

## A Survey Of Orthodontic Treatment Among Participants Who Had Undergone Orthodontic Treatment

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### ABSTRACT

**INTRODUCTION :** Orthodontic treatment is a treatment of diagnosis, prevention and correction of malpositioned teeth, jaws and also any misaligned bite patterns. Modifying facial growth is known as dentofacial orthopedics. Among people abnormal alignment of teeth and jaws has become common. Individuals with malocclusions are not satisfied with their facial appearance, resulting in inappropriate social responses and development of emotional and dental problems.

**AIM :** The aim of this study was to conduct a survey about orthodontic treatment among participants who had undergone orthodontic treatment.

**MATERIALS AND METHOD :** This cross-sectional study was done among orthodontic patients about orthodontic treatment. The questionnaire was composed of 17 questions and this questionnaire was circulated among 127 patients in Hyderabad through google forms. The results were analysed by statistically using SPSS software with p value of  $p < 0.05$  of 95% confidence level.

**RESULTS :** In the present study we observed that out of 127 participants 51.24% are male and 48% were female. 89.26% were of age 18 - 35, 9.92% of them were of age 35 - 50 and 0.83% of them were of age 50 and above. Among 127 patients who responded, 97.52% were orthodontic patients and the remaining 2.48% were normal patients. 68.60% participants have undergone orthodontic treatment to improve their facial appearance, 14.88% participants have undergone orthodontic treatment to improve chewing efficiency and 16.53% have undergone orthodontic treatment through dentist suggestion.

**CONCLUSION :** The present study from the survey thus concluded that orthodontic treatment was beneficial for the majority of the participants...

**Key Words:** Orthodontic treatment; survey; advantages; disadvantages

### INTRODUCTION

Ortho is a greek prefix meaning “straight”, “upright” or “correct” and dontics is also a greek word meaning teeth. Orthodontics is a specialist branch of dentistry (1). Orthodontic treatment is a treatment of diagnosis, prevention and correction of malpositioned teeth, jaws and also any misaligned bite patterns.(2) Modifying facial growth is known as dentofacial orthopedics. Among people abnormal alignment of teeth and jaws has become common. According to American Association of Orthodontics, nearly 50% of the population has malocclusions severe enough to benefit from orthodontic treatment, but still this decreases to 10% according to American Association of Orthodontics when referring to medically necessary orthodontics(2,3). But there is a lack of strong scientific evidence for the health benefits of orthodontic treatment. The main reason behind it is patients’ desire to maintain their natural teeth and improve their function as well as appearance.(4)

Treatment is usually started in teenagers like a person before reaching adulthood since bones can more easily be moved.(2,3,5-7) On average orthodontic treatment takes about 24 months and some patients require less than 12 months but for few people it may take 3 years also.(8) Malocclusion results in various problems in each individual, including dissatisfaction of facial appearance, problems associated with function of masticatory system, dysfunction of the temporomandibular joint, problems with swallowing and speech, susceptibility to facial traumatic injuries and development of caries and periodontal problems(9). Individuals with malocclusions are not satisfied with their facial appearance, resulting in inappropriate social responses and development of emotional and dental problems.(10)

Actually there is no scientific evidence that proves that orthodontic treatment has health benefits, but many of them mentally or psychologically suffer a lot as they are dissatisfied about their facial appearance, so orthodontic treatment can actually help to remove psychological barriers among people. So directly or indirectly orthodontic treatment has health benefits. There are many benefits of orthodontic treatment as well as few side effects during the treatment. So this is the survey of orthodontic treatment among orthodontic patients in Hyderabad. The aim of the present study is to analyse the awareness about the advantages and disadvantages of orthodontic treatments.

