

Orthodontics and Smile Correction in Teenagers-A Survey

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Abstract

Orthodontics is a branch of dentistry that deals with diagnosis, prevention and correction of malpositioned teeth and jaws. Correction of malpositioned teeth is done by moving teeth and adjusting the underlying bone with the help of certain devices. Ideal age for undergoing orthodontic treatment is between 8 to 14 years. Orthodontics treatment is required for malocclusion of teeth to establish proper bite and to improve aesthetics. Malocclusion affects the individual self satisfaction, self confidence and causes emotional and mental disturbances. The aim of the study is to evaluate the awareness on orthodontics and smile correction in teenagers. A cross sectional survey was conducted among teenagers to evaluate the awareness about orthodontics and smile correction in teenagers.. The study population in the study are the teenagers with a sample size of 100. The questionnaire consisted of 20 questions and was shared to teenagers using online survey platform. 80% of the participants were aware about orthodontics and 20% were not aware. 41% of the respondents have worn braces before and 59% have not. 27% of the participants felt that their teeth alignment is perfect, 29% did not feel that way and 34% said almost perfect. 75%of the participants feel that orthodontic treatment is necessary for malocclusion of teeth, 7%did not feel as necessary and 18% maybe felt as necessary. From the results obtained, we can include that the moderate level of awareness is seen in teenagers about orthodontic treatment. More awareness is required as treatments are more effective when done at an early age.

Keywords :Orthodontics; smile correction; awareness; teenagers; orthodontic treatment; malocclusion

Introduction

Orthodontics is a branch of dentistry that deals with diagnosis, prevention and correction of malpositioned teeth and jaws. Correction of malpositioned teeth is done by moving teeth and adjusting the underlying bone with the help of certain devices. Ideal age for undergoing orthodontic treatment is between 8 to 14 years. The

appliance used to move the teeth could be removable appliances or fixed appliances. Malocclusion of teeth is not a disease but it is an abnormal arrangement of the teeth and the way the upper and lower teeth fit together ¹. The common etiology of malocclusion are genetic, environmental, and ethnic factors ². Orthodontics treatment is required for malocclusion of teeth to establish proper bite, to correct the sequence of malocclusion, to improve aesthetics, to reduce susceptibility to accidental injury of anterior teeth with severe proclination, to correct abnormal habits and muscle activity, to enhance better cleansing and reduce the susceptibility to caries and periodontal disease. The common diseases of the gums are the gingivitis and periodontitis ³. The periodontium is assessed by methods such as plaque score, bleeding on probing and probing pocket depth ⁴.

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Malocclusion affects the individual self satisfaction, self confidence and causes emotional and mental disturbances⁵. Apart from the serenity of malocclusion, the rate of starting orthodontic treatment depends on other background factors such as age, sex and socio economic status⁶. The children's perception about the need of orthodontic treatment and satisfaction with their alignment of teeth was associated with their mother's perception⁷. Hence parental influence has a more motivating effect than the malocclusion severity on children. Awareness regarding orthodontic procedures are significantly higher in girls than boys. Among girls, awareness was significantly higher in urban areas than girls in rural areas⁸.

Awareness regarding orthodontic treatment in teenagers is important for approaching dental treatment at correct age. Orthodontic treatment undergone at early age is more effective as the bones are more soft and pliable than late teens and adults. It is important to educate the teenagers about the benefits about orthodontics. The benefits also include improving the quality of life, improving one's self confidence and psychological and social changes⁹. The aim of the study is to evaluate the awareness on orthodontics and smile correction in teenagers.

Materials and Methods

Study Design

A cross sectional survey was conducted among teenagers to evaluate the awareness of orthodontics and smile correction in teenagers. The sampling method is simple random sampling method. The sample size of this study is 100. The participants did the survey voluntarily and no incentives were given to them. The study was conducted in the month of may,2020. Ethical approach and informed consent from the participants were obtained.

Survey Instrument

The survey instrument which was a questionnaire was prepared after extensive review of the existing literature. The questionnaire was reviewed and amendments were made to improve clarity of the questions to eliminate ambiguous responses. The questionnaire consisted of 20 questions with both open and closed ended questions.

The questionnaire was shared to teenagers using online survey platform.

Data Analysis

Only completed surveys were taken for analysis and the incompleting surveys were eliminated. The statistical test used is descriptive statistics. All the responses obtained were tabulated and reliability of the data was checked. Frequency table was prepared for each question and analysed using spss data analysis software¹⁰⁻¹⁴.

