

# Awareness Attitude and Perception of Undergraduate Students of Dentistry Towards Orthodontic Treatment –A Cross Sectional Study

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## ABSTRACT

**Introduction:** The relationship between physical appearance and perception of an aesthetic deviation forms a basic criterion for people to seek a solution. In Dentistry, Patient's desire to enhance their facial beauty is one of the most common driving factors to undergo orthodontic treatments. Having a clear understanding of patient's attitudes, need and perceptions towards orthodontic treatment, will help in better treatment planning and delivery. Aim: To evaluate Awareness, attitude, and perception of dental undergraduate students towards orthodontic treatment. Materials and Methods: 316 undergraduate students from four different dental colleges of Tamilnadu participated in a questionnaire survey. The survey was conducted through Google forms. Frequency distribution was generated for all variables. Categorical variables were evaluated using a Chi-square test for statistical difference between the gender. Results: 74.6% of the participants felt that their self-esteem will improve if they have good alignment and 87.6% of people thought orthodontic treatment will make their smile look better. 71.4% of males agreed for treatment when advised, while only 50% of females agreed for the same. 15% of males thought that their teeth affect 100% of facial appearance. Statistically, a significant difference was observed with respect to the preference of metal and ceramic brackets between males and females. Males preferred metal brackets over ceramic brackets while females preferred ceramic over metal brackets. Conclusion: The study showed that dental undergraduates had fair knowledge and a positive attitude towards orthodontic treatment. Gender difference exists in preferences for the type of orthodontic treatment.

**Keywords:** Awareness, attitude, perception, orthodontic treatment, dental students.

## INTRODUCTION

Patients often undergo Orthodontic treatment to enhance their facial appearance. From an orthodontist's perspective, the aim is to improve esthetics, function, and balance. Other benefits could be an improvement in self-esteem and quality of life<sup>1</sup>. Patients are now more conscious about their facial esthetics, and they want the "perfect smile."<sup>2</sup>. Both perceived need and demand vary with social and cultural conditions of different communities, but the most important motivation to undergo orthodontic treatment is usually the desire to look good which improves self-perception of dental appearance and self-esteem.<sup>3-6</sup> When surveyed on their motivations for pursuing orthodontic treatment, considerably more patients cited esthetics over functional considerations<sup>7</sup>. Efficient clinical management of patients seeking orthodontic

treatment requires the patient's motivation and cooperation, which may be affected by their attitude towards orthodontic treatment<sup>8</sup>. Lew stated that practitioners should focus their attention beyond the orthodontic mechanotherapy to the more subjective aspects of patient discomfort and attitude toward orthodontic treatment<sup>9</sup>. knowledge about the attitude of patients

Number of participants	females-239 males 77 Total 316
Average age	22.4 years
Employment status	Students and Interns
Education	Dental undergraduate students
Socio economic status	Middle-Upper middle class

to treatment helps in suitable and efficient treatment planning and delivery. Hence, this study was undertaken to investigate Awareness, attitude, and perception towards orthodontic treatment among undergraduate students of Dentistry.

## MATERIALS AND METHODS

The study design is a cross-sectional study. The survey instrument, a self-administered questionnaire, consisted of 20 closed-ended questions based on previous studies<sup>4,10,11</sup>. The survey instrument was designed as follows: -

the forms were sent to 470 interns and final year students of four different dental colleges of Tamilnadu. The data were collected through Google forms (Google LLC). The duration of the study was 3 months. 316 students responded with completed forms. The response rate was 75%. Incomplete forms were excluded. The study group comprised of 77 males and 239 females. (Table-1).

