

## Self-perceived Satisfaction with Dental Appearance and Associated Factors among Secondary School Students in Iringa, Tanzania

### Abstract

**Introduction:** Oral health is not only the absence of oral ailments and dysfunctions but also includes other components that influence a person's social life like satisfaction with one's dental appearance and beauty. This study was done to determine the self-perceived satisfaction with dental appearance and associated factors among secondary school students in Iringa, Tanzania. **Methods:** This descriptive cross-sectional study was done in the Kilolo district of the Iringa region on the southern highlands of Tanzania. It involved students from four private and four government secondary schools. A self-administered structured questionnaire was used to collect information regarding students' perceptions of their teeth and satisfaction with their dental appearance. Data were entered in a computer program SPSS version 23.0 for analysis. Frequency distribution of different variables was generated, the association between variables was assessed by the Chi-square test, the *P* value was set at *P* < 0.05. **Results:** A total of 787 participants were included, of which 410 (52.9%) were female and the male/female ratio was 1:1.1. The age range was 15–21 years (mean 16.64 ± 1.35 years). Only 27% of the students perceived their dental appearance to be good. About 39% of the students were satisfied with their general dental appearance. There was a statistically significant association between students level of perception of their dental appearance and level of satisfaction with dental appearance. **Conclusion:** The level of self-perceived satisfaction with dental appearance was low among the study participants. The students' self-perceived dental appearance influenced their satisfaction with their dental appearance, unlike factors such as age and sex. Self-satisfaction with dental appearance had a significant impact on the social life of the participants.

**Keywords:** Dental appearance, satisfaction, Tanzania

### Introduction

Oral health is not only the absence of oral ailments and dysfunctions but also includes other components that influence a person's social life like satisfaction with dental appearance and beauty.<sup>[1]</sup> Good facial appearance and proper speech are integral components of an individual's personality that determine a person's self-esteem.<sup>[2-4]</sup> Self-dental perception originates from an internal assessment or the inner experience of an individual thus affecting his/her personality, self-esteem, career achievement, intellectual competencies, and physical domains of self-concepts.<sup>[5]</sup> Further, it has been found that in some societies children/individuals with normal dental appearance are judged as better looking, more desirable as friends, more intelligent, and less likely to behave aggressively.<sup>[6]</sup> Factors that influence the perception of dental appearance include

social, cultural, psychological, and personal factors.<sup>[7,8]</sup>

In situations where the individual's smile is impaired by dental diseases or any other reason, the result is often a loss of self-esteem and damage to overall physical and mental health.<sup>[9,10]</sup> In addition, the color of tooth, its position shape, size, quality of restorations (in anterior teeth), the general arrangement of teeth, visibility of teeth, and amount of gingival display are factors associated with satisfaction or dissatisfaction with dental appearance.<sup>[10-12]</sup>

Dissatisfaction with dental appearance is related to personal, social, and intellectual incompetence, social insecurity, and unsuccessful life outcome as compared to satisfaction with dental appearance.<sup>[3,13]</sup> The appearance and color of teeth are a common concern for patients across many populations and are associated with an increased desire for treatment to improve dental esthetics.<sup>[14]</sup>

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Protas Msungu,  
Matilda  
Mtaya-Mlangwa,  
Karpal Singh Sohal<sup>1</sup>

Departments of Orthodontics,  
Paedodontics and Community  
Dentistry, School of Dentistry,  
Muhimbili University of  
Health and Allied Sciences,  
<sup>1</sup>Department of Oral and  
Maxillofacial Surgery,  
Muhimbili University of Health  
and Allied Sciences, Dar es  
Salaam, Tanzania

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### Address for correspondence:

Dr. Karpal Singh Sohal,  
Department of Oral and  
Maxillofacial Surgery,  
Muhimbili University of Health  
and Allied Sciences,  
P. O. Box: 65014,  
Dar es Salaam, Tanzania.  
E-mail: [karpal@live.com](mailto:karpal@live.com)

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In the recent past, clinicians and researchers have shown an increased interest in the impact of oral health and disease, dental appearance, malocclusion, and treatment for these conditions on psychological and functional wellbeing.<sup>[15-17]</sup> So far, there exist major differences among populations on the perception of dental appearance and about its importance.<sup>[18]</sup> As economic and social changes occur so do patterns of oral health concerns,<sup>[19]</sup> thus, collection of data addressing dental satisfaction can provide evidence-based guidance to determine the trend of improvement of oral health status and the need of relevant corrective measures for dental conditions.

