

Evaluation of Self Contentment with Dental Appearance and Preference to Treatment to Improve Esthetics

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Abstract

Introduction: Oral health not only comprises of mere absence of oral disease and dysfunction but also includes dental appearance for overall facial beauty as it has influence on person's self confidence and social life. Dental aesthetic comprises of tooth color, shape, alignment and position of the teeth in the dental arches. For the rewarding outcome of the treatment, clinician need to understand the root of dissatisfaction with present aesthetic and desired treatment to enhance the aesthetic that will assist in development of treatment plan.

Materials and Methods: Pre-tested structured questionnaire was used in 349 subjects from previous studies with slight modification for data collection. The questionnaire was divided into three parts, first part recorded the demographic data, second part consisted of the patients' view regarding satisfaction of the dental appearance and third part consist of the Likert scale where participants will rate the satisfaction level regarding their general appearance.

Results: A relationship between gender ($P < 0.05$), education ($P = 0.006$) and overall satisfaction of the general appearance of the teeth was seen. Males were found to be more satisfied than females and people with higher education were more satisfied with their general dental appearance. For majority of the participants, choice of treatment to improve the aesthetic was teeth whitening (37.25%) followed by orthodontic treatment (29.80%), then dental crown, veneers (27.29%). The least favoured treatment by the participants is denture (5.16%) to improve the aesthetic.

Conclusions: Dissatisfaction with the color, alignment, teeth appearance and condition are the main reasons for the patients to seek aesthetic treatment.

Key words: Dental Aesthetic; Personal Satisfaction; Preferred Treatment; Self-Perception.

Introduction

In last few decades people have become more concerned about their dental appearance, aesthetics and smile. Oral health not only comprises of mere absence of oral disease and dysfunction but also includes dental appearance for overall facial beauty as it has influence on person's self confidence and social life.¹ Dental

aesthetics plays a major role in overall beauty of the face.² The patients seeking treatment to the Prosthodontists and Orthodontists are mainly for the aesthetic purpose. There is remarkable effect on perceived oral health related quality of life due to minor inconsistencies in dental esthetics.³⁻⁵ Dental aesthetic comprises of tooth colour, shape, alignment and position of the teeth in the dental arches.^{2,6-7} These factors are influenced by individual's personal choice, socio-demographic factors, cultural background, age, sex and education level. Female are reportedly more concerned about the dental aesthetics compared to male. Concern for dental aesthetics decreases with increase in age and education level.⁸ While restoring the

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dental aesthetics, creating natural appearance is the prime task in all field of dentistry especially for Prosthodontists and restorative dentists.⁹ Advancement in technology and development of the dental materials has led to availability of numerous treatment options and excellent result fulfilling the aesthetic demand of the patients.¹⁰ To fulfil the aesthetic demand of the patient clinician should have knowledge about the dental aesthetic expectation of the patient. As there may be variation in perception of aesthetics between patient and clinician which could create differences during treatment if not properly recognized.¹¹ Dental professionals should be familiar with the psychological spark of treatment demands, the effect of aesthetic treatment in patients' satisfaction, and subsequently the impact of treatment in successful outcome.¹²

Patients' demand and preference for the specific type of treatment to improve the dental aesthetics are still not studied and explored sufficiently. Various studies have found varying level of satisfaction among different populations like 79.4% in Nigeria,¹³ 71.1% in Turkey,¹⁴ 67.6% in Jordan,¹⁵ and 69.60% in Iran.¹⁶ Therefore, for the rewarding outcome of the treatment, clinician need to understand the root of dissatisfaction with present aesthetic and desired treatment to enhance the aesthetics which will assist in development of treatment plan.¹⁷ The aim of this study was to evaluate the self contentment with dental appearance and preference to treatment to improve esthetics in the people coming to Devdaha Medical College and Research Institute, Nepal.

