

ORIGINAL RESEARCH ARTICLE

SELF-PERCEPTION OF DENTAL APPEARANCE AND AWARENESS TOWARDS ORTHODONTIC TREATMENT AMONG UNDERGRADUATE STUDENTS AND INTERNS OF DENTISTRY

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ABSTRACT

Background: Patient's perception of own facial appearance is also an important contributing factor for treatment planning. Also, knowledge and attitude of patients to orthodontic treatment is becoming more important in orthodontics these days. The study aimed to assess self-perception, awareness and attitude towards orthodontic treatment among dental students and interns.

Methods: Data was collected through cross-sectional survey conducted among the dental students and dental interns in KIST Medical College through online google form. Study duration was from August 2021 - October 2021. The data was entered in SPSS software 20. Frequency distribution was generated for all variables. Categorical variables were evaluated using Chi-square test.

Results: About 96.7% of the participants believe that orthodontic treatment will improve facial appearance. 61.5% believe that orthodontic treatment is a lengthy and painful procedure. 44.5% does not think orthodontic treatment weakens the teeth. 50% of female believe that orthodontic treatment will give the promising result. Statistically significant difference was obtained with respect to preference of different types of braces among students of different years. 54.9% of the participants are satisfied with the arrangements of their teeth, 20.9% had avoid smiling and 22.5% felt lack of confidence because of the appearance of their teeth. Almost half of the participants (50.5%) think they should have orthodontic treatment and 76.2% readily agree to orthodontic treatment if suggested by the dentist.

Conclusions: Dental students and interns had a good knowledge about orthodontic treatment and positive attitude towards it. Gender difference exists regarding the awareness of orthodontic treatment. Statistically significant difference was found in preference of different types of braces in students of different years and interns.

INTRODUCTION

Patient generally undergo orthodontic treatment for enhancing their facial and dental appearance. The main factor that influences the decision for treatment are esthetic improvement and psychological aspect.¹

Patients are now more conscious about their facial esthetics and they want a perfect smile. It is always difficult to measure what exactly dental esthetics means as there is variability in individual judgement regarding esthetics.¹⁻³ The decision to provide and accept orthodontic treatment are not only defined by orthodontist but patient perception of own facial appearance, dental esthetics, self-esteem, self-concept is more important contributing factor. In addition to this, knowledge about the attitude of patients to orthodontic treatment is becoming more important in orthodontics these days.^{4,5}

Gender, Age, self-esteem, education and socioeconomic condition may affect the self-perception of dental appearance and attitude towards orthodontic treatment.⁶ Lew stated that Orthodontist should focus their attention beyond orthodontic

mechanotherapy to more subjective aspect of patients discomfort and attitude towards orthodontic treatment.⁷

Unpleasant facial and dental appearance due to malalignment of teeth/ jaws may affect the quality of life including function, appearance, self-confidence and may cause the patient to develop a low self-esteem. Patient may feel embarrassed in the social environment and professional achievement in the society may be hindered. Orthodontic treatment helps overcome these conditions by bringing improvement in facial and dental esthetics. So, knowledge and awareness of patient towards orthodontic treatment is important for orthodontist. The aim of the present study was to assess self-perception of dental appearance and to determine awareness and attitude towards orthodontic treatment among dental students and interns.

METHODS

This was a cross-sectional study. A questionnaire was prepared to assess the self-perception of dental appearance and assess the knowledge, awareness and attitude toward orthodontic

treatment. Questionnaire was circulated among dental students of different academic year and interns in KIST MCTH using online google form. This study was conducted after getting an ethical approval from institutional review committee (KIST-IRC Ref. No. 2078/79/15). An electronic informed consent form was signed by each participant for this study. Study duration was from August 2021 to October 2021.