Results and Discussion

Out of a total of 100 teenagers participated in the survey, 16% belonged to the group of 12 to 14, 36% belonged to the age group of 15 to 16 and 48% which is the majority belonged to the age group of 17 to 19, 59% were females and 41% males. 80% of the participants were aware about orthodontics and 20% were not aware (figure 1). When asked about the conditions that require braces treatment, 41.8% said irregularly arranged teeth, 16.2% said smile problem, 32.5 % said space between teeth and 9.3% were not aware (figure 2). The majority 67% of the participants said that a perfect smile is important for self confidence, 7% said no and 26% chose maybe (figure 3). In the chi square analysis between gender and awareness about orthodontics, the p value obtained was 0.263 and it was statistically not significant (figure 4). In the chi square analysis between gender and awareness about the right age for wearing braces, the p value obtained was 0.634 and it was statistically not significant (figure 5). In the chi square analysis between gender and participant opinion on whether orthodontic treatment is necessary, the p value obtained was 0.664 and it was statistically not significant (figure 6).

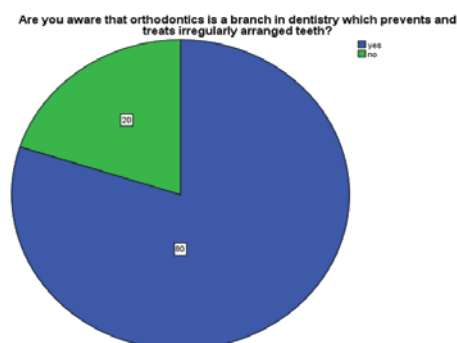


Figure 1: Pie chart showing the awareness of orthodontics among teenagers. 80% of the participants were aware (blue) and 20% were not

aware (green). Majority of teenagers are aware about orthodontics while a small group of participants are not aware.

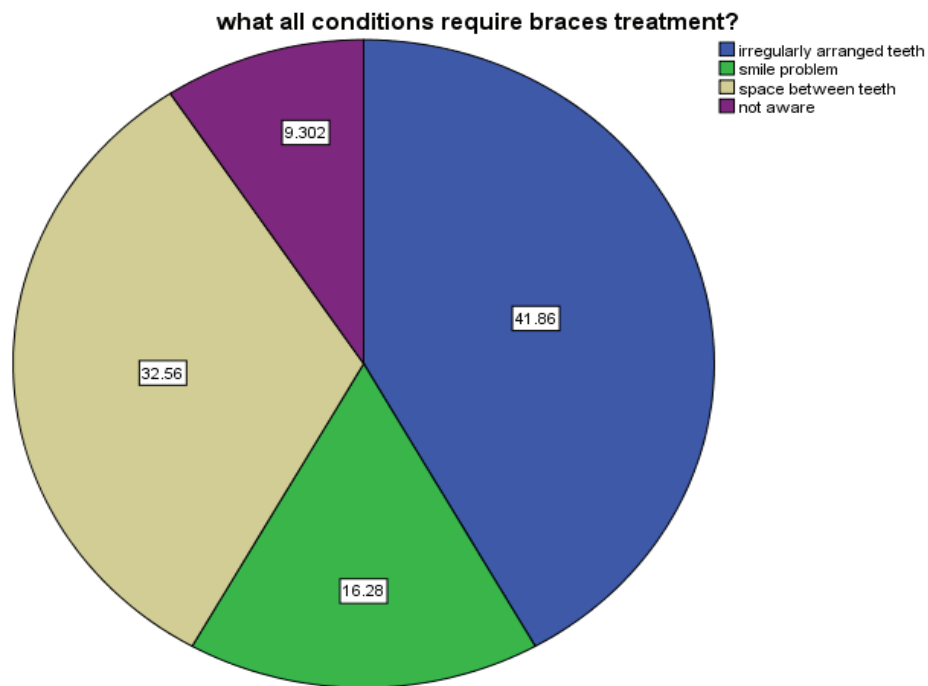


Figure 2: Pie chart showing the response for the conditions that require braces treatment. 41.9% said irregularly arranged teeth (blue), 16.2% said smile problem (green), 32.5% said space between teeth (cream) and 9.3% said that they are not aware (violet).