Materials and Methods

A descriptive cross-sectional study was conducted on the patients and attendant attending dental OPD of Devdaha Medical College and Research Institute over a period of 10 months (September 2019-July 2020). The

sample size was 384, which was determined using the formula-

$$\left[\frac{z^2}{d^2} = \frac{*p(1-p)}{d^2} \right] \text{ with}$$

$$z = 1.96, d = 0.05 \text{ and } p = 0.5.$$

The participants who were 18 years or older with no history of medical conditions or diseases and received no dental treatment for last six months were included in the study. The study was approved by Institutional Review Committee of Devdaha Medical College and Research Institute. Brief explanation of study was given to each participant and verbal and written consent was obtained before commencing the study.

The pre-tested structured questionnaire was used from previous studies by Tin-Oo et al⁷ with slight modification for data collection. The questionnaire was divided into three parts, first part recorded the demographic details of the participants (name, age, sex, marital status, education), second part recorded participants' view regarding satisfaction of the dental appearance, colour, crowding, teeth alignment, protrusion, caries in front teeth, unaesthetic filling, fracture in front teeth and patient's desire to undergo treatment to improve appearance of the teeth and third part consisted of the Likert scale where the participants will rate the satisfaction level regarding general appearance. The questionnaires were administered to the participants and the investigators were available all the time to resolve any queries. The response time to complete the questionnaire was approximately ten minutes. This process continued until the desired sample size was achieved.

After completing the questionnaire, the data was coded, enter into the excel sheet and statistical analysis was done using SPSS version 21. The descriptive statistics (mean, median, standard

deviation, frequency, percentage frequency) and chi square test at the significant level of $p < 0.05$ were analyzed. During the data collection phase, participants were ensured about the confidentiality about their identity and response. The incomplete questionnaires were excluded from the final Performa during the data entry phase that led to total number of participants 349 in the study.

Results

Among the 349 participants who have completely filled the questionnaires, 162(46.42%) were males and 187(53.58%) were females with male: female ratio 1:1.15. The participants were of the age 18-65 with majority in the age group 18-25years 128 (36.67%) and majority of the respondent have education till bachelor level 176(50.43%). The demographic information of the participants is presented in table 1. The responses given by the participants regarding their self assessment of the anterior teeth aesthetic is shown in figure 1. The result shows 182(52.15%) of the participants were satisfied with the general appearance of their teeth, 63.32% were satisfied with the color of their teeth whereas 11.74% have unaesthetic filling and 20.64% have fracture in their anterior teeth. Correlation between the satisfaction with dental

appearance and the satisfaction with tooth color with demographic variables are depicted in Table 2.

A significant relationship between gender ($P < 0.05$), education ($P = 0.006$) and overall satisfaction of the general appearance of the teeth was seen. Male are more satisfied than female with their general appearance of teeth and people with higher education are more satisfied. There is also a significant relationship between satisfaction of the teeth color and education level ($P < 0.05$) and age group ($P < 0.05$). Higher the education more satisfaction with the teeth color where as older the age less satisfied with the teeth color. Older people have more fracture in their anterior teeth that are statistically significant ($P < 0.05$).

Majority of the participants, choice of treatment to improve the aesthetic is teeth whitening (37.25%) followed by orthodontic treatment (29.80%), then dental crown, veneers (27.29%). The least favored treatment by the participants is denture (5.16%) to improve the aesthetic of their anterior dental aesthetic. In Likert scale ratings, 19.77% were very satisfied, 33.52% were satisfied, 16.33% were unsure, 24.07% were dissatisfied and 6.31% were very dissatisfied with their anterior dental aesthetic.