This study, therefore, aimed at determining the level of self-perceived satisfaction with dental appearance and associated factors among secondary school students in Kilolo district, Iringa Tanzania.

## Methods

This cross-sectional study was carried out in the Kilolo district of the Iringa region on the southern highlands of Tanzania between September and October 2017. The study involved students from four private and four government secondary schools. The sampling frame was a list of secondary schools from four wards in the Kilolo district. From each ward, one government and one private secondary schools were randomly selected by ballot method. This was followed by selecting classes, whereby form two and form four students were selected. All students from the selected classes were informed of the objectives and were requested to participate in the study. Students who agreed to participate were requested to sign a consent form. A self-administered structured questionnaire translated into Kiswahili was utilized. Information on participants' particulars (sex, age, class, and school), perceptions, and satisfaction with dental appearance were collected.

The section on the evaluation of perception had four questions inquiring about: The color and the size of the teeth and the shape and arrangement of anterior teeth. Each question had a three-point scale as follows: 1 = not good 2 = satisfactory, 3 = good. The perceived general appearance was considered good only when all four factors (size, shape, color, and arrangement of teeth) were perceived by the participants as good.

The section on satisfaction with dental appearance had three questions: The color of the teeth, arrangement, and shape of anterior teeth. Each question had two options as: 1 = satisfactory, 2 = not satisfactory. The overall satisfaction with dental appearance was considered satisfactory only when all three factors (shape, color, and arrangement of teeth) were satisfactory for the participant.

Data were entered in a computer program Statistical Package for the Social Sciences (SPSS) computer software version 23.0 (2015; IBM Corp., Armonk, NY, USA).

Frequency distribution of different variables was generated, the association between variables was assessed by the Chi-square test, whereby the *P* value was set at *P* < 0.05.

## Results

A total of 787 participants took part in this study, of which 377 (47.9%) were males and 410 (52.1%) females, with a male-to-female ratio of 1:1.1. The age range was 15–21 years with a mean of 16.64 ± 1.35 years. Slightly more than half (447, 56.8%) were from government schools [Table 1].

### Students' perception of their dental appearance

More than half of the participants perceived their teeth arrangement and shape to be good (64.9% and 64.5%, respectively). Tooth size and color were perceived as good by only 386 (49%) and 352 (44.7%) of the participants, respectively [Figure 1]. Slightly less than one third Few participants perceived their general dental appearance to be good (213, 27.1%). There was no statistically significant association between perceived general dental appearance and the sex as well as the age of the participants (*P* > 0.05), but there was a statistically significant relationship (*P* < 0.05) between perceived dental appearance as well as class and type of school of respondents [Table 2].

### Students' satisfaction with their dental appearance

Most (570, 72.4%) participants were satisfied with the arrangement of their teeth. Four hundred and twenty-eight students (54.4%) were satisfied with their tooth color, while 458 (58.2%) were satisfied with tooth shape. Overall, only 308 (39.1%) were satisfied with their general dental appearance. There was no statistically significant association between satisfaction with dental appearance and sex as well as the age of the students (*P* > 0.05). However, a statistically significant relationship (*P* < 0.05) between satisfaction with dental appearance and perceived dental appearance, class, as well as the type of school was found [Table 3]. The odds of participants to be satisfied with

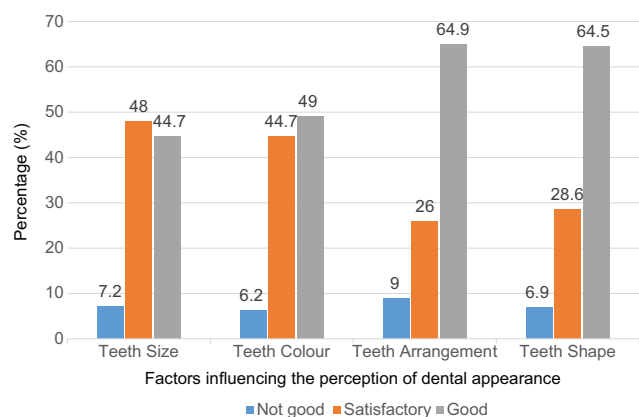


Figure 1: Percentage distribution of the participants according to factors influencing the perception of dental appearance

