent patients treated in the

Academic Center of Dentistry in Amsterdam 3 years after the termination of their orthodontic treatment. This study showed that patient satisfaction was better when there was good orthodontist/patient relationship during treatment and females showed a lower level of satisfaction with the results of treatment when compared with that of the male patients.

Orthodontic treatment is generally regarded as a way to improve personal appearance, augment oral health, and increase self-confidence among the adolescent population. Due to improvement in the field of preventive dentistry, there has been a significant reduction in the need for other general dental procedures, yet there is no reduction in the need/demand for orthodontic treatment.<sup>[11-13]</sup> All the needs and demands could not be met at all the times due to lack of resources.<sup>[14-16]</sup> Therefore, to meet the maximum demands and results proper orthodontic services should be planned and implemented.<sup>[17,18]</sup> Difficulty to reach specialists in distant areas is considered as an even more important restraint in perceiving orthodontic treatment than financial matters when considering the barriers to seek orthodontic services.<sup>[19,20]</sup>

The aim and objective of the present study were to analyze, the various restraints encountered by adolescent age group in perceiving orthodontic treatment through a questionnaire which is circulated using an online survey tool.

## MATERIALS AND METHODS

A cross-sectional study was conducted among the adolescent age group. 100 patients were randomly selected who belong to adolescent age group and the questionnaire was filled. This survey assessed the various restraints in perceiving orthodontic treatment among adolescent age group.

### Data Collection

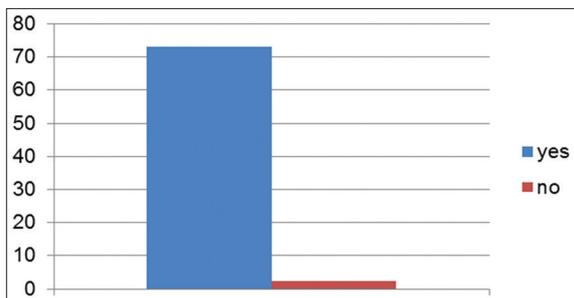
A questionnaire consisting of 13 questions on various restraints in perceiving orthodontic treatment among adolescent age group was circulated among randomly selected patients. It aimed at assessing the various restraints in perceiving orthodontic treatment among the adolescent age group.

## RESULTS

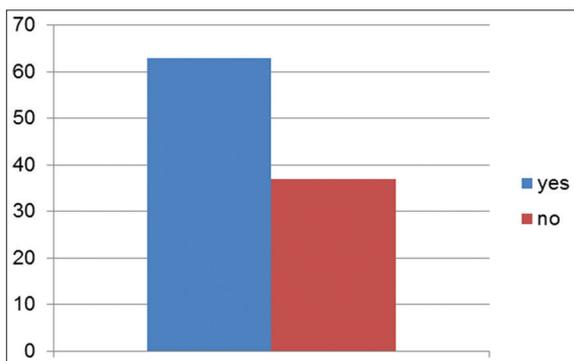
The result obtained from our study is as follows, the following were the restraints in perceiving orthodontic treatment according to our study. From Graph 1, it is clear that 73% of population did not perceive orthodontic treatment as the treatment takes a long duration to complete. Graph 2 gives us the idea that most of the adolescent individual are not willing to undergo extraction as a part of orthodontic treatment.

This study shows that 63% of individual did not want to undergo extraction for orthodontic treatment. Hence, extraction served as a restraint in perceiving orthodontic treatment. 78% of the adolescent age group population also reported that financial requirement as a restraint in perceiving orthodontic treatment as per Graph 3. Hence, this study also states that cost of treatment also serves as a restraint in perceiving orthodontic treatment.

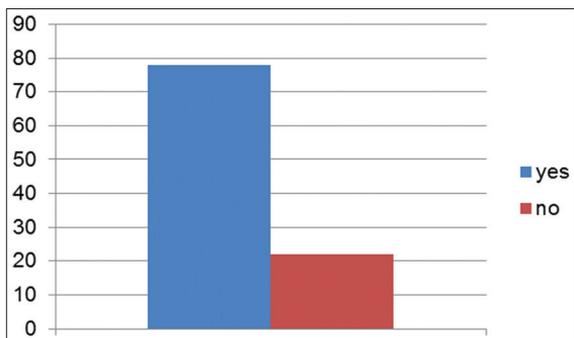
The results of our study drawn from Graph 4 show that a larger group of population were aware of the need for orthodontic treatment and were willing to perceive it. 77% of the adolescent population were interested in correcting their malaligned teeth. Graph 5 shows that 19% of population did not perceive orthodontic treatment due to their fear of treatment, pain and the completion result of the treatment. 78%



**Graph 1:** Year duration restraint for orthodontic treatment



**Graph 2:** Acceptance for extraction



**Graph 3:** Cost a restraint for treatment

of population did not perceive orthodontic treatment as the orthodontic appliance on the teeth affects the esthetic appearance of the adolescent individuals for the next 2 years [Graph 6]. These were the results obtained from the study.

Table 1 infers that most of the adolescent individual preferred lingual bonded appliance followed by clear aligners followed by ceramic and least preferable being the conventional metal brackets.