QUESTIONS	Responses		Responses Females		Responses Males		Chi sq. test	P value
	Overall Yes	No	Yes	No	Yes	No		
1.Apperance Satisfaction	79.8%	20.2%	79%	21%	82%	18%	0.28	0.6
2.Comment from others	61.4%	38.6%	66.3%	33.7%	43%	57%	10.6	.001
3.Need Of Alignment	49.1%	50.9%	50%	50%	43%	57%	0.91	0.32
4.Self Esteem And Good Alignment	74.6%	25.4%	74.4%	25.6%	71.4%	28.6%	0.22	0.63
5.Trouble While Chewing ,Speaking Or Facial Muscle	15.8%	84.2%	15.1 %	84.9%	14.3%	85.7%	0.04	0.84
6.Agreeing For Treatment	56.3%	43.7%	50 %	50%	71.4%	28.6%	9.22	0.002
7.Changes The Smile	87.6%	12.4%	88.4%	11.6%	85.7%	14.3%	0.17	0.67
8.Braces Weaken The Tooth?	45.6%	54.4%	47.68%	52.32%	32%	68%	5.33	0.02
9.Ortho Is Cosmetic?	82.5%	17.5%	14%	86%	21.4%	78.6%	1.69	0.19
10.Agree to Extraction	77.2%	22.8%	74.4%	25.6%	82.1%	17.9%	1.86	0.17
11.Clear aligners-Limited To Children And Teens?	22.8%	77.2%	18.6%	81.4%	28.6%	71.4%	2.74	0.09
12.Better Prognosis -Surgical And Non-Surgical treatment	(Sur)42%	(N.Sur) 58%	52.3%	47.7%	32%	68%	8.21	0.004
13.Aware Of Clear Aligners	87.7%	12.3%	91.8%	8.2%	75%	25%	10.4	0.001
14.Relapse	84.1%	15.9%	86%	14%	75%	25%	3.8	0.049

Statistical significant differences were observed between the gender with respect to questions-2,6,8,12,13,14. (p value-<0.05).sur-surgical, N.sur-non –surgical.

First part: Information on demographic data.

Second part -15 dichotomous questions and 5 trichotomous questions examining the respondent's awareness and perception of orthodontic treatment.

Sample size with 95% confidence and 5% margin of error, was determined as 278 (web-based survey system.com and raosoft.in). Calculating the expected response rate to be 60%,

The data were entered using Microsoft Excel and analyzed with Epi info version 3.5. Frequency distribution was generated for all variables of the nominal data. The statistical analysis was done using SPSS (Statistical Package for Social Sciences) version 20 (IBM, Chicago, IL, USA). The statistical significance was fixed at 0.05.chi- square test was applied to study the difference in gender responses.

## RESULTS

*Overall:* About 79.8% were satisfied with their dental appearance and about 50% of the students felt the need for orthodontic treatment for correction. About 74.6% of the participants felt that their self-esteem will improve if they have good alignment and 87.6 %of people thought that orthodontic treatment will make their smile look better. 84.2 % responded that they had no trouble regarding speaking, chewing or facial muscle pain with their current alignment.56.3 % of people were ready to take up orthodontic treatment when advised. 54.4% of people thought braces will weaken their teeth .77.2% of participants agreed to undergo extraction for orthodontic treatment if necessary.58% of the students thought non-surgical treatment will have a better prognosis. (Table 2)

braces. (Table 3) Almost all the participants (87.7%) were aware of Clear aligners as a method of orthodontic treatment. When asked about the age group for clear aligners, the majority were not clear. 63.2% preferred fixed retainers compared to removable ones. (Table 4) when asked about how much their teeth affect the way the face looks, 11% of participants thought that it affects the looks completely (100%) while 41.5% thought that it affects only 20 % of appearance. (Table 5)

### Gender comparison:

Significant difference was observed between males and females with respect to questions:2,6,8,12,13,14,15,19. (Tables2-5)

Table 2: Responses to 15 dichotomous questions on Awareness, attitude and perception