**MATERIALS AND METHODS :**

This cross-sectional study was done among orthodontic patients about orthodontic treatment. A basic questionnaire was prepared by the authors in which even demographic questions were also asked. The questionnaire was composed of 17 questions and this questionnaire was circulated among 127 study participants in Hyderabad through google forms. Table - 1 represents the 17 questions which were circulated among the participants. Then the collected responses were converted to microsoft excel and then output was generated from SPSS software version 23 with p value of of p<0.05 of 95% confidence level. Our team has extensive knowledge and research experienc that has translate into high quality publications (11-18),(19),(20),(21),(22,23),(24),(25),(26-30)

The questionnaire contains the following questions

Table - 1- Questionnaire

QUESTIONS	OPTIONS
Name	-
Age	1. 8 - 18 2. 18 - 35 3. 35 - 50 4. 50 and above

Gender	<ol style="list-style-type: none"> <li>1. Male</li> <li>2. Female</li> </ol>
Did you undergo/undergoing orthodontic treatment	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> </ol>
Reason for your orthodontic treatment	<ol style="list-style-type: none"> <li>1. To correct misalignment of teeth (facial smile/appearance)</li> <li>2. To improve chewing efficiency</li> <li>3. Dentist suggestion</li> </ol>
I was _____ before orthodontic treatment	<ol style="list-style-type: none"> <li>1. Scared</li> <li>2. Tensed</li> <li>3. Excited</li> <li>4. Normal</li> </ol>
Were you able to speak confidently in public with braces	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. At times</li> </ol>

Did you suffer with ulcers and cuts due to braces	<ol style="list-style-type: none"><li>1. Often</li><li>2. Very often</li><li>3. Rare</li><li>4. At times</li></ol>
What was the intensity of pain due to braces	<ol style="list-style-type: none"><li>1. Severe</li><li>2. Moderate</li><li>3. Mild</li><li>4. No pain</li></ol>
How did braces affect your food	<ol style="list-style-type: none"><li>1. Missed my favourite food</li><li>2. Affected my regular diet</li><li>3. Benefited by avoiding junk food</li><li>4. No effect</li></ol>
I was _____ about my oral hygiene with braces	<ol style="list-style-type: none"><li>1. Very conscious</li><li>2. Conscious</li><li>3. Not worried</li><li>4. Normal</li></ol>

<p>How much time did it take for you to get adapted to braces</p>	<ol style="list-style-type: none"> <li>1. 1 - 2 months</li> <li>2. 2 - 3 months</li> <li>3. 3 - 4 months</li> <li>4. 5 or months</li> </ol>
<p>Frequency of brushing in a day</p>	<ol style="list-style-type: none"> <li>1. Once</li> <li>2. Twice</li> <li>3. 3 - 5 times</li> <li>4. After every meal</li> </ol>
<p>Did you face any humiliations with peers</p>	<ol style="list-style-type: none"> <li>1. Often</li> <li>2. Very often</li> <li>3. Rare</li> <li>4. Never</li> </ol>
<p>Did you face any of the following problems due to braces</p>	<ol style="list-style-type: none"> <li>1. Discolouration of teeth</li> <li>2. Swollen gums</li> <li>3. Chipped or cracked teeth</li> <li>4. Food getting stuck</li> <li>5. None</li> </ol>

<p>How did orthodontic treatment benefit you</p>	<ol style="list-style-type: none"> <li>1. Able to smile confidently</li> <li>2. Improved my inner confidence</li> <li>3. Improved facial looks</li> <li>4. Improved chewing efficiency</li> <li>5. Improved dental hygiene</li> <li>6. No benefit</li> </ol>
<p>Treatment result</p>	<ol style="list-style-type: none"> <li>1. Was above my expectations</li> <li>2. Reached my expectations</li> <li>3. Did not reach my expectations</li> </ol>
<p>Do you recommend orthodontic treatment for others</p>	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No</li> <li>3. definitely</li> </ol>

**RESULTS :**

In the present study we observed that out of 127 participants, figure 1 represents that 89.26% were of age 18 - 35, 9.92% of them were of age 35 - 50 and 0.83% of them were of age 50 and above. Figure 2 represents that 51.24% of them were male and 48% were female.

