



## Perception of Dental Aesthetics among Two Different Age-Groups in an Adult Population

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[Original Article](#)

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### ABSTRACT

**Background:** Dental aesthetic awareness creates a desire for better facial appearance among individuals. A dentist can address their concerns by understanding their expectation. This cross-sectional study aims to compare and assess the self-perception regarding dental aesthetics between male and female patients belonging to different age groups and economic status.

**Materials & Methods:** A questionnaire consisting of 16 questions was distributed among 200 adult patients belonging to two age groups (18-34 and 35-50 years) visiting the dental clinics. The questionnaire focused on patients' perceptions regarding their dental aesthetics, its effect on the quality of life and treatment needs. Descriptive statistics were tabulated, and for assessing the statistical significance, the chi-square test was applied. Binary logistic regression was applied to relate the dependent variable (age) with the independent variables.

**Results:** Among the 200 participants, 58.0% were satisfied with their dental appearance, and 40.5% were happy with their teeth colour. Overall, 55.2% of middle age group participants were more contented with their teeth' appearance than the younger age group. But 64.0% of younger age participants were more satisfied with their teeth colour than those of the middle age group and expressed more satisfaction ( $p=0.0008$ ) about their dental aesthetics.

**Conclusion:** Participants' satisfaction with dental aesthetics was influenced mainly by their perception regarding the tooth colour, appearance of their teeth, and shape of the tooth.



**Keywords:** Awareness, Appearance, Colour, Shape, Questionnaire

## **Introduction**

Dental aesthetics is associated with a better quality of life in any society where social and public media influence beauty's accepted standard.<sup>1</sup> Judgement of appearance and smile is based on subjective evaluation of facial characteristics.<sup>2</sup> Every individual has a very personal smile owing to unique facial structure, gender, style, and character.<sup>1</sup> The viewer's perception, pleasant or unpleasant, is scientifically a psychological interpretation of physiological processes. Dentists aim to transform this visual concept into the desired, and appropriate aesthetic response.<sup>3</sup> Topographic facial anatomy helps to recognize and distinguish one individual from another.<sup>4</sup>

The desire for a perfect complement of white teeth is a compelling factor that influences aesthetic satisfaction. Bleaching has become one of the most sought teeth whitening treatment modalities. Exposure to visual and social media enables a person to acquire information about the various aesthetic treatment options, hence motivating them to seek treatment.

Each individual may have a different attitude towards the appearance of his/her teeth. The patient's opinion of smile may differ from the dentists' opinion. An aesthetic dentist should maintain a healthy balance between creating the patient's specific smile requirement that best suits his/her appearance and functional requirements.<sup>1</sup> Incorporating the patients' feedback is of utmost importance in our daily practice to avoid aesthetic treatment failures.

Due to rising awareness and concern about dental aesthetics among the dental patients, this study was conducted to compare and assess the self-perception about dental aesthetics between male and female patients belonging to different age groups and economic status concerning their satisfaction, the effect on their quality of life and felt need for treatment.

## **Materials and Methods**

In this cross-sectional study, two hundred patients between the age of 18 to 50 years attending the Dental Clinics in the Department of Conservative Dentistry and Endodontics were enrolled. A self-structured, close-ended questionnaire was developed for data collection. Two experts did the Construct, and Content Validity. Internal and External Validity was done after Institutional Ethical Committee approval. The questionnaire focused on socio-demographic items, patient's perception regarding their smile, information about their tooth shade, and aesthetic treatment. The questionnaire was developed in English and in the local language (Kannada) to suit the local population. Two experts evaluated the final version of the questionnaire and changes suggested by them were implemented. The questionnaire's reliability was checked and tested from English to local dialect and local dialect to English and approval was obtained from the institutional ethical committee (IEC no. 18100).

The questionnaire consisting of 16 questions was distributed among two age groups of participants (18-34 and 35-50 years). Participation was optional, the participants were informed about the purpose of the study, and informed consent was obtained before administering the questionnaire. The participants were guaranteed confidentiality due to the anonymous data collection, and their names and identifying information were not obtained; Only age and gender were recorded.