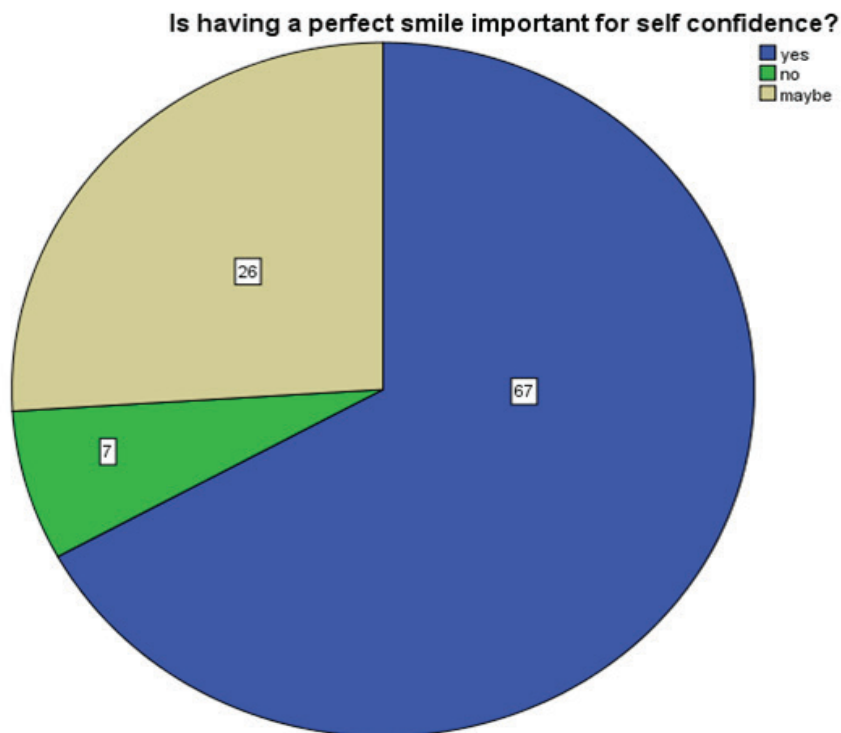


Figure 3: Pie chart showing the responses about whether a perfect smile is important for self confidence. 67% said yes (blue), 7% said no (green) and 26% said maybe (cream).

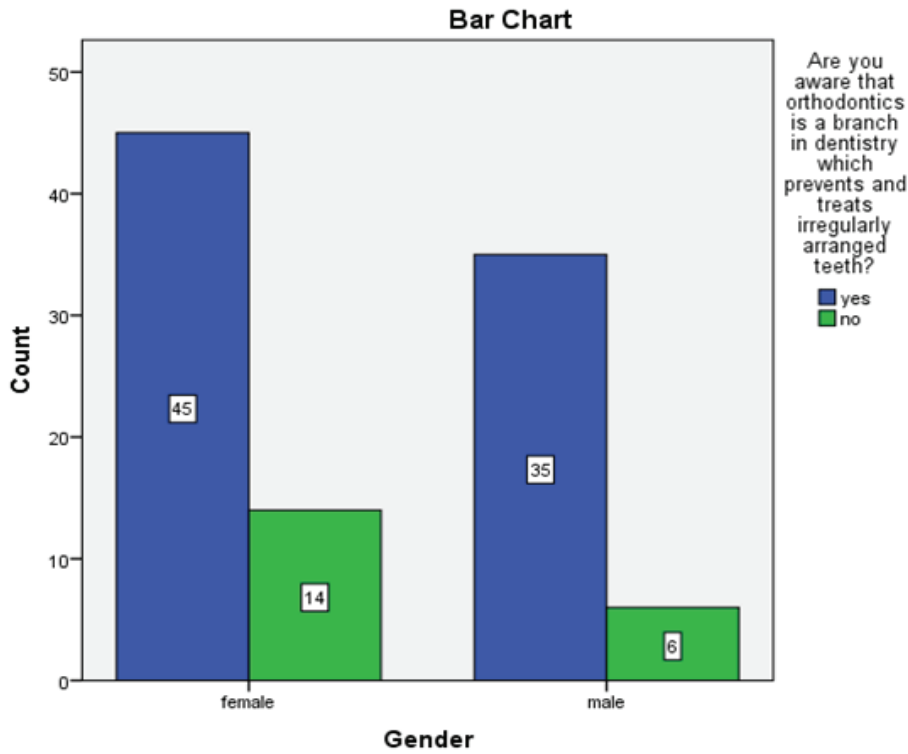


Figure 4: Bar graph represents the association between gender and awareness about orthodontics. X axis represents the gender and Y axis represents awareness about orthodontics. There was no statistically significant difference in the awareness between males and females. Pearson’s Chi square value: 1.251, p value = 0.263(>0.05).

