

## Original Article

# Psychosocial Impact of Dental Aesthetics – A Survey Among Young Female College Students in Chennai City

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### Abstract

**Background** Facial aesthetics affects how people are perceived by society and how they perceive themselves. Aesthetics includes the appearance of an individual and the dentition plays an important role in facial appearance. The indices currently in use to assess malocclusion lack the assessment of psychosocial component. The present study has been undertaken to determine the psychological as well as social impact of dental aesthetics and to investigate self-perceived need for orthodontic treatment.

**Materials and Methods** A cross sectional descriptive study employing cluster random sampling, N = 274, study subjects aged 18 to 23 years participated in the present study. Psychosocial impact of dental aesthetics was assessed using Psychosocial Impact of Dental Aesthetics Questionnaire (PIDAQ), esthetic self-perception was assessed using Index of Orthodontic Treatment Need - Aesthetic Component (IOTN – AC Index)

**Results** A significant positive correlation was observed between PIDAQ and IOTN- AC score. Study subjects with higher IOTN AC scores had more psychosocial impact as measures with PIDAQ questionnaire.

**Conclusion** The results of the present study showed that, with the increase in severity of malocclusion there is a decrease in 'Dental self-confidence', higher 'Social and Psychological impact' and more 'Aesthetic concern'. The index IOTN AC can be used as a tool for assessing the malocclusion on large surveys and PIDAQ questionnaire can be used as an adjunct to assess the psychosocial impact of dental aesthetics. Self-perceived need for orthodontic treatment had shown that people with higher PIDAQ score and IOTN AC score opted to undergo orthodontic treatment.

**Key Words:** PIDAQ, IOTN AC, Young female and College students

### Introduction

The concepts of body shape and body image concern not only how and in what way we perceive our body, but also how and in what way others perceive us.<sup>1</sup> The body representation is shaped by perceptions, emotions and physical sensations; it can change according to mood, physical experience, and environment<sup>2</sup>. Many factors can play into personal attractiveness — the way of dressing, the way a person acts, the way a person carry himself or herself, even things that are hard or impossible to change, like social status, wealth, race, and body size and shape.

Although we are admonished "don't judge a book by its cover", we repeatedly defy that warning as we go about our daily lives responding to people on the basis of their facial appearance. The face is the most readily apparent body feature and facial appearance is the most important physical characteristic in the development of self-image and self-esteem, as positive social interactions have been shown to result in better interpersonal relationships and more self-confidence.<sup>2,3</sup>

Facial aesthetics affects how people are perceived by society and how they perceive themselves. Aesthetics includes the appearance of an individual and the dentition plays an important role in facial appearance.<sup>4</sup> Aesthetics is the key element in social interaction. The development of aesthetic awareness begins very early in childhood with the attitude that "what is beautiful is good".<sup>5</sup>

Being a part of the social network, there is an inherent need for one to feel accepted. Any significant deviations from the norm may result in feelings of insecurity related to appearance, inhibition in social contacts and comparison of self with others considered to be 'superior', all of which may negatively affect the quality of life of the individual.<sup>6-8</sup>

In the past, the need for orthodontic treatment was assessed from a strictly professional perspective, taking on a more paternalistic approach from the caregiver. However, several studies have stated that self-perceived dental appearance is also important in the decision to seek orthodontic attention.<sup>9,10</sup>

The Aesthetic Component (AC) of the IOTN has frequently been used to assess treatment need on aesthetic grounds assessed by dentists or patients.<sup>11</sup> However, since it is an acknowledged fact that psychosocial concerns due to undesirable dental aesthetics may Group IOTN AC Score N Percentage

Group I	1	135	49.3%
Group II	2	48	17.5%
Group III	3	52	19%
Group IV	≥ 4	39	14.2%

be as severe, or even more severe, than the biological problems, the indices at present in use have been complained as deficient in psychosocial factor.<sup>12</sup> In this perspective, differences in perceived need and attitude to dental appearance and orthodontic care between individual are rarely documented.<sup>13</sup>

The indices currently in use to assess malocclusion lack the assessment of psychosocial component. The Psychosocial Impact of Dental Aesthetics Questionnaire (PIDAQ) is a scale which measures impact of dental aesthetics on the person's oral health-related quality of life.<sup>14</sup>

The present study has been undertaken to determine the psychological as well as social impact of dental aesthetics using the 'Psychosocial Impact of Dental Aesthetics Questionnaire' (PIDAQ) and self-rated Aesthetic Component (AC) of the Index of Orthodontic Treatment Need (IOTN) and to investigate self-perceived need for orthodontic treatment.