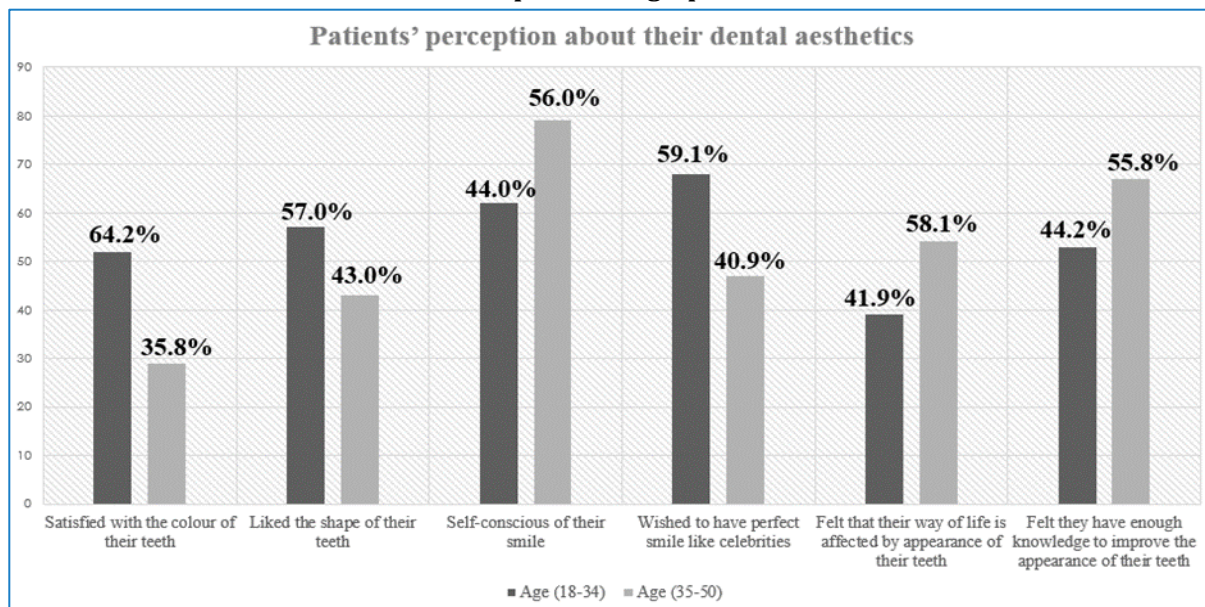
Statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS Inc) 17.0 version. Descriptive statistics were tabulated and a chi-square test was applied to assess the statistical significance. The  $p$ -value  $\leq 0.05$  was considered as statistically significant. Binary logistic regression with age as a dependent factor, and beverage consumption, habits causing staining of teeth, tooth colour and shape, consciousness of smile, use of teeth whitening products, the effect of dental appearance on patients, and their dental aesthetic knowledge as independent factors were analysed.

## Results

According to the results of the chi-square test, demographic variables namely age, gender, and socioeconomic status, significantly impacted the patients' general satisfaction with his/her dental appearance as shown in **Table 1**. Among the younger age group, 64 % of the participants were satisfied with their teeth colour and 57% liked their teeth' shape. We found that 56% of middle age group participants were more conscious about their smiles than younger age group participants. But, more number of younger age group participants (59.1%) wished to have a perfect smile like celebrities (Figure 1).