The survey instrument, a self-administrated questionnaire consisted of 20 closed-ended questions based on previous study.^{9,11,12} The reliability and validity were checked by pretesting of questionnaire by pool subject experts. Students and interns with the history of previous orthodontic treatment and currently wearing braces were excluded from this study. Online google form was sent to 210 students and interns (Census Sampling method; sample size: 210) out of which 182 students responded with the completed form. The response

rate was 86.66%. The results tabulated in Microsoft Excel/ spreadsheet by google was exported to SPSS 20 software and statistical analysis was carried out. Categorical variables were evaluated using a chi-square test for statistical difference between the gender. Statistical significance was set at $P < 0.05$.

RESULTS

Most of the of the participants (96.7%) believe that orthodontic treatment will improve the facial appearance. 61.5% believe that orthodontic treatment is a lengthy and painful procedure. 44.5% does not think orthodontic treatment weakens the teeth and 35.7% are not sure about this. 68% are aware of clear aligner. 50% of female believe that orthodontic treatment will give the promising result. Statistically significant difference was observed between males and females with respect to questions no. 2,7,9,10 (p value < 0.05).

Table 1: Awareness towards Orthodontic Treatment

Questions	Overall Response (%)			Response Male (%)			Response Female (%)			p value
	Yes	No	Maybe	Yes	No	Maybe	Yes	No	Maybe	
1-Do you think orthodontic treatment will improve the facial appearance?	96.7	0	3.3	100	0	0	95.91	0	4.1	0.216
2-Do you think orthodontic treatment is very lengthy and painful procedure?	61.5	15.4	23.1	47.2	38.9	13.9	65.1	9.6	25.3	0.000
3-Do you think orthodontic treatment will change the smile?	96.7	1.1	2.2	100%	0	0	95.9	1.4	2.7	0.465
4-Do you think orthodontic treatment will weakens the teeth?	19.8	44.5	35.7	13.9	58.3	27.8	21.2	41.1	37.7	0.173
5-Are you aware that tooth removal may be necessary in orthodontic treatment?	83	4.9	12.1	75	8.3	16.7	84.9	4.1	11	0.339
6-Are you aware of clear Aligner?	68.1	30.2	1.6	72.2	27.8	0	67.1	30.8	2.1	0.625
7-Do you think tooth may return back to original position (relapse) after completion of orthodontic treatment?	61	6.6	32.4	72.2	13.9	13.9	58.2	4.8	3.7	0.010
8-Do you think orthodontic treatment is the cosmetic treatment?	52.2	22.5	25.3	50	19.4	30.6	52.7	23.3	24	0.696
9-Do you think orthodontic treatment can only be done in the growing children?	6.6	83.5	9.9	16.7	77.8	5.6	4.1	84.9	11	0.019
10-Do you think orthodontic treatment will give you a promising result?	54.4	8.8	36.8	72.2	8.3	19.4	50	8.9	41.1	0.043

Majority of participants (53.3%) prefer clear aligners over other types of braces. After clear aligners, second preference is ceramic braces for males and metallic braces for female (Table 2).

Table 2: Overall response of preference of different types of braces

Braces Types	Overall %	Male	Female	p-value
Metallic	18.7%	16.7%	19.2%	0.191
Ceramic	14.3%	25.0%	11.6%	
Clear Aligner	53.3%	50.0%	54.1%	
Don't Know	13.7%	8.3%	15.1%	
Total	100.00%	100.0%	100.0%	

Inters are more aware of different types of braces. Preference to ceramic braces is lowest among the interns. Preference of both metallic and ceramic braces is same (21.1%) among 1st

year students. Significant difference in preference of different types of braces was found among students of different years and interns (Table 3).

Table 3: Awareness and preference of different types of Braces among students of different year

	1 st year	2 nd year	3 rd year	4 th year	In-terns	p value
Metallic	21.1%	17.6%	15.0%	16.4%	26.5%	0.002
Ceramic	21.1%	8.8%	15.0%	18.2%	8.8%	
Clear Aligner	42.1%	50.0%	37.5%	65.5%	61.8%	
Don't Know	15.8%	23.5%	32.5%	0.0%	2.9%	

About 54.9% of the participants are satisfied with the arrangements of their teeth whereas 31.9% are unsatisfied

with their smile esthetics. About 20.9% had avoid smiling because of the appearance of their teeth and 22.5% felt lack of confidence because of the appearance of their teeth (Table 4).