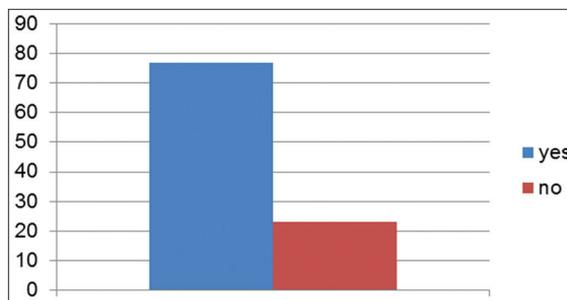
Table 2 infers that 56% adolescent population accepted for dietary changes that need to be taken during treatment which is just half the population. Hence, it becomes clear that most of them do not want to alter dietary habit for the treatment. Most of the adolescent population (92%) were unaware of the

**Table 1: Preference of lingual bonded appliance**

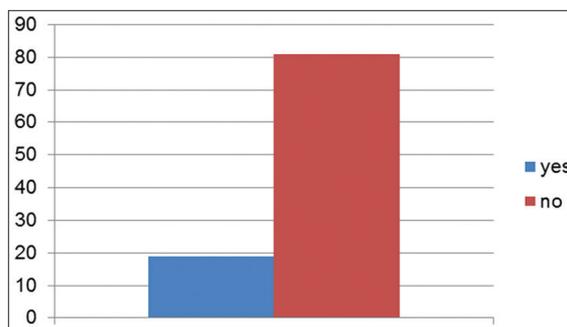
Preferred type of bracket if treatment was perceived	
Metal	18%
Ceramic	22%
Lingual bonded brackets	33%
Clear aligners	27%

**Table 2: Dietary changes that need to be taken during treatment**

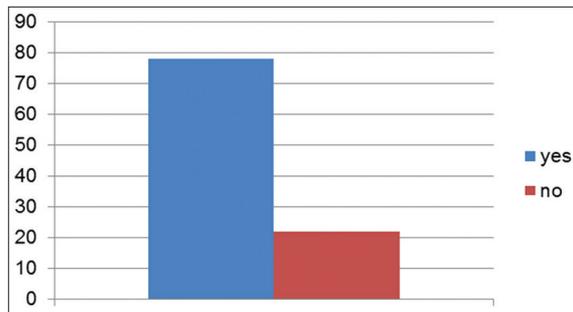
Questions	Yes (%)	No (%)
Are you willing to alter dietary habit for the treatment	56	44
Are you aware of the oral habits which need to be corrected before starting of alignment	8	92
Do you use toothpick, pins, and nails to clean your teeth	6	94



**Graph 4:** Interest for orthodontic treatment



**Graph 5:** Knowledge on demerits of orthodontic treatment



**Graph 6:** Esthetic concern a restraint in perceiving orthodontic treatment

various adverse oral habits that need to be terminated before starting the treatment. Adverse oral habit includes mouth breathing, tongue thrusting, lip trap, and thumb sucking. 94% of population from this study did not use toothpicks, pins, and nails for cleaning.

## DISCUSSION

This study consisted in the evaluation of 100 adolescent patients to evaluate the various restraints in perceiving orthodontic treatment. As seen in the results, when questioned about the restraints in perceiving orthodontic treatment, the most common restraints were the following: 78% of adolescent population had financial crisis as a restraint in perceiving treatment; 77% reported that they were unaware of the need for orthodontic treatment hence just 23% of adolescent population was aware of the need of orthodontic treatment.

The high relevance of financial crisis for treatment seen in this population shows that this specific population has serious financial restraints, which sometimes may prevent them from gaining access to better health and well-being conditions. Other restraints toward orthodontic treatment according to this study reported included a complete 2 years duration of the treatment by 73% of the population which is also in accordance with the other studies performed by Langlade.<sup>[7]</sup> This study also shows that 63% of population was not willing for extraction as a part of orthodontic treatment. 19% of population did not perceive the treatment due to fear of pain and complications. However, 78% population was concerned about esthetic during the treatment.

When assessing the chief concern of adult patients who sought late orthodontic treatment, it is clear that most of the patients had esthetic reasons (78%). This data corroborate with previous studies that show that the great majority of patients seek treatment to improve their smile esthetics and their facial esthetics performed by Breece and Nieberg and McKiernan *et al.*<sup>[21,22]</sup>

A previous study also evaluated the reasons that led some patients to initially reject the indication

for orthodontic treatment and found the following reasons, in relevance order: Long duration of the proposed treatment; discomfort caused by the braces, rejection to the anti-esthetic look of brackets, fear of pain, and the fear of disappointment with the final results.<sup>[7]</sup> Which is very much according to the results of our study.

In relation to the main discomforts experienced, some complained about the long period of treatment (23.6%), in our study also 73% complaint about long duration of treatment as a restraint in perceiving orthodontic treatment. In previous studies, patients highlighted discomfort as the worst aspect of orthodontic treatment; however, this is not in relation to the result of our study.<sup>[1,21]</sup>

In a research made in 1981, all adult patients assessed, who were undergoing orthodontic care, considered the treatment advantageous despite the discomfort related to treatment; they did not regret having started it and would suggest it to others who were in doubt about the cost-benefit ratio of orthodontic treatment.<sup>[8]</sup> According to our study, 19% of population were afraid of the result of the treatment, and hence this was also found to be a restraint in perceiving orthodontic treatment among adolescent individual. Other authors also found a high level of satisfaction in patients when faced with the results achieved through the orthodontic treatment performed.<sup>[1]</sup> These information were also confirmed by the present study.

## CONCLUSION

From this study, we can have a detailed idea on various restraints encountered in perceiving orthodontic treatment among the adolescent age group. The main restraint encountered or faced by an adolescent individual in perceiving orthodontic treatment is the financial crisis which is not met due to the high cost of the treatment, following which long duration of treatment also serves as a restraint in perceiving orthodontic treatment. Other restraints in perceiving orthodontic treatment include undergoing extraction for treatment, dietary changes for the next 2 years, the unesthetic appearance of the orthodontic appliance. However, a smaller group of the adolescent individual do not perceive orthodontic treatment due to the fear, pain of the treatment and also as they are unaware of the need of the orthodontic treatment. These are the various restraints concluded from this study in perceiving orthodontic treatment among the adolescent age group.

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