## Materials and Methods

A cross-sectional descriptive study employing cluster random sampling was conducted among the students of women's colleges in Chennai. The sample size for the present study was estimated to be N = 237 study subjects, based on the mean dental self-confidence score in the study conducted by Settineri Salvatore et al (2013)<sup>1</sup>. Young female students aged between 18 to 23 years of age with good general health and who are willing to participate in the study were included. Students with history of orthodontic treatment, students who are under orthodontic treatment, students with developmental facial abnormalities and who are not willing to participate in the study were excluded.

Prior to the start of the study, approval has been obtained from the college authorities and written informed consent has been obtained from the study participants. The survey instrument used in the present study is a self-administered questionnaire consists of demographic data of the students followed by assessment of 'Psychosocial Impact of Dental Aesthetics' using the standardised and validated questionnaire developed by Klageset al(2006).<sup>12</sup> The questionnaire consists of 23 questions under the following domains – Dental Self-confidence, Social Impact, Psychological Impact and Aesthetic Concern. The students were

## Results

N = 274, young female students aged between 18 to 23 years participated in the present study, the mean age of the study subjects is 19.78 ± 1.41 years. Table 1: depicts the distribution of study subjects according to the self-rated dental appearance based on the IOTN – AC score. Among the 274 study subjects Group I [IOTN AC score – 1] N = 135 (49.3%), Group II [IOTN AC score – 2] N = 48 (17.5%), Group III [IOTN AC score – 3] N = 52 (19%) and Group IV [IOTN AC score – ≥ 4] N = 39 (14.2%).

Group	IOTN AC Score	N	Percentage
Group I	1	135	49.3%
Group II	2	48	17.5%
Group III	3	52	19%
Group IV	≥ 4	39	14.2%

**Table 1:** Distribution of study subjects according to self-rated dental appearance

Table 2: depicts the comparison of responses to PIDAQ across groups classified on IOTN AC score. The mean 'PIDAQ' score was highest for Group IV study subjects (30.41±15.54) and lowest for the Group I study subjects (24.40±8.46). 'Dental Self –confidence' was highest for the Group I study subjects (11.22±5.11) and with the increase in severity of IOTN AC sore there is a decrease in the mean dental self-confidence score of the study subjects.

'Social Impact' of dental aesthetics is highest among Group IV study subjects (9.54±8.42) and it is lowest for the Group I study subjects (5.01±4.98). The mean score for 'Psychological Impact' is higher for Group IV study subjects (8.90±5.35) and least for the Group I study subjects (5.74±4.41). 'Aesthetic Concern' regarding their dentition was found to be higher in Group IV study subjects (4.36±3.42) and was lowest among Group I study subjects (2.43±2.56).

One way ANOVA test showed that there is a highly significant difference (p<0.01) in the mean PIDAQ score and individual domain scores of PIDAQ across the groups classified on their esthetic self-perception [IOTN AC sore].

Groups*	Dental Self Confidence* (Mean±SD)	Social Impact* (Mean±SD)	Psychological Impact* (Mean±SD)	Aesthetic Concern* (Mean±SD)	PIDAQ* (Mean±SD)
Group I	11.22±5.11	5.01±4.98	5.74±4.41	2.43±2.56	24.40±8.46
Group II	8.87±4.68	6.54±5.67	7.19±4.62	3.15±2.99	25.75±10.38
Group III	7.40±3.53	7.42±6.15	6.98±3.48	3.52±2.63	25.33±10.90
Group IV	7.62±4.34	9.54±8.42	8.90±5.35	4.36±3.42	30.41±15.54
f-value	12.014	6.672	5.546	5.606	3.313
p-value	0.00	0.00	0.001	0.001	0.021

**Table 2:** Comparison of Mean Domain Scores and PIDAQ score across Groups

\*One-Way ANOVA (p<0.01 – Highly Significant)

Table 3 depicts the comparison of study subjects response based on the IOTN AC groups. 263 (95.9%) of the study subjects accepted that healthy and well aligned teeth are important for their appearance, 146 (53.3%) study subjects liked to change the following parameters with respect to their teeth, 33 (23%) wants to change the colour of their teeth, 38 (26%) wanted to alter the size of their teeth, 80 (55%) study subjects

were interested in re-arrangement of their teeth and 9 (6%) study subjects required other forms of correction, the difference was found to be statistically significant ( $p < 0.05$ ). 100 (36.5%) study subjects perceived that they should have orthodontic treatment; the most common wish to undergo orthodontic treatment was to arrange the teeth in order.