About 18.1% would like to change the colors and 12.6% would like to change size. Majority of participants (43.3%) would like

to change the arrangement of their teeth and 25.8% don't want to change anything. Most of the female would like to change the size of their teeth (15.1%) compared to males. Both males and females are more concerned with the arrangement of their teeth (Table 5).

Table 4: Self-perception and satisfaction about their dental-esthetics

Questions	Overall Response (in %)		Male response (in %)		Female response (in %)		P value
	Yes	No	Yes	No	Yes	No	
1. Are you satisfied with the arrangement of your teeth?	54.9	45.1	47.2	52.8	56.8	43.2	0.296
2. Are you satisfied with your smile esthetics?	68.1	31.9	75	25	66.4	33.6	0.323
3. Have you found that other people has commented on the appearance of your teeth?	49.5	50.5	44.4	55.6	50.7	49.3	0.502
4. Do you try to avoid smiling because of the appearance of your teeth?	20.9	79.1	22.2	77.8	20.5	79.5	0.825
5. Do you ever cover your mouth because of the appearance of your teeth?	17	83	16.7	83.3	17.1	82.9	0.948
6. Have you felt lack of confidence and self-esteem because of the appearance of your teeth?	22.5	77.5	30.6	69.4	20.5	79.5	0.198

Table 5: Gender difference regarding the thing they would like to change

	Male	Female	Total	p-value
Color	19.4%	17.8%	18.1%	0.258
Size	2.8%	15.1%	12.6%	
Arrangement	47.2%	42.5%	43.4%	
Don't want to change	30.6%	24.7%	25.8%	
Total	100.0%	100.0%	100.0%	

Almost half of the participants (50.5%) think they should have orthodontic treatment. Most of them (76.2%) readily agree to orthodontic treatment if suggested by the dentist (Table 6).

Compared to 1st years, interns are more readily agree for treatment if suggested by dentist (Table 7).

Table 6: Attitude towards orthodontic treatment- Gender difference

Questions	Response overall		Response Female		Response Male		P value
	Yes	No	Yes	No	Yes	No	
1. Do you think you should have orthodontic treatment	50.5	49.5	50	50	52.8	47.2	0.765
2. Do you readily agree to orthodontic treatment if dentist suggested it?	76.2	23.8	73.3	26.7	88.6	11.4	0.56

Table 7: Attitude of students of different years towards orthodontic treatment

Questions	Response	1 st year	2 nd year	3 rd year	4 th year	Interns	p value
1. Do you think you should have orthodontic treatment	yes	68.4%	44.1%	50.0%	41.8%	61.8%	1.72
	No	31.6%	55.9%	50.0%	58.2%	38.2%	
2. Do you readily agree to orthodontic treatment if dentist suggested it?	Yes	68.4%	78.8%	75.0%	74.5%	82.4%	0.812
	No	31.6%	21.2%	25.0%	25.5%	17.6%	

About 35.2% are not satisfied with the arrangement of their teeth and has positive attitude towards orthodontic treatment (Table 8).

About 48.6% are satisfied with their smile esthetics but ready to undergo orthodontic treatment if recommended by the dentist (Table 9).

Table 8: Association between self-perceived satisfaction with the arrangement of teeth and attitude towards orthodontic treatment

Satisfied with the arrangement of teeth	Willingness to undergo orthodontic treatment		
	Yes	No	Total
Yes	15.4%	39.6%	54.9%
No	35.2%	9.9%	45.1%
Total	50.5%	49.5%	100%

Table 9: Association between self-perceived smile esthetics and willingness to undergo orthodontic treatment if recommended by a dentist

Satisfied with the smile esthetics	Agree to orthodontic treatment if recommended by dentist		
	Yes	No	Total
Yes	48.6%	19.3%	68%
No	27.6%	4.4%	32%
Total	76.2%	23.8%	100%