The present study has observed that Figure 1 represents that 97.52% were orthodontic patients and the remaining 2.48% were normal patients. 68.60% participants have undergone orthodontic treatment to improve their facial appearance, 14.88% participants have undergone orthodontic treatment to improve chewing efficiency and 16.53% have undergone orthodontic treatment through dentist suggestions. 12.40% participants were excited before orthodontic treatment, 34.71% of them were normal before orthodontic treatment, 24.79% of them were scared before orthodontic treatment and 28.10% of them were tense before orthodontic treatment. Figure 2 represents that 28.93% participants often suffered with ulcers and cuts due to braces, 38.84% rarely suffered with ulcers and cuts due to braces, 10.74% of them very oftenly suffered with ulcers and cuts due to braces and 21.49% participants never suffered with ulcers and cuts due to braces. 38.02% participants had mild pain due to braces, 41.32% participants had moderate pain due to braces, 9.92% of them had severe pain and 10.74% participants had no pain due to braces.

Furthermore it was noticed that Figure 3 represents that 41.32% participants were conscious about their oral hygiene with braces, 14.05% participants were normal about their oral hygiene with braces, 11.57% participants were not worried about

their oral hygiene with braces and 33.06% of them were very conscious about their oral hygiene with braces. 71.90% participants took 1 - 2 months to get adapted to braces, 12.40% participants took 2 - 3 months to get adapted to braces, 8.26% of them took 3 - 4 months to get adapted to braces and 7.44% of them took 5 or more months to get adapted to braces.

Around 47.11% participants never faced any humiliations from peers, 17.36% participants often faced humiliations with peers, 29.75% rarely faced humiliations with peers and 5.79% of them very oftenly faced humiliations with peers. 53.72 % participants faced a problem where food got stuck, 23.14% of them faced discoloration of teeth, 6.61% of them had swollen gum due to braces and 14.88% of them did not face any problem with braces. 36.36% participants responded that orthodontic treatment benefited them because they were able to smile confidently, 23.97% participants responded that orthodontic treatment benefited them by improving facial looks, 15.70% of them said that their inner confidence was improved, 6.61% of them responded that their dental hygiene was improved and 10.74% of them responded that their teeth look straight because of orthodontic treatment. 61.98% participants responded that the treatment result reached their expectations, 33.88% participants responded that the treatment result was above their expectations and 4.13% participants responded that the treatment result did not reach their expectations. The current study observed that Figure 4 represents that 80.99% participants responded that they will recommend orthodontic treatment for others, 2.48% participants responded that they will not recommend orthodontic treatment for others and 16.53% participants responded that they will definitely recommend orthodontic treatment for others. Further the study observed that Figure 5 represents that majority (52.07%) of the participants of age 18 - 35 brush their teeth twice a day. Pearson chi square value is 0.018, (p value is < 0.05), hence it is statistically significant and Figure 6 represents that majority ( 23.97%) of the female participants are not able to speak confidently in public with braces, and 23.14% of male participants are not able to speak confidently in public with braces. Pearson chi square value is 0.036 ( p value < 0.05) so it was statistically significant.

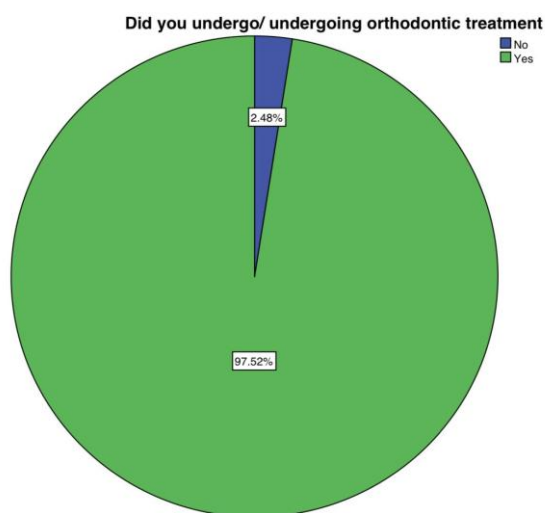


Figure 1 represents the pictorial representation of participants who are undergoing orthodontic treatment. Blue indicates no and green indicates yes. Majority (97.52%) of them are undergoing orthodontic treatment and 2.48% of them are not undergoing any orthodontic treatment.