Table 1: Demographic variables of the participants

Variables		Numbers	Percent
Sex	Male	162	46.42%
	Female	187	53.58%
Age group (Years)	18-25	128	36.67%
	26-40	125	35.82%
	41-65	96	27.52%
Education	School level	48	13.75%
	High School level	74	21.20%
	Graduate	176	50.43%
	Post Graduate	51	14.62%

Table 2: Distribution of participants regarding their satisfaction with general dental appearance, teeth color, unesthetic filling and fracture in anterior teeth based on demographic variables

Variables		General satisfaction with teeth		P	Satisfaction with teeth color		P	Unesthetic filling		P	Presence of fracture in anterior teeth		P
		Yes	No		Yes	No		Yes	No		Yes	No	
Sex	Male	103	59	<0.05	95	67	0.091	19	143	0.992	39	123	0.139
	Female	79	108		126	61		22	165		33	154	
Education	School	18	30	0.006	14	34	<0.05	12	36	0.023	20	28	<0.05
	High School	30	44		41	33		8	66		18	56	
	Graduate	104	72		127	49		16	160		22	154	
	Post Graduate	30	21		39	12		5	46		12	39	
Age group	18-25 Years	60	68	0.86	94	34	<0.05	18	110	0.593	14	114	<0.05
	26-40 Years	75	50		84	41		13	112		21	104	
	41-65 Years	47	49		43	53		10	86		31	59	

*P<0.05 – Statistically significant response

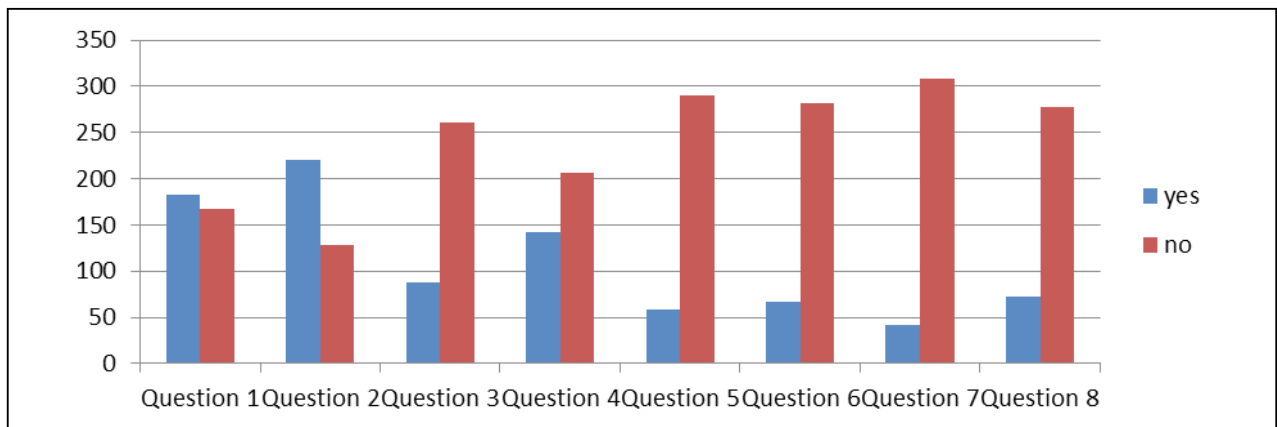


Figure 1: Frequency distribution of participants according to their self-assessment of anterior aesthetic