Question	Response	IOTN - AC				Total n (%)	p-value
		Group - I	Group - II	Group - III	Group - IV		
Do you think healthy and well aligned teeth are important for your appearance?	Yes	131 (97%)	46 (95.8%)	49 (94.2%)	37 (94.9%)	263 (95.9%)	0.81
	No	4 (3%)	2 (4.2%)	3 (5.8%)	2 (5.1%)	11 (4.1%)	
Is there anything you would like to change about your teeth?	Yes	57 (42.2%)	26 (54.2%)	34 (65.4%)	29 (74.4%)	146 (53.3%)	0.001*
	No	78 (57.8%)	22 (45.8%)	18 (34.6%)	10 (25.6%)	128 (46.7%)	
Has anyone suggested orthodontic treatment to you?	Yes	35 (25.9%)	18 (37.5%)	16 (30.8%)	20 (51.3%)	89 (32.5%)	0.023*
	No	100 (74.1%)	30 (62.5%)	36 (69.2%)	19 (48.7%)	185 (77.5%)	
Do you think you should have orthodontic treatment?	Yes	36 (26.7%)	21 (43.8%)	21 (40.4%)	22 (56.4%)	100 (36.5%)	0.003*
	No	99 (73.3%)	27 (56.2%)	31 (59.6%)	17 (43.6%)	174 (63.5%)	

**Table 3:** Comparison of study subject’s beliefs IOTN – AC Groups

\*Chi-square test ( $p < 0.05$  – Statistically significant)

Table 4 depicts the correlation between the IOTN – AC score and PIDAQ among the study subjects. A significant positive correlation ( $r = 0.175$ ,  $p < 0.05$ ) was observed between the IOTN AC score and PIDAQ score of the study subjects.

Component	Mean ± SD	r-value	p-value
PIDAQ	25.67 ± 10.65	0.175	0.004
IOTN - AC	2.20 ± 1.67		

**Table 4:** Correlation between IOTN – AC and PIDAQ score among the study subjects

\*Pearson’s correlation ( $p < 0.05$  – Statistically significant)

## Discussion

Assessment of psychological and social impact of dental aesthetics is essential for assessment of facial aesthetics and impact on the quality of life. Young female population pays more attention to their physical appearance and facial aesthetics, this study was undertaken to assess the psychosocial impact of dental aesthetics among the young female population. Psychosocial Impact of Dental Aesthetics was assessed using ‘PIDAQ’ questionnaire developed by Klages et al (2006)<sup>12</sup> and Dental Aesthetics was assessed using IOTN – AC [Index of Orthodontic Treatment Need – Aesthetic Component].<sup>14</sup>

Comparison of the following four domains of PIDAQ questionnaire – ‘Dental Self-Confidence’, ‘Social Impact’, ‘Psychological Impact’ and ‘Esthetic Concern’ and ‘Perceived Orthodontic Treatment Need’ among the four study groups classified based on IOTN – AC

score indicated a strong ‘psychosocial impact’ based on the dental aesthetics score of the study subjects similar to the study conducted by Munizeh Khan et al (2008).<sup>15</sup>

The appearance of the mouth and smile plays a major role in assessment of facial attractiveness and contributes to self-concept and self-esteem.<sup>2,3,16</sup> ‘Dental self-confidence’ is suggested to have an impact on the emotional state of a person. Present study revealed that the dental self-confidence score was lowest among the study subjects with higher IOTN – AC scores based on their self-perception, as altered alignment of the teeth may be less favourable towards their dental attractiveness leading to poor social recognition. Lower grades of IOTN – AC had well aligned dentition and well contentment towards their dental appearance. The results are similar to the study by Klages et al (2004),<sup>8</sup> Rozina Nazir et al (2014)<sup>13</sup> and Munizeh Khan et al (2008).<sup>15</sup>

‘Social Impact’ assesses the potential problems faced in social situations because of the dental appearance by the individual. People with favourable dental appearance have a positive dental interaction and good social recognition among peers.<sup>2,3,16</sup> In the present study higher social impact has been noted among the study subjects with IOTN – AC score greater than 4, similar to the studies by Klages et al (2004)<sup>8</sup> and Munizeh Khan et al (2008).<sup>15</sup> This may be due to the phenomenon; ‘social comparison’ whereby facial-appearance related self-concept may be affected to the extent of being a social handicap.<sup>16</sup>

‘Psychological Impact’ evaluates feelings of inferiority or unhappiness related to an individual’s comparison of