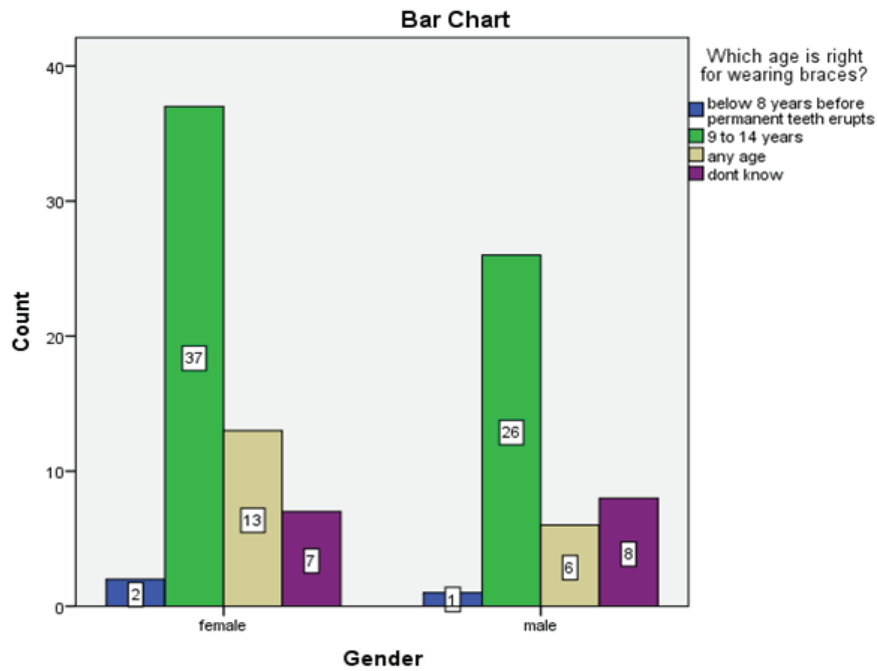


Figure 5: Bar graph represents the association between gender and awareness about the right age for wearing braces. X axis represents the gender and Y axis represents the awareness about the right age for wearing braces. Though males were more aware than females the difference was statistically not significant. Pearson’s chi square value: 1.715, p value: 0.634(>0.05).

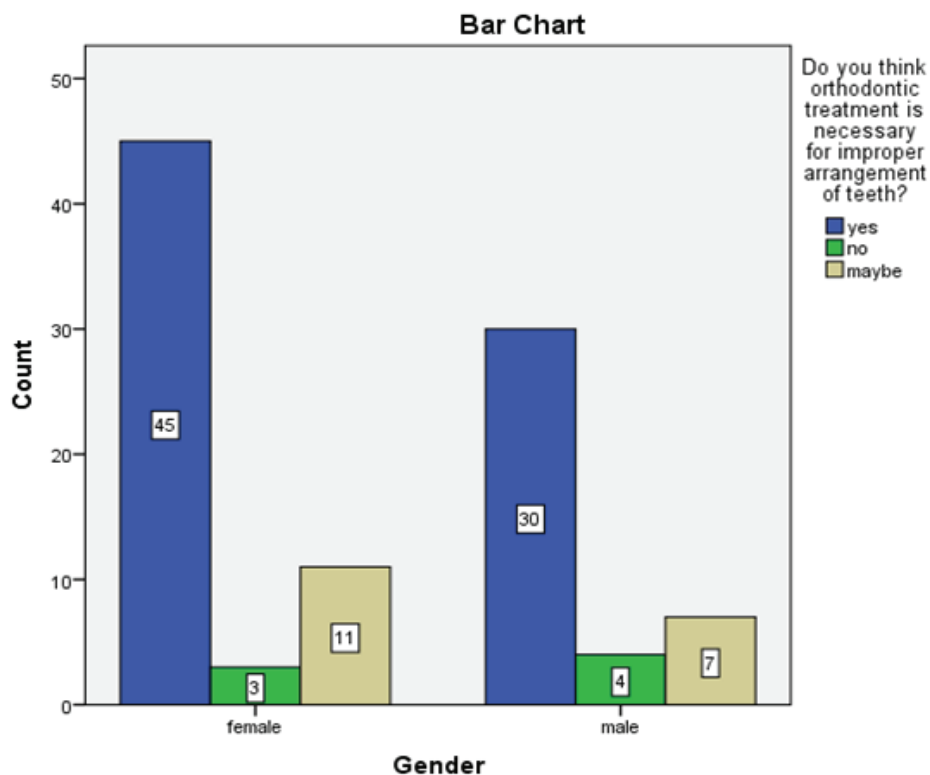


Figure 6: Bar graph represents the association between gender and participant opinion on whether orthodontic treatment is necessary. X axis represents the gender and Y axis represents participant opinion on whether orthodontic treatment is necessary. Females were more aware than males. There was no statistically significant difference in the awareness between males and females. Pearson’s chi square value: 0.818, p value: 0.664(>0.05).