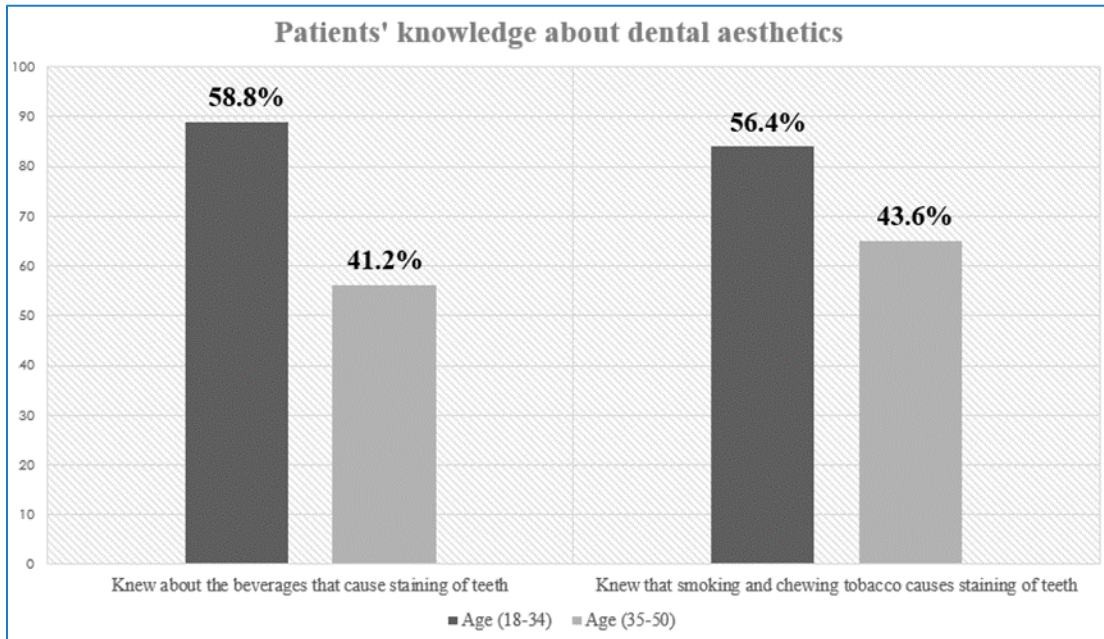
Participant Demographic Background	Number (N= 200)
<b>Gender</b>	
Male	77 (38.5)
Female	123 (61.5)
<b>Age</b>	
18-34	100 (50.0)
35-50	100 (50.0)
<b>Income</b>	
$\geq 50,000$	147 (73.5)
$< 50,000$	53 (26.5)

**Table 1: Participant Demographic Distribution**

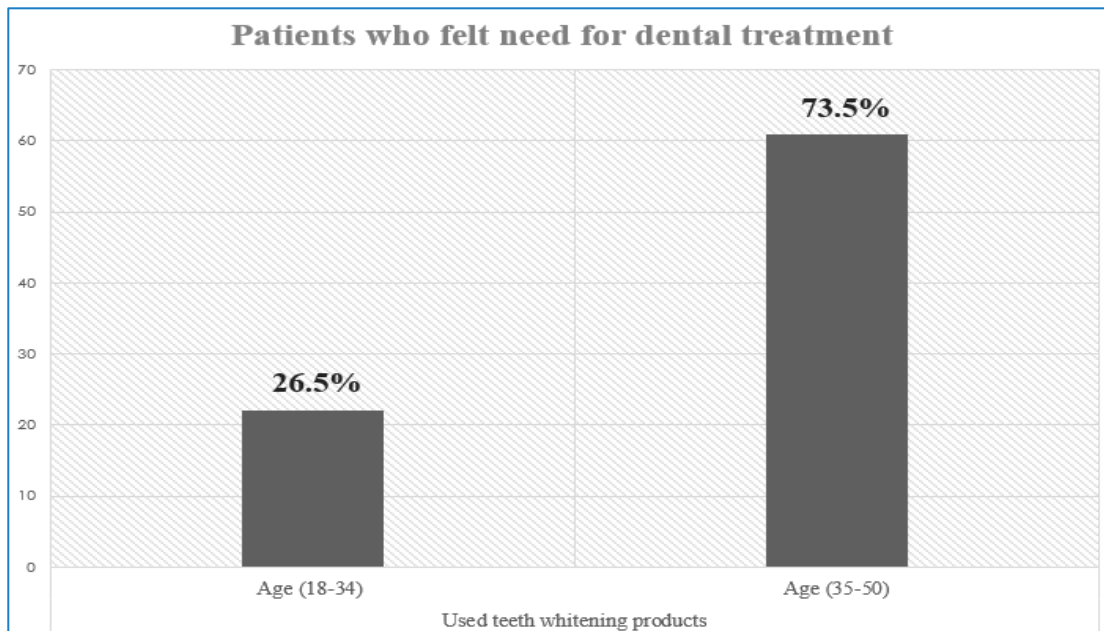


**Figure1. Participants Perception about their Dental Aesthetics.**

Participants belonging to the middle age group (58.1%) felt that their way of life is influenced by the appearance of their teeth, but had adequate knowledge to improve their dental appearance. The younger age group participants were more aware of the reasons causing staining of teeth such as beverages, smoking, and consumption of tobacco products (Figure2). Furthermore, the use of bleaching products for tooth whitening was significantly higher among the middle age group (73.5%) compared to the younger age group (Figure 3).



**Figure2. Participants Knowledge about Dental Aesthetics.**



**Figure3. Use of Bleaching Products among Study Participants**

Results suggest that females brushed more frequently when compared to males. About half of the middle age females (51.9%) had undergone dental treatment to change the appearance of their teeth when compared to other groups. Males belonging to both age groups smoked/chewed tobacco at higher rates than females. (Table2).