DISCUSSION

Patient may be aware of the malocclusion but they may not identify the need for treatment to the same level as the professionals. Also, the evaluation of the facial esthetics from the professionals may not coincide with the perception and expectations of the patients and lay persons. Some people are contented even with the severe malocclusion others can be more concerned about the minor irregularities. So, patients' self-perception is of significant important in delivering the treatment demand and cooperation.⁵ Moreover, evaluating a patients dental esthetic perception is crucial for dentists to understand their needs and manage their expectations regarding the treatment outcome.⁸

Most of the studies on attitude and perception towards orthodontic treatment were based among practicing dentist and orthodontist.⁹⁻¹¹ So, we decided to conduct the study on budding dental undergraduates and interns to understand their awareness, attitude and perception towards orthodontic treatment.

In this study we observed that dental students and interns are much aware towards orthodontic treatment. About 96.7% think orthodontic treatment will improve the facial appearance and change the smile. Statistically significant difference was found between males and females regarding the awareness towards orthodontic treatment (Table1). About 68.1% are aware of clear aligners.

About 54.9% of participants were satisfied with the arrangement of their teeth with no statistically significant difference with respect to gender. Females are more satisfied with their smile esthetics than male but lack of confidence and self-esteem because of the appearance of the teeth is found more in males.

Most of the female has found that other people have commented on the appearance of their teeth and they use to cover their mouth because of this. This may be because female

pay more attention to their dental appearance than male and are more critical when assessing their smile esthetics. Similar result has been observed in another study by Aminah et. Al where female subjects frequently covered their mouth with their hands and preferred to be photographed from the good side of the face.¹²

In our study most of the males and females (43.4%) would like to change the arrangement of their teeth. Only 12.6% would like to change the shape of their teeth. This is in contrary with the study done in nondental undergraduate students where most of the subject would like to change the color of their teeth.¹³ da Silva et. al. in their study also found that most Brazilian dental students were satisfied with the shape and alignment of their teeth, this finding was attributed to the fact that most students had undergone orthodontic treatment before their enrollment in dental school.¹³

Almost half of the subject (50.5%) think they should have orthodontic treatment but 76.2% readily agree for orthodontic treatment if suggested by the dentist. Though females are more concerned about others comment on their teeth, males were more ready to undergo orthodontic treatment than female when advised. This fining is similar to the study done by Sangeetha et al.¹⁴ This might show that males are becoming more concerned with esthetics these days. But this finding is in contrast to the study done by Kim where women had significantly higher interest in receiving orthodontic treatment than males.¹⁵ About 82.4% of interns readily agree to orthodontic treatment if suggested by dentist. It shows that level of academic and clinical experience directly correlated with the students' knowledge and treatment options. It is similar to the previous study where treatment knowledge was related to the higher educational level and more clinical experience.¹⁶

When asked about how many students/interns were unsatisfied with the arrangement of their teeth and had a positive attitude towards orthodontic treatment 45.1% were not satisfied with the arrangement of their teeth out of which 35.2% were willing

and 9.9% were not willing to undergo orthodontic treatment. There is a high degree of negative correlation between satisfaction with the arrangement of teeth and attitude towards orthodontic treatment. About 48.6% were satisfied with their smile esthetics but ready to undergo orthodontic treatment if recommended by the dentist. Also, there is a high degree of negative correlation between satisfaction with the smile esthetics and willingness to undergo orthodontic treatment if recommended by the dentist.

The limitation of this study is that the dental students may not represent the general population of the society. A comparative study between dental students, interns, dental practitioners and general population could have provided more insight.

CONCLUSION

This questionnaire study evaluated the awareness towards orthodontic treatment, self-perception of dental appearance and attitude towards orthodontic treatment in a group of dental

students and interns. Dental students and interns had a good knowledge about orthodontic treatment and positive attitude towards it. Gender difference exists regarding the awareness of orthodontic treatment. Statistically significant difference was found in preference of different types of braces in students of different years and interns. Arrangement of teeth is the main thing they would like to change. Compared to 1st years, Interns has more positive attitude and readily agree for orthodontic treatment if suggested by dentist

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