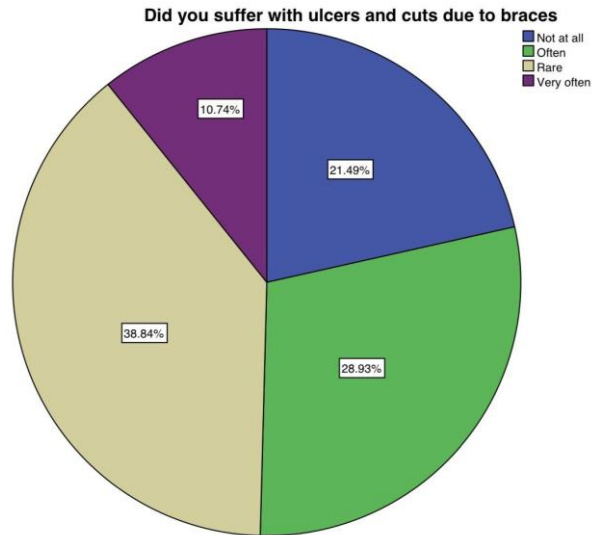


Figure 2 represents the pictorial representation of the participants who suffered with ulcers and cuts due to braces. In the pie chart blue colour indicates not at all, green colour indicates often, brown colour indicates rare and violet colour indicates very often. Majority (38.84%) of the participants have suffered rarely.

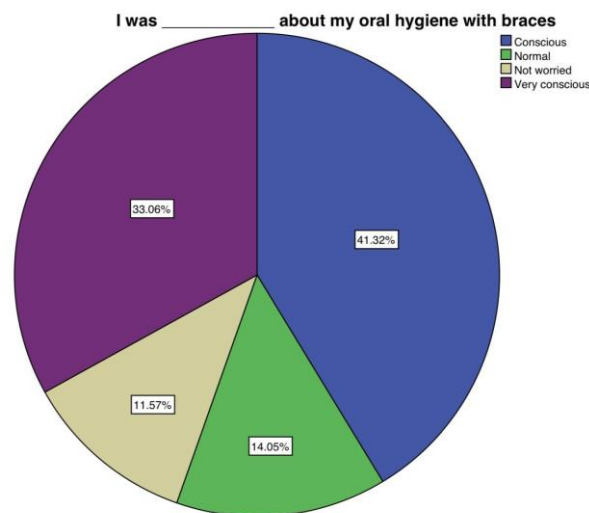


Figure 3 represents the pictorial representation of oral hygiene with braces among participants. In the pie chart blue colour indicates conscious, green colour indicates normal, brown colour indicates not worried and violet colour indicates very conscious. Majority (41.32%) of them were conscious about their oral hygiene. 14.05% participants were, 11.57% participants were and 33.06% of them were very conscious about their oral hygiene with braces.