Table 3 Awareness and preference to different types of brackets

BRACES	METAL			CERAMIC			CLEAR ALIGNERS			Chi sq Test	P value<.05
	Overall	Female	Male	Overall	Female	Male	Overall	Female	Male		
<b>15. Preference</b>	21.9%	17%	36%	23.7%	26%	14%	54.4%	57%	50%	10.82	0.004
<b>16. Economical</b>	79%	79%	79%	9.6%	9.4%	10.5%	11.1%	11.6%	10.5%	0.23	0.88
<b>17. Bone resorption</b>	73.5%	77%	64%	15.9%	13%	25%	10.6%	10%	11%	5.03	0.08

Statistically significant difference was observed with respect to the preference of metal and ceramic brackets between males and females. Males preferred metal brackets over ceramic while females preferred ceramic brackets over metal brackets.

54% preferred clear aligners than metal or ceramic braces. But nearly all (78.9%) agreed that metallic braces be more economical than clear aligners or ceramic braces. In terms of cause for bone resorption,73.5% selected metallic braces,10.6% chose clear aligners and 15.9% chose ceramic

## DISCUSSION

In order to implement the best decision, we have to understand the views of patients as well as important factors influencing their decision making<sup>12</sup>. People who have gathered oral health-related knowledge and have a sense of personal control over

Table 4: Awareness of clear aligners and preference to retainers

18.Can we use clear aligners for all age groups?	overall	Females	Males	Chi sq	P value
<b>Yes</b>	21.9%	19.7%	28.5%	5.43	.06
<b>No</b>	22.8%	20.9%	28.5%		
<b>Not aware</b>	55.2%	59.3%	42.8%		
<b>19. Retainers Removable</b>	36.8%	40.6%	28.6%	3.16	0.07
<b>Fixed</b>	63.2%	59.4%	71.4%		

Majority of the participants were not aware of the age group for clear aligners.Majority of students preferred fixed retainers. Nosignificant difference was found between males and females for both the questions.

their oral health are more likely to adopt self-care practices<sup>13</sup>. Patients' motives for treatment may not necessarily be related to objectively determined treatment need<sup>14</sup>. Hence, the importance of patients' perceptions regarding orthodontic treatment cannot be underestimated as it is the patients who receive treatment and need to gain satisfaction from improved esthetics and functions<sup>15</sup>. We observed that the studies on attitude and perception towards orthodontic treatment were based mainly on practicing dentists and non-orthodontic specialists<sup>16-18</sup>. So we decided to conduct the study on budding dental undergraduates to understand their attitude and perception towards orthodontic treatment. The period correlates with the experience gained mainly from institutions. We observed more female respondents than males unlike studies by Alnusayri MO et al.,<sup>17</sup>, Sastri et al.,<sup>18</sup> and Sahu et al.,<sup>19</sup> we attribute this to the difference in the age group and practice criteria of the participants, ours being below 25 and students while theirs were above 25 and practicing dentists. This contrast in observation leads to questions: Are females not involved in clinical practice after graduation? Or Is there a Gender-based attitude changes with clinical practice, among practitioners?

Females received more comments about the appearance of their teeth from others compared to males. This might show that females are more concerned about other's comments. Surprisingly males were more ready to undergo orthodontic treatment than females when advised, and the difference was statistically significant. This is in contrast to a study by Kim which stated that women had a significantly higher interest in receiving orthodontic treatment than did men<sup>20</sup>. This might show that males are becoming more concerned about esthetics than before. Our participant's response to question on the improvement of self-esteem with good alignment (74.6%)

but dissimilar to studies by Tuominen ML et al.,<sup>21</sup> and Ingervall et al.,<sup>22</sup> which revealed that only 14% and 4% of participants agreeing to the need for treatment, respectively. 77% of our participants were willing to undergo extraction for the orthodontic purpose which is in contrast to the results of the study conducted by Sahu A et al.,<sup>19</sup> in a non-dental college (34.7%). This might be due to the difference in basic knowledge of orthodontics among dental students and non-dental students or the general population. We concur with the results of the study by Essamet M. et al.,<sup>23</sup> that students at medical, dental and health sciences colleges had more information in general about the orthodontic treatment than those in nonmedical or dental colleges. This shows the need to create more awareness among the general population.