**Table 1: Distribution of study participants according to sociodemographic characteristics**

Sociodemographic characteristics	Type of school		
	Government schools (n=447), n (%)	Private schools (n=340), n (%)	All (n=787), n (%)
Age groups (years)			
≤17	331 (74.0)	252 (74.1)	583 (74.1)
>17	116 (26.0)	88 (25.9)	204 (25.9)
Sex			
Male	227 (50.8)	150 (44.1)	377 (47.9)
Female	220 (49.2)	190 (55.9)	410 (52.1)
Year of study			
Form II	266 (59.5)	147 (43.2)	413 (52.5)
Form IV	181 (40.5)	193 (56.8)	374 (47.5)

**Table 2: Association between sociodemographic characteristics of the participants and their perceived dental appearance**

Sociodemographic characteristic	Perceived general dental appearance		P
	Good (n=213), n (%)	Not good (n=574), n (%)	
Age groups (years)			
≤17	157 (26.9)	426 (73.1)	0.885
>17	56 (27.5)	148 (72.5)	
Sex			
Male	95 (25.2)	282 (74.8)	0.259
Female	118 (28.8)	292 (71.2)	
Year of study			
Form II	98 (23.7)	315 (76.3)	0.027
Form IV	115 (30.7)	259 (69.3)	
School			
Government	136 (30.4)	311 (69.6)	0.015
Private	77 (22.6)	263 (77.4)	

**Table 3: Association between satisfaction with their dental appearance and various associated factors**

Factors affecting satisfaction	Satisfaction with general dental appearance		P
	Satisfied (n=308), n (%)	Not satisfied (n=479), n (%)	
Age groups (years)			
≤17	218 (37.4)	365 (62.6)	0.09
>17	90 (44.1)	114 (55.9)	
Sex			
Male	148 (39.3)	229 (60.7)	0.947
Female	160 (39.0)	250 (61.0)	
Year of study			
Form II	146 (35.4)	267 (64.6)	0.022
Form IV	162 (43.3)	212 (56.7)	
School			
Government	191 (42.7)	256 (57.3)	0.018
Private	117 (34.4)	223 (65.6)	
Perceived appearance			
Not good	142 (24.7)	432 (75.3)	<0.001
Good	166 (77.9)	47 (22.1)	

their dental appearance was 11 folds higher among those who perceived their dental appearance was good compared

to those who perceived that their dental appearance was not good (odds ratios [OR] 10.7; 95% confidence interval [CI] 7.38–15.64,  $P < 0.001$ ).

One hundred and forty-four (18.3%) participants reported that their dental appearance had a negative effect on their social life. One hundred and eleven (23.2%) participants who were not satisfied with their dental appearance reported that their social life was affected negatively while only 33 (10.7%) who were satisfied with their dental appearance reported the same. There was a statistically significant relationship between satisfaction with dental appearance and social life ( $P < 0.001$ ). The chances of participants who were not satisfied with their dental appearance to have reported negative social effects were almost 3 folds higher compared to those who were satisfied (OR 2.5; 95% CI 1.65–3.82,  $P < 0.001$ ).

## Discussion

This study focused on the self-perception of dental appearance in a rather young section of the population with slightly more female than male participants. The age range was from 15 to 21 years with a mean of 16.64 (standard deviation 1.34), which is a stage in life when the youth are commonly sensitive to their appearance. In general, a rather low proportion (27.1%) of participants had a positive perception of their dental appearance. This is contrary to the findings from a previous study from Tanzania, Saudi Arabia, and Turkey which had reported a higher level of satisfaction.<sup>[20-22]</sup> The apparent differences in the proportions of satisfied participants could be attributable to the varying age range of participants used in the different studies.