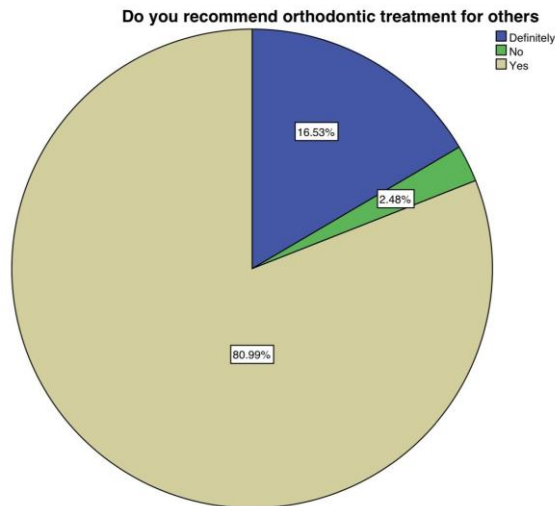


Figure 4 represents the pictorial representation representing the participants recommending orthodontic treatment for others. Blue colour indicates definitely, green colour indicates no and brown colour indicates yes. majority (80.99% of the participants recommended orthodontic treatment for others, 2.48% of them did not recommend and 16.53% of the participants definitely recommended orthodontic treatment for others.

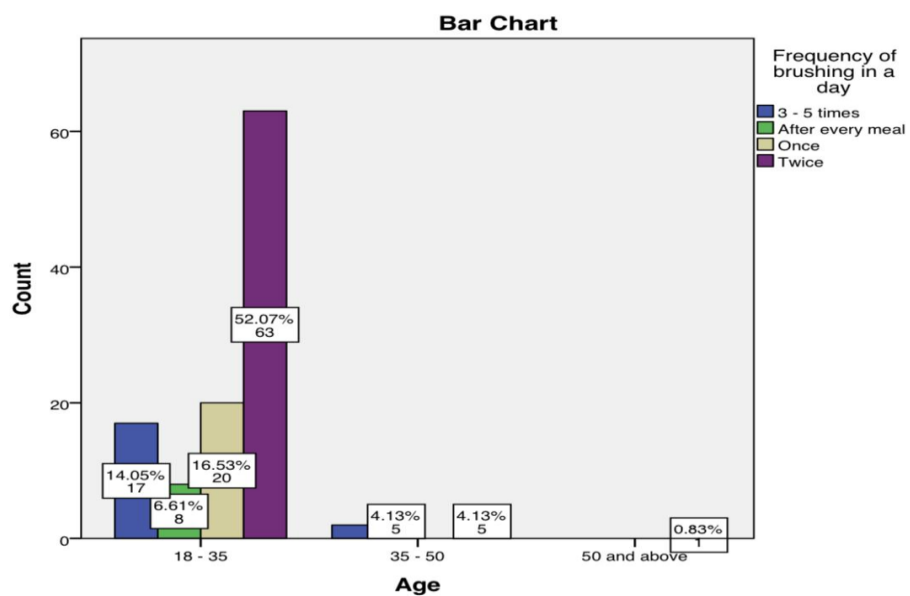


Figure 5 represents the association between age of the participants and the percentage of responses given for frequency of brushing in a day. In the graph violet colour indicates twice, blue colour indicates 3 - 5 times, brown colour indicates once and green colour indicates after every meal. Majority (52.07%) of the participants are of age 18 - 35 and they brush twice a day. Pearson chi square value is 0.018, ( p value is < 0.05), hence it is statistically significant.