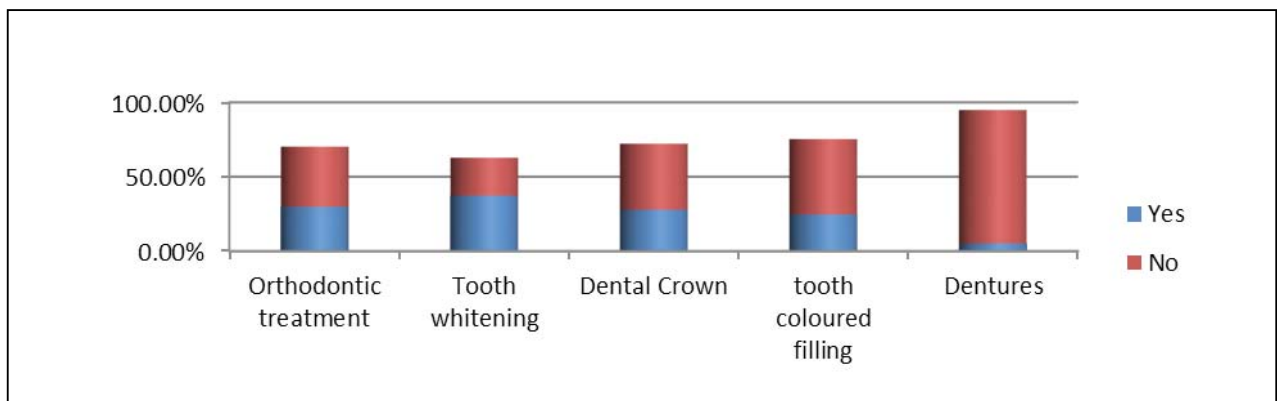


Figure 2: Frequency distribution of choice of treatment participants want to undergo to improve aesthetics

Discussion

For many years function, alleviation of pain and preserving the biology of the teeth were considered to be more important than the aesthetic. However with the time aesthetic has become one of the major concern and the treatment plan, without including aesthetic view of patient, may bring disastrous outcome.¹⁸ The concept of aesthetics and perception towards the dental aesthetics vary from population to population and among the individuals in the population.⁸

In this study 52.15% of the participants were satisfied with their general teeth appearance, among them 29.51% were male and 22.64% were female. This study is consistent with the study done by Al-Shahrani et al¹⁹ and Al-Omiri et al⁵ where females were more dissatisfied with their anterior esthetics and contrast to the study done by Afshar et al.¹⁶ Various studies conducted in India(40.9%),²⁰ Malaysia (47.2%)⁷ and Saudi Arabia (50%)²¹ of the population satisfied with their anterior esthetic which was lower than our study whereas the study done in Turkey (57.3%),⁴ Palestine(65%),²² Jordan(65.5%)²³ and United Kingdom(76%)²⁴ shows the higher level of satisfaction. This study shows that satisfaction with dental appearance is influenced by many factors among which most relevant are personal preference, socioeconomic status and the cultural background.

Tooth colour is one of the prime factors that determined the satisfaction of overall dental appearance. In this study 63.32% of the participants were satisfied with their teeth colour which is consistent with the study done by Maghaireh et al²⁵ where 66.3% were satisfied with their tooth colour. In this study 37.25% of the participants wanted tooth whitening treatment to improve their aesthetics. In this study dissatisfaction with tooth colour was statistically significant ($P < 0.05$) in 41-65 years age group. This was found to be contrasting from

the study by Afshar et al¹⁶ in which participant aged 21-25 years were more dissatisfied with their teeth colour. People with higher education are more satisfied with their teeth colour which is similar to the study done by Vallitu et al⁸ and Xiao et al.²⁷ Higher the education more the satisfaction with the teeth colour may attributed to higher confidence level and higher self-esteem level.^{4,26}

Malocclusion has prominent role in the anterior aesthetic. In this study 25.21% of the participants felt their teeth are crowded. This finding is similar to that of Tin-Oo (26.4%),⁷ Afshar et al (22.9%)¹⁶ and Al-Zarea.⁵ Of the total participant 16.91% felt that their teeth are protruded which were close to the result of the study done by Al-Zarea(17.7%)⁵ and Afshar et al (18.2%).¹⁶

Less than quarter of the participants claimed to have caries in front teeth(19.19%), unaesthetic filling (11.74%) and fracture in their anterior teeth(20.64%) which were similar to the study done in Nigeria where caries in front teeth account for 19.7%, unaesthetic filling 7.4% and fracture in front teeth 21.3%.²⁷