Questions	Answers	Male 18-34yr	Female 18-34yr	P-value	Male 34- 50yr	Female 35-50yr	P- value
How many times do you brush your teeth in a day?	Twice	15(51.7)	46 (64.8)	0.047*	32(66.7)	42(80.8)	0.021*
Do you have any of the following habits?	Smoking/Chewing tobacco	8 (27.5)	1 (1.4)	0.0008*	7(14.6)	0(0.0)	0.017*
Have you ever undergone dental treatment to change the appearance of your teeth?	Yes	12 (41.4)	29 (40.8)	0.286	11(22.9)	27(51.9)	0.003*

Asterisk sign (\*) indicates statistically significant difference by Chi square test (P<0.05)

**Table 2: Self-perception regarding dental aesthetics of male and female patients belonging to two different age groups**

We observed that middle-aged participants belonging to higher socioeconomic status were more satisfied with their teeth colour, more conscious of their smile, believed that their teeth appearance affected their way of life, and had sufficient knowledge to improve their dental appearance when compared to lower socioeconomic status participants. (Table 3)

Questions	Answers	Income ( $\geq 50,000$ ) 18-34 years	Income ( $< 50,000$ ) 18-34 years	P- value	Income ( $\geq 50,000$ ) 35-50 years	Income ( $< 50,000$ ) 35-50 years	P value
Are you satisfied with the colour of your teeth?	I am happy with colour of the teeth	46 (51.1)	6 (60.0)	0.854	41(71.9)	19(44.2)	0.018*
Are you self-conscious of your smile?	Yes	54 (60.0)	8 (80.0)	0.216	43(75.4)	36(83.7)	0.025*
Do you feel that your way of life is affected by appearance of your teeth?	Yes	33 (36.7)	6 (60.0)	0.151	36(63.2)	18(41.9)	0.034*
Do you feel you have enough knowledge to improve the appearance of your teeth?	Yes	45 (50.0)	8 (80.0)	0.071	45(78.9)	22(51.2)	0.003*

Asterisk sign (\*) indicates statistically significant difference by Chi square test ( $P < 0.05$ )

**Table 3: Effect of socio-economic status on the dental aesthetic among two different age groups**

Binary logistic regression with age group as dependent factor has shown statistical significance in relation to independent factors, namely type of beverage consumption, knowledge on beverages, habits causing staining of teeth, patients' satisfaction towards their tooth colour and shape, the consciousness of their smiles when looking at the teeth of celebrities, use of teeth whitening products, effect of teeth appearance on patients felt way of life and enough knowledge to improve it. Independent factors like brushing time, knowledge of home bleaching methods, opinion about stained teeth, teeth defects revealed during a smile, and self-contentment regarding teeth appeared statistically insignificant (Table 4).



Questions	Score	df	Sig.
How many times do you brush your teeth in a day?	7.626	3	.054
Do you take any of the following beverages?	27.189	2	.000*
Do you know these beverages (tea, coffee and aerated drinks) cause staining of teeth?	13.311	2	.001
Do you have any of the following habits?	.286	2	.867
Do you know these habits (smoking, chewing tobacco, etc) cause staining of teeth?	11.698	2	.003*
Are you aware of home bleaching methods?	2.415	1	.120
Are you happy with appearance of your teeth?	3.138	2	.208
Have you ever undergone dental treatment to change the appearance of your teeth?	1.185	2	.553
What is your opinion about stained teeth?	4.469	2	.107
Are you satisfied with the colour of your teeth?	13.607	2	.001*
Have you ever used teeth whitening products?	32.399	2	.000*
Do you like the way your teeth are shaped?	9.105	2	.011*
Are you self-conscious of your smile?	11.967	2	.003*
When you look at your smile in the mirror, do you see any defect in your teeth?	.936	2	.626
Do you look at the teeth of celebrities in social media, magazines or television and wish to have perfect smiles as they have?	9.429	1	.002*
Do you feel that your way of life is affected by appearance of your teeth?	4.228	1	.040*
Do you feel you have enough knowledge to improve the appearance of your teeth?	3.865	1	.049*

Asterisk sign (\*) indicates statistically significant difference by Chi square test ( $P < 0.05$ )

**Table 4: Logistic regression depicting age group as dependant factor comparing with independent factors**

## Discussion

In aesthetic dentistry, patients' perception of dental appearance and their satisfaction, is a major concern for the dentists and hence mandatory for any treatment plan. Dental colour is the most critical characteristic associated with the dental arch aesthetics. Individual preferences, age, gender, economic and cultural background, social stratum, and advertisements can all influence subjective recognition of tooth colour.