Slightly more females than males expressed a positive perception of their dental appearance. However, this difference was not statistically significant, which is in agreement with studies from Nigeria, Turkey, and Sweden.<sup>[23-25]</sup> In concurrence with a study conducted in Rwanda<sup>[9]</sup> on the perception of dental appearance among secondary school students, in this study, there was no difference in perception of dental appearance between the age groups.

Only 39.1% of the participants in this study were satisfied with their general dental appearance, which is in agreement

with studies from Malaysia and Croatia<sup>[4,17]</sup> but, different to reports from Serbia, Turkey, and Israel<sup>[16,26,27]</sup> which reported higher levels of satisfaction. Different sampling methods, socio-cultural and economic variations in the populations that were studied might have influenced these differences.

In both males and females, the levels of satisfaction with dental appearance were rather low (about 39%) with the majority reporting dissatisfaction. Other studies, however, have reported significantly higher levels of dissatisfaction with the dental appearance in females compared to males.<sup>[4,16,28]</sup>

Similar to the findings of Meng *et al.*,<sup>[29]</sup> in this study, there were slightly more participants in the older age group ( $\geq 17$ ) who were satisfied with general dental appearance compared to the younger, however, the difference noted was not statistically significant. This is in concurrence with Strajnić *et al.*<sup>[26]</sup> who reported that age does not necessarily influence satisfaction with dental appearance.

The current study included respondents from both public and private schools. Students attending private schools can be considered to be in a better social-economic situation than the majority of those in public schools.<sup>[30]</sup> Individuals with higher social economic status are usually considered to be more concerned with aesthetics than the ones at lower levels.<sup>[31]</sup> In congruency with this, but contrary to a study by Boeira *et al.*,<sup>[30]</sup> in this study respondents from private schools were found to be more dissatisfied with general dental appearance. This could reflect exposure to social media and an underlying desire for improvement of their appearance which has not yet been met.

More students in form four (a higher class) responded that they were satisfied with their general dental appearance compared to those who were in form two (lower class). This suggests that the acquisition of self-confidence in one's dental appearance and self-esteem might be influenced by a more advanced social-environmental acquaintance.

Perception of the color of teeth is influenced by factors such as the optical properties of teeth, lighting conditions, and the viewer's visual experience.<sup>[32]</sup> Less than half (49%) of the participants were satisfied with their teeth color, which is in line with findings of studies from other countries.<sup>[4,33,34]</sup> Though, facial attractiveness is shown to be independent of the color of teeth and does not correlate positively with satisfaction with dental appearance.<sup>[35]</sup> It is commonly thought that females are more interested in their appearance than males. However, in agreement with earlier studies,<sup>[27,33]</sup> the current study found that there was no statistically significant difference between sexes on satisfaction with teeth color. This finding is contrary to what was reported elsewhere.<sup>[4,16]</sup>

Only 44% of the participants reported being satisfied with the size of their teeth. Some studies have reported tooth

size as a dental appearance attractive feature.<sup>[25,36,37]</sup> Also, the size of teeth has been considered as a critical factor in the self-perception of smile attractiveness.<sup>[10]</sup>

In the current study, it was observed that the odds of participants being satisfied with their dental appearance was 11 folds higher among those who perceived to have good dental appearance compared to those who perceived that their dental appearance was not good. Likewise, the chances of participants who were not satisfied with their dental appearance to reported negative social effects were almost 3 folds higher. This may be considered to indicate that the majority of secondary school students who participated in this study are negatively affected by their perceived dental appearance, subsequently their self-esteem being affected.

## Conclusion

The level of self-perceived satisfaction with dental appearance was low among the study participants. The self-perceived dental appearance influenced the satisfaction with the dental appearance among the participants, unlike factors like age and sex. Self-satisfaction with dental appearance had a significant impact on the social life of the participants.

## Recommendations

There is a need to conduct further studies that will include an oral examination to assess the state of the teeth of the students objectively. This would show whether the perceived need for the preferred treatment options matches with the existing situation.

## Ethical clearance

Ethical clearance was obtained from the MUHAS Institution Review Board, and permission to conduct the study was obtained from the appropriate authorities of different schools.

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Nil.

## Conflicts of interest

There are no conflicts of interest.

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