Males believed more in non-surgical orthodontic treatment to have a better prognosis while females inclined towards surgical treatments. This might show that females are more open to surgical treatment options. 25% of men were not aware of clear aligners but almost all females were aware of it. This indicates that females tend to get more information on aesthetic appliances and are more concerned about esthetic appearance while they undergo treatment. This observation also correlates with that of the response to the preference for bracket type. Men preferred metal brackets over ceramic while females preferred ceramic over metal braces. The difference was statistically significant. This might assist while asking for the preference for bracket type for different gender. The majority were not aware if clear aligners can be used for all age groups, but nearly all (78.9%) agreed that metallic braces be more economical than clear aligners or ceramic braces. This shows that they have limited knowledge of clear aligners mechanism while being aware of clear aligners as a treatment modality. This could be because of the technology being relatively new. 15% of men thought that

20. Dental appearance affecting overall looks	Overall	females	Males	Chi sq. Test	P value
20%	41.5%	40%	43%		
40%	9.5%	9%	10%		
60%	14.5%	22%	7%	8.8	0.002
80%	23.5%	21%	25%		
100%	11%	8%	15%	10.3	0.03

was similar to the study by Adegbite KO (76.5%)<sup>11</sup>. But when asked about the effect of their teeth on mastication, the response was different with only 15.8% of our participants agreeing against 68.2% of Adegbite's participants<sup>11</sup>.

49% of our participants agreed about their need for orthodontic alignment similar to a study by Jayasudha et al.,<sup>4</sup>

their teeth affected 100% of their facial appearance while only 8% of females thought similarly. A significant difference was found between males and females in the 60% and 100% range of the question. The majority of students preferred fixed retainers than removable ones. Out of 20 questions, responses to 8 questions showed a statistical difference between males and females. The difference in attitude and Preferences towards the

type of orthodontic treatment between males and females seems to be important for treatment planning.

**The drawback of the study:** A comparative study between dental students, dental practitioners, and the general population could have provided more insight into the impact of awareness and perception for choosing to undergo orthodontic treatment.

## CONCLUSION:

*The study showed that dental undergraduates had fair knowledge and a positive attitude towards orthodontic treatment.*