'Aesthetic concern' provides information on the self-perception of dental aesthetics among the study subjects. Study subjects with IOTN – AC score greater than 4 had more aesthetic concern regarding their dentition and lowest aesthetic concern was found among study subjects with IOTN AC score 1. Self-perception for orthodontic treatment was found to be high among study subject's higher IOTN AC score. The results are similar to the studies by Mandall Et al (2005).<sup>17</sup>

The present study concluded that there was a significant positive correlation between the 'PIDAQ score' and self-perceived 'IOTN AC score' of the study subjects. The results of the present study showed that, with the increase in severity of malocclusion there is a decrease in 'Dental self-confidence', higher 'Social and Psychological impact' and more 'Aesthetic concern'. The index IOTN AC can be used as a tool for assessing the malocclusion on large surveys and PIDAQ questionnaire can be used as an adjunct to assess the psychosocial impact of dental aesthetics. Self-perceived need for orthodontic treatment had shown that people with higher PIDAQ score and IOTN AC score opted to undergo orthodontic treatment.

Author declare no conflict of interest.

## References

- 1) Settineri S, Mento C, Rizzo A, Liotta M, Militi A, Terranova A. Dysmorphic level and impact of Dental aesthetics among adolescents. *Indian Journal of Research*. 2013;2(7):210-4
- 2) Bos A, Hoogstraten, Prahi-Andersen B. Expectations of treatment and satisfaction with dentofacial appearance in orthodontic patients. *Am J OrthodDentofacialOrthop*. 2003;123:127-32.
- 3) Social thought and social behaviour. In: Baron RA. *Essentials of psychology*. 2nd ed. Massachusetts: Allyn& Bacon. 1999:535-66.
- 4) Kunal J, Sabyasachi S, Jagannatha GV, RidhiN, Gautam B, Poonam S et al. Prevalence of malocclusion and its psycho-social impact among 12 to 15 year old school children in Lucknow city. *Journal of Clinical and Diagnostic Research*. 2014;8(10):36-9.
- 5) Jacobson A. Psychological aspects of Dentofacial aesthetics and Orthognathic surgery. *The Angle Orthodontist*. 1984; 54(1):18-35.
- 6) Sarver DM, Proffit WR. Special considerations in diagnosis and treatment planning. In: Graber TM, Vanarsdall RL, Vig KW, (edi). *Orthodontics: Current principles and techniques*. 4th ed. Missouri: Elsevier. 2005:4-9.
- 7) Morphopsychology and esthetics. In: Rufenacht CR. *Fundamentals of esthetics*. Illinois: Quintessence Publishing Co. 1990:59-66.
- 8) Klages U, Bruckner A, Zenter A. Dental aesthetics, self-awareness and oral health related quality of life in young adults. *European Journal of Orthodontics*. 2004;26:507-14.
- 9) Bernabe E, Kresevic VD, Cabreos SC, Flores-Mir F, Flores-Mir C. Dental esthetic self-perception in young adults with and without previous orthodontics treatment. *Angle Orthodontics*. 2006; 76:412-6
- 10) Espeland LV, Stenvik A. Perception of personal dental appearance in young adults: relationship between occlusion, awareness and satisfaction. *American Journal of Orthodontics and Dentofacial Orthopedics*. 1991; 100:234-41.
- 11) Grzywacz I. The value of the aesthetic component of the index of orthodontic treatment need in the assessment of subjective orthodontic treatment need. *European Journal of Orthodontics*. 2003;25:57-63.
- 12) Klages U, Claus N, Wehrbein H, Zenter A. Development of a questionnaire for assessment of the psychosocial impact of dental aesthetics in young adults. *European Journal of Orthodontics*. 2006; 28: 103-11.
- 13) Rozina N, Amjad A, Ayesha A. Assessment of Psychosocial Impact of Dental Aesthetics and Self Perceived Orthodontic Treatment Need in Young Adults. *Pakistan Oral & Dental Journal*. 2014;34(2):312-6.
- 14) Brook PH, Shaw WC. The development of an index of orthodontic treatment priority. *European Journal of Orthodontics*. 1989;11:309-20.
- 15) Munizeh K, Mubassar F. Assessment of Psychosocial Impact of Dental Aesthetics. *Journal of The College of Physicians and Surgeons Pakistan*. 2008; 18(9): 559-64.
- 16) Tung AW, Kiyak HA. Psychosocial influences on the timing of orthodontic treatment. *American Journal of Orthod Dentofacial Orthop*. 1998; 113: 29-39.
- 17) Mandall NA, Wright J, Conboy F, Kay E, Harvey L, O'Brien KD. Index of Orthodontic treatment need as a predictor of orthodontic uptake. *Am J Orthod Dentofacial Orthop*. 2005;128:703-7.