The most preferred treatment in this study to improve aesthetics is tooth whitening which is the finding similar to the most preferred cosmetic dental treatment in Malaysia and Riyadh.^{7,28} This suggests that satisfaction of anterior teeth aesthetics has strong co-relation with teeth color.⁵ The second most preferred treatment is orthodontic treatment followed by crown and veneers to improve the aesthetics. The least preferred treatment is denture; this may be lesser subjects in higher age group and preference of fixed treatment rather than removable prosthesis. In this study satisfaction with the general appearance evaluated by the patient in Likert scale has direct correlation with the satisfaction with the anterior teeth appearance. This result is persistent with the idea that teeth appearance has impact on general appearance^{5,24} and contrast to the study where

there is no relationship between the general appearance and teeth.²⁹ Different in sample size, cultural background, personal preference and psychological impact might explain this conflict in result.

Conclusions

Aesthetics is subjective idea and it is the combination of various qualities. It cannot be defined in any one dimension. Tooth shade play major role in the satisfaction with the anterior aesthetics followed by position and alignment of teeth in the arch. Dissatisfaction with the colour, alignment, teeth appearance and condition are the main reason for the patients to seek aesthetic treatment.

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References

1. Afroz S, Rathi S, Rajput G, Rahman SA. Dental esthetics and its impact on psycho-social wellbeing and dental self-confidence: a campus based survey of North Indian University. *J Indian Prosthodont Soc.* 2013;13:455-460.
2. Qualtrough AJ, Burke FJ. A look at dental esthetics. *Quintessence international.* 1994 Jan 1;25(1).
3. Klages U, Bruckner A, Zentner A. Dental aesthetics, self-awareness, and oral health-related quality of life in young adults. *Eur J Orthod.* 2004 Oct 1;26(5):507-14.
4. Akarslan ZZ, Sadik B, Erten H, Karabulut E. Dental esthetic satisfaction, received and desired dental treatments for improvement of aesthetics. *Indian J Dent Res.* 2009;20:195-200.
5. Al-Zarea BK. Satisfaction with appearance and the desired treatment to improve aesthetics. *Int J Dent.* 2013.
6. Kershaw S, Newton JT, Williams DM. The influence of tooth colour on the perceptions of personal characteristics among female dental patients: comparisons of unmodified, decayed and 'whitened' teeth. *Br Dent J.* 2008 Mar;204(5):E9.
7. Tin-Oo MM, Saddki N, Hassan N. Factors influencing patient satisfaction with dental appearance and treatments they desire to improve aesthetics. *BMC oral health.* 2011 Dec 1;11(1):6.
8. Vallittu PK, Vallittu AS, Lassila VP. Dental aesthetics—a survey of attitudes in different groups of patients. *J Dent.* 1996 Sep 1;24(5):335-8.
9. Carlsson GE, Johansson A, JOHANSSON AK, Ordell S, Ekbäck G, Unell L. Attitudes toward dental appearance in 50- and 60-year-old subjects living in Sweden. *J Esthet Restor Dent.* 2008 Feb;20(1):46-55.
10. Hasanreisoglu U, Berksun S, Aras K, Arslan I. An analysis of maxillary anterior teeth: facial and dental proportions. *J Prosthet Dent.* 2005 Dec 1;94(6):530-8.
11. Ward DH. A study of dentists' preferred maxillary tooth width proportions: comparing the recurring aesthetic dental proportion to other mathematical and naturally occurring proportions. *J Esthet Restor Dent.* 2007;19:324-337.
12. Alghamdi ASA. Satisfaction with dental appearance and desired esthetic treatment in Saudi dental patients. *EJPMR.* 2016, 3:126-130.
13. Ajayi EO. Dental aesthetic self-perception and desire for orthodontic treatment among school children in Benin City, Nigeria. *Niger Q J Hosp Med.* 2011;21(1):45-9.
14. Hamamci N, Başaran G, Uysal E. Dental Aesthetic Index scores and perception of personal dental appearance among Turkish university students. *Eur J Orthod.* 2009 Apr 1;31(2):168-73.
15. Albashaireh ZS, Alhusein AA, Marashdeh MM. Clinical assessments and patient evaluations of the esthetic quality of maxillary anterior restorations. *Int J Prosthodont.* 2009 Jan 1;22(1).