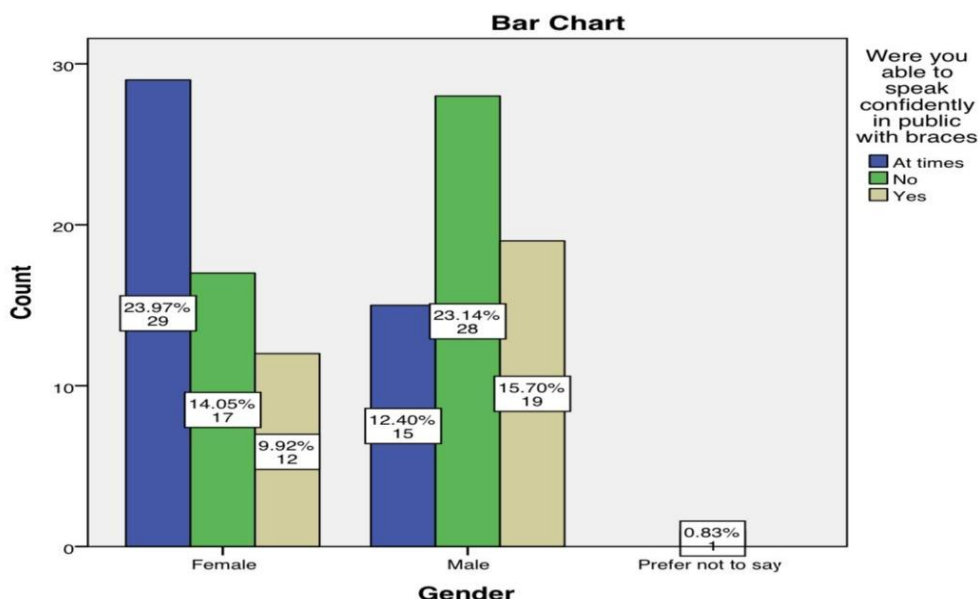


Figure 6 represents the association between gender of the participants and the percentage of responses given by the participants for whether they are able to speak confidently in public with braces. In the graph green colour indicates no, blue colour indicates at times and brown colour indicates yes. Majority ( 23.97%) of the female participants are not able to speak confidently in public with braces, and 23.14% of male participants are not able to speak confidently in public with braces. Pearson chi square value is 0.036 ( p value < 0.05) so it was statistically significant.

**DISCUSSION :**

Orthodontic treatment is basically a treatment of diagnosis, prevention and correction of malpositioned teeth. Ortho means straight and dontics means teeth. The main reason that people undergo orthodontic treatment is to improve their facial smile/ appearance.(31) But people also undergo orthodontic treatment to correct misaligned jaws. This survey was conducted to assess a few common advantages and disadvantages of orthodontic treatment. This treatment is generally done in children who are reaching adulthood because bones can easily be moved.

About 68.60% participants have undergone orthodontic treatment to improve their facial appearance, 14.88% participants have undergone orthodontic treatment to improve chewing efficiency and 16.53% have undergone orthodontic treatment through dentist suggestion (32). So from the study we can observe that 68.80% of the study participants have undergone orthodontic treatment for improving facial smile/ appearance. From the study we can see that there are many advantages from orthodontic treatment other than improving facial appearance. Like people started improving the frequency of brushing per day. 57.02% participants brush twice a day with braces, 16.53% participants brush once a day, 15.70% participants brush 3 - 5 times a day and 10.74% of them brush after every meal with brushes. Almost 85% participants brush twice a day due to braces.

The main common side effects observed in this study are, 90% of the participants had pain due to braces, but only 10% had severe pain. Food getting stuck is also one of the major problems faced by most of the participants. Few people were not able to speak confidently in public due to braces. And few participants have responded that they are facing humiliations from their peers. These types of problems differ from individual to individual, but these psychological barriers can be reduced by going to counselling.

**LIMITATIONS AND FUTURE SCOPE :** The limitation of the present study is the sample size was very small. Further the study has to be continued for large sample size and interpreted further.

**CONCLUSION :**

The orthodontic treatments are the only remedy for correcting misaligned teeth by braces and other orthodontic ailments. Before going to orthodontic treatment one must know its advantages in aesthetic aspects and its disadvantages too such as difficulty in brushing, eating, speaking. But the disadvantage is temporary till the orthodontic procedures get over. Thus the present study concluded that orthodontic treatment is more beneficial for patients who underwent the treatment.

#### AUTHORS CONTRIBUTION :

Kodali Dhruv Kiran: Literature search, survey, data collection, analysis, manuscript writing

Dr. Dinesh Premavathy : Study design, data verification, manuscript drafting, manuscript corrections.

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#### CONFLICT OF INTEREST :

None to declare..

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