Table 1: Questionnaire regarding the awareness of Orthodontics and the responses in %

S.No	Questions	Results in percentage	
		Aware	Not Aware
1.	Awareness on orthodontics	80%	20%
2.	Right age for Braces?	63%	15%
3.	Do you experienced or aware about changes after orthodontic treatment	53%	47%
4.	orthodontic treatment is necessary for malocclusion of teeth	75%	25%
5.	Is orthodontic treatment painful?	82%	18%
6.	The duration of the orthodontic treatment	68%	32%
7.	Reasons for irregularly arranged teeth	90.4%	9.6%
8.	Improper alignment of teeth increases risk of caries,	70%	23%
9.	The cost of orthodontic treatment is high	68%	22%

Table 1 shows the responses for awareness on orthodontics, 80% of the participants were aware about orthodontics and 20% were not aware. When asked about the right age for braces, 2% said that the right age for braces are below 8 years before the eruption of tooth eruption, majority of them, 63% choose 9 to 14 years as the perfect age for braces, 15% admitted that they are not aware about it. Hence 63% of the participants were aware about the right age for wearing braces. 53% of participants found significant differences after orthodontic treatment, and 34% not aware. 75% of the participants feel that orthodontic treatment is necessary for malocclusion of teeth, 7% did not feel as necessary and 18% may be felt as necessary. Most of the participants viewed orthodontic treatment as necessary. 75% were aware that tooth extraction is required mostly for braces treatment, 25% were not aware. 82% of the participants said that they will undergo orthodontic treatment if required knowing that it's painful, 18% said no. 68% of the participants are aware about the duration of the orthodontic treatment and 32% were not aware. When asked about the reasons for irregularly arranged teeth, 34.6% said genetics, 31.4% said oral habits, 24.3% said other reasons and 9.6% are not aware, this response shows that the majority of 90% are aware of the reasons for misaligned teeth and 9.6% are unaware. 70% of the participants were aware that improper alignment of teeth increases risk of caries, 7% said no and 23% were not aware. 68% of the teenagers participated said that the cost of orthodontic treatment is high, 10% said no which 22% were not aware about the cost.

The present research has origins from the team of investigators where previous studies were done on clinical reports, interventional studies like ¹⁵⁻¹⁷, in vitro studies like ¹⁴, and systemic reviews ¹⁸⁻²². In a survey conducted among parents in Kanchipuram district, 76.5% of the parents of children of age 5-17 years considered orthodontic treatment essential and 55.9% of the parents were anxious for seeking treatment. In our study, 75% of the participants considered orthodontic treatment as necessary. The results are very much similar to our results ²³.

In another survey among preadolescents, 45.1% were aware about orthodontic treatment whereas in our study, 80% were aware. Our survey, the awareness level is significantly higher probably due to the age

difference. Previous study was among preadolescents while our study included teenagers as teenagers tend to be more conscious of their looks than preadolescents ⁸. In a study conducted in Berlin city among school children, 76.9% of the subjects were satisfied with their dental aesthetics. Our study only 37% of the participants felt that their teeth alignment was perfect and 34% felt that it was almost perfect ²⁴.

In a previous study, a survey was conducted among students in which only 2 people had previously received orthodontic treatment and 72.9% had friends or relatives who had received orthodontic treatment. In our study 41% of the participants had previously received orthodontic treatment which is significantly much higher than the previous study. 89% of the participants in our study have a relative or a friend who were braces which is also significantly higher in our study ²⁵. In a previous study, 94.8 % of the participants felt that aligned teeth are important for facial esthetics. In our study, 69% of participants said that proper alignment of teeth is necessary for a perfect smile, which is significantly less than the previous study ²⁶. Some of the limitation in this study include, the smaller samples size of 100. Larger sample size will give more accurate data. Wide variety of population can be included, our study only included teenagers.

Conclusion

From the results obtained, we can conclude that the awareness about orthodontics and smile correction in teenagers is convincing. Most of the teenagers are aware about orthodontic treatment but there is still a group of teenagers who are not aware. More awareness should be created as treatments are more effective when done at an early age. Awareness about orthodontic treatment and procedures will also make the teenagers more cooperating for the dental treatment.

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Ethical Clearance: Not Required

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