16. Afshar MK, Eskandarizadeh A, Torabi M, Mousavi MJ, Mohammadzadeh I. Patient Satisfaction with Dental Appearance and Related Factors--A Cross Sectional Study. *J Evol Med Dent Sci*. 2019 Dec 2;8(48):3569-75.
17. Gržić R, Špalj S, Lajnert V, Glavičić S, Uhač I, Kovačević-Pavičić D. Factors influencing a patient's decision to choose the type of treatment to improve dental esthetics. *Vojnosanit pregl*. 2012;69(11):978-85.
18. Spear FM, Kokich VG, Mathews DP. Interdisciplinary management of anterior dental esthetics. *J Am Dent Assoc*. 2006 Feb 1;137(2):160-9.
19. Al-Shahrani I. Self-perception of personal dental appearance among students of King Khaled University Abha, Saudi Arabia. *Eur J Gen Dent*. 2014;3(3):181-4.
20. Sunali K, Gharpure AS. Determination of self satisfaction with dental appearance and oral health status among a population of dentate adults in a referral institution. *Br J Med Med Res*. 2014;4(14):2725-35.
21. Maganzini AL, Schroetter SB, Freeman K. Improvement in smile esthetics following orthodontic treatment: A retrospective study utilizing standardized smile analysis. *Angle Orthod*. 2014 May 1;84(3):492-9.
22. Younis A, Al-Omiri MK, Hantash RO, Alrabab'Ah M, Dar-Odeh N, Khraisat A. Relationship between dental impacts on daily living, satisfaction with the dentition and personality profiles among a Palestinian population. *Odontostomatol Trop*. 2012 Jun 1;35(138):21-30.
23. Karasneh J, Al-Omiri MK, Al-Hamad KQ, Al Quran FA. Relationship between patients' oral health-related quality of life, satisfaction with dentition, and personality profiles. *J Contemp Dent Pract*. 2009 Nov 1;10(6):E049-56.
24. Alkhatib MN, Holt R, Bedi R. Age and perception of dental appearance and tooth colour. *Gerodontology*. 2005;22(1):32-6.
25. Maghaireh GA, Alzraikat H, Taha NA. Satisfaction with Dental Appearance and Attitude toward improving Dental Esthetics among Patients attending a Dental Teaching Center. *J Contemp Dent Pract*. 2016 Jan 1;17(1):16-21.
26. Xiao J, Zhou XD, Zhu WC, Zhang B, Li JY, Xu X. The prevalence of tooth discolouration and the self-satisfaction with tooth colour in a Chinese urban population. *J Oral Rehabil*. 2007 May;34(5):351-60.
27. Enabulele JE, Omo JO. Self perceived satisfaction with dental appearance and desired treatment to improve aesthetics. *Afr J Oral Health*. 2017;7(1):1-7.
28. Alsubait A, Ali A, Alwakeel R, Aldebasia W, Almutire A, Alaskar L, Alturki H, Alajmi A, El-Metwally A. Satisfaction, awareness and attitude about oral aesthetics among female high school students in Riyadh, Saudi Arabia: a cross-sectional study. *Journal of Oral & Dental Health*. 2017;1(1):1-5.
29. Höfel L, Lange M, Jacobsen T. Beauty and the Teeth: Perception of Tooth Color and Its Influence on the Overall Judgment of Facial Attractiveness. *Int J Periodontics Restorative Dent*. 2007 Aug 1;27(4).
30. Bilal R. Self perception and satisfaction with dental esthetics in dental students of Qassim region of Saudi Arabia. *Pak Oral Dent J*. 2016 Sep 1;36(3)