*Gender difference exists in preferences for the type of orthodontic treatment.*

## References:

- Johal A, Alyaqoobi I, Patel R, Cox S. The impact of orthodontic treatment on quality of life and self-esteem in adult patients. *Eur J Orthod.* 2015;37(3):233-237. doi:10.1093/ejo/cju047.
- Patel D, Mehta F, Mehta N. Aesthetic orthodontics: An overview. *Orthod J Nepal.* 2015; 4:38-43
- Mandeep KB, Nirola A. Malocclusion pattern in orthodontic patients. *Indian J Dent Sci* 2012; 4:20-2.
- Baswaraaj Jayasudha B, Kumarswamy KM, Padmini MN, Chandralekha B. Oral self-perception of esthetics among dental students. *Arch Oral Sci Res.* 2013;3(2):85-94
- Breece GL, Nieberg LG. Motivations for adult orthodontic treatment. *J Clin Orthod.* 1986; 20:166-71.
- Mugonzibwa EA, Kuijpers-Jagtman AM, Van't Hof MA, Kikwilu EN. Perceptions of dental attractiveness and orthodontic treatment need among Tanzanian Children *Am J Orthod Dentofacial Orthop* 2004; 125:426-33
- Singh P. Adult orthodontic patients in primary care and their motivation for seeking treatment. *Orthod Update.* 2016.
- Kenealy P, Frude N, Shaw W. An evaluation of the psychological and social effects of malocclusion: Some implications for dental policy making. *Soc Sci Med* 1989; 28:583-91.
- Lew KK. Attitudes and perceptions of adults towards orthodontic treatment in an Asian community. *Community Dent Oral Epidemiol.* 1993;21(1):31-35. doi:10.1111/j.1600-0528.1993.tb00715.x
- Shekar S, Chandrashekar B R, Bhagyalakshmi A, Avinash B S, Girish M S. Knowledge, attitude, and practices related to orthodontic treatment among college students in rural and urban areas of Mysore, India: A cross-sectional questionnaire study. *Indian J Oral Health Res* 2017; 3:9-14
- Adegbite KO, Ogunbanjo BO, Ajisafe OA, Adeniyi AA. Knowledge of orthodontics as a dental specialty: A preliminary survey among LASUCOM students. *Ann Med Health Sci Res* 2012; 2:14-8.
- Shared decision making and patient involvement in choosing home therapies. *Johansson L J Ren Care.* 2013 Jan; 39 Suppl 1():9-15.
- Almas K, Al Shwaimi E, Al shamrani H, Skaug N (2003). The oral hygiene habits among intermediate and secondary schools students in Riyadh, Saudi Arabia. *Pak. Oral Dent. J.* 23:29-34.
- Eser Tufekci; Arousha Jahangiri Steven J. Lindauer Perception of Profile among Laypeople, Dental Students and Orthodontic Patients *Angle Orthod* 1 November 2008;78 (6): 983-987
- Shue-Te Yeh M, koochek AR,&Vlaskalic V2000), Boyd R, Richmond S. The relationship of 2 professional occlusal indexes with patients' perceptions of aesthetics, function, speech, and orthodontic treatment need. *Am J Orthod Dentofacial Orthop* .118, 421-8. <https://doi.org/10.1067/mod.2000.107008> 14
- Acharya, Asal & Mishra, Praveen & Shrestha, Rabindra & Shah, Pooja. (2019). Orthodontic Treatment Knowledge among General Dentists and Non-orthodontic Specialists. *Orthodontic Journal of Nepal.* 9. 10.3126/ojn.v9i1.25689. *Orthodontic Journal of Nepal* 9(1) · September 2019
- Alnusayri MO, Kuraym Alenazi KK, Patil SR, Aileni KR, Rao KA. Knowledge and attitude regarding principles and practices of orthodontic treatment among general dental practitioners and non-orthodontic specialists of Saudi Arabia: A preliminary study. *J Res Med Dent Sci.* 2017; 5:59-62.
- Sastri MR, Tanpure VR, Palagi FB, Shinde SK, Ladhe K, Polepalle T. Study of the knowledge and attitude about principles and practices of orthodontic treatment among general dental practitioners and non-orthodontic specialties. *J Int Oral Health.* 2015; 7:44-8.
- Sahu A, Sawai DS, Tanwar AS, Jha A, Sinha G, Kumar S. Awareness, perception and practice regarding orthodontic practice and principles among non orthodontic specialists- An exploratory research. *J Family Med Prim Care* 2020;9:585-9
- Kim Y. Study on the perception of orthodontic treatment according to age: A questionnaire survey. *Korean J Orthod.* 2017; 47:215-21
- Tuominen ML, Tuominen RJ. Factors associated with subjective need for orthodontic treatment among Finnish university applicants. *Acta Odontol Scand.* 1994;52(2):106-110. doi:10.3109/00016359409029063
- Bengt Ingervall & Björn Hedegård. Awareness of malocclusion and desire of orthodontic treatment in 18-year old Swedish men, *Acta Odontologica Scandinavica*, 1974 32:2, 93-101, DOI: 10.3109/00016357409002538
- Essamet M.1 and Darout I. A. Awareness and behavior related to orthodontic treatment among Jazan University students, Kingdom of Saudi Arabia. *J. Dent. Oral Hyg* March 2016 Vol. 8(3), pp. 12-17.