In the current study, the colour of the tooth was one of the significant reasons, the participants were dissatisfied with their dental appearance. Depending on the participants' age, the younger age group was more satisfied with their teeth' colour than middle-age participants. The reason could be that the younger individuals have whitish and more opaque dentin and a thicker enamel layer.<sup>5-7</sup> Shulman et al. in his study among the teenagers came to the conclusion that 68.4% of patients were satisfied with the shade of their teeth.<sup>8</sup> But in another study, the majority of the younger age participants were dissatisfied with their tooth shade.<sup>9</sup> As a person ages, there is wear of the teeth with progressive loss of enamel thickness, and teeth



appear more yellowish. Hence, changes in dental shade are considered as aesthetic characteristics that do not correlate with the function of teeth.<sup>5</sup> Tiggemann had reported that as age advances, adults emphasise on functionality and not on mere appearance. Presently in the era of visual and social media, the focus is shifting toward aesthetics.<sup>10</sup> Although dental appearance deteriorates with age, older people's level of acceptance is higher than in younger groups which is reflected in our study. This is in accordance with the study conducted by Alkhatib et al., who found that older people exhibited greater satisfaction with their dental appearance and, in particular, with their dental shade.<sup>11</sup>

In our study, the middle age group participants were more conscious of their smiles than the younger age group. They felt that the quality of life is affected by dental appearance, but they were aware of the treatments that can help them improve their dental aesthetics. Furthermore, tooth bleaching was the most desired treatment by middle age participants to improve their tooth appearance.<sup>12</sup> Patients opting for bleaching to improve their dental aesthetic could be due to the influence of media advertisements promoting tooth whitening pastes or other whitening agents for attractive teeth and smile. In our survey, we have also found that the younger age group participants were more knowledgeable about discolouration/staining of teeth.

The results suggested that gender affects the perception of dental aesthetics. Females (belonging to both age groups) have better self-perception regarding dental aesthetics. Hence, they are more likely to brush their teeth twice daily and undergo dental treatment more often than males to change their teeth' appearance, which is in accordance with previous studies.<sup>13,14</sup> According to Tin-Ooet al., dissatisfaction with general dental appearance was significantly more common in females than in males.<sup>15</sup> A study by Vallittu et al. also reported that tooth appearance was more important to women than to men.<sup>16</sup> Interestingly in our study, the male participants were more dissatisfied with the colour of their teeth. The various causes for discolouration of teeth could be inadequate oral hygiene, consumption of beverages, and smoking.<sup>14,17</sup>

Socioeconomic status also influences desired aesthetic treatment. The cost is a barrier for treatment considered cosmetic. Middle-aged participants with better socioeconomic status were more satisfied with their teeth' colour than with the younger age group.<sup>18</sup> They felt that dental appearance has a significant impact on lifestyle, and they knew whom to approach for treatment. However, the lower socioeconomic participants desired aesthetic treatment but did not consider a necessity due to the cost factor. Overall, the participants were more concerned about their dental aesthetics especially, tooth colour which has also been observed in other studies.<sup>8-9,19</sup> The questionnaire was administered to patients who were visiting the dental clinics, hence the participants would be more sensitive about aesthetic concerns, which is a limitation. A cross-sectional study with a larger sample size in the general population can help us further, to understand the perception among individuals regarding dental aesthetics. It can be concluded that at a younger age, most patients are happy with the appearance of their teeth but as a person ages, there is dissatisfaction especially regarding colour of the teeth. The clinician should be able to manage these aesthetic concerns using different treatment options such as bleaching, composite and ceramic veneers.

## **Conclusion**

Participants belonging to younger age groups and middle-age groups with better socioeconomic status were more satisfied with their teeth' colour. Females of the younger age group were more concerned about their dental appearance. The participants' satisfaction with tooth appearance was influenced mainly by their perception regarding tooth colour, the appearance of teeth followed by the tooth's shape. As clinicians, when



planning aesthetic treatment, we should consider patients' perception, view, age, gender, and socioeconomic status.

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