

Effects of dental aesthetics on psycho-social wellbeing among students of health sciences

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Abstract

Objective: To determine the effects of dental aesthetics and socio-demographics on psychosocial well-being among students of health sciences.

Methods: The analytical cross-sectional study was conducted at a private tertiary care health centre in Karachi from March to August 2018, and comprised medical, dental and pharmacy students. Data was collected using a structured adapted questionnaire comprising Psychosocial Impact of Dental Aesthetics Questionnaire and Aesthetic Component of Index of Orthodontic Treatment Need which was graded from group 1 to group 5. Data was analysed using SPSS 22.

Results: Of the 385 subjects, 122(31.7%) were males and 263(68.3%) were females. The overall mean age was 20.6±1.70 years. There were 177(46%) medical students, 125(32.5%) dental and 83(21.6%) pharmacy undergraduates. Dental aesthetics concern and social impact factors were significantly different between the genders ($p<0.05$). The two factors were also significantly different with respect to years of study ($p<0.05$). Significant difference was observed between aesthetic concern and age ($p<0.05$). Dental self-confidence the highest in group 1 with a mean of 2.6±1.02, and the lowest in group 5 with a mean of 2.0±1.16 of Aesthetic Component of Index of Orthodontic Treatment Need.

Conclusion: The psycho-social life was affected by poor dental aesthetics, indicating that dental therapy and cosmetic treatments had an influence over psychological well-being of individuals.

Keywords: Dental aesthetics, Index of orthodontic treatment need, Psychosocial impact and mental health. (JPMA 70: 1002; 2020)

Introduction

Health plays a significant role in person's everyday life. Psycho-socially wellness serves as an integral part of general health and it should not be compromised because of bad dental aesthetics. Severely compromised aesthetics is a predictor of worst oral health quality of life.¹ Smile and emotional expression plays a primary role in dental aesthetics.²

Dental aesthetic perceptions are found to be a prime factor in the development of a personality.³ In young adults, even slight deviation from the community norms results in lack of self-esteem related to appearance and considering others 'superior' to themselves. This results in a negative impact on their quality of life.^{3,4} To build a strong professional profile, self-confidence plays an important role in person's life. It also relates to the health and helps experiencing an achievement.⁵

Globally, much research work has been done on dental aesthetics and psychosocial impact and factors like age,

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gender and educational level also contribute in people's satisfaction towards dental aesthetics.⁶⁻⁹ Evidence has reported self-esteem as the vital component in aesthetics despite the importance of psychosocial impact. Although, men showed higher level of perfectionism than women however, women present with greater psychosocial impact than men.⁵ A study conducted by Cotrim ER *et al* in which they highlighted the perception of smile aesthetics among clinicians, orthodontists, dental students, and lay persons.¹⁰ Another study by Al Bataynh *et al.* reported that dental students showed higher knowledge of aesthetics compared to their other counterparts from other universities.¹¹ Thus, it is concluded that awareness is a major factor which affects the judgment and perception of observer.¹²

Another study conducted in Malaysian population reported that females were more dissatisfied than males about their dentition status.¹³ According to a study in Kuwait, dental aesthetics among the patients was highly important considering tooth alignment as a major factor and tooth color as a secondary factor in dental aesthetics.¹⁴

Literature suggests that there is a strong association between self-perceived need regarding dental aesthetics

and psychosocial wellbeing.³ Since the last decade, aesthetics has gained more importance than function and general and /or oral health. Patients have become more aware of dental aesthetics and are seeking treatment to achieve their idea of ideal aesthetics. Seeing as there are so many factors that influence a smile, perception of aesthetics needs more exploration. Dental health is not given priority in comparison to overall well-being of a person due to cost of treatment, fear, anxiety and lack of oral hygiene importance in our society. Therefore, the aim of the present study was to determine the impact of dental aesthetics and socio-demographics on psychosocial well-being among the students of health sciences.

Subjects and Methods

The analytical cross-sectional study was conducted at a private tertiary care health centre in Karachi from March to August 2018, and comprised medical, dental and pharmacy students. The sample size was calculated by using OpenEpi software, assuming the prevalence of impact of dental aesthetics on psychosocial well-being 50%, with 95% confidence interval (CI) and a bound of error 5%.¹⁵ The sample was raised using non-probability convenience sampling method. Those included were students regardless of gender and year of study aged 18-25 years who were present at the time of the study and who furnished informed written consent. Those excluded were students having prior orthodontic treatment and students undergoing current orthodontic treatment. Approval to conduct the study was taken from Principal Dental College.

Data was collected using a structured adapted questionnaire composed of the Psychosocial Impact of Dental Aesthetics Questionnaire (PIDAQ) which has four components; self-confidence, social impact, psychosocial impact and aesthetic concerns.⁴

Dental self-confidence was further explored through closed-ended questions regarding the appearance of teeth, tooth position and showing teeth while smiling. Social impact was assessed by perception of the subjects about their own teeth and how their everyday social life was affected by dentition. The third section of the questionnaire comprised subjects' comparison of their dentition with others. Aesthetic concern was assessed through questions based on attitude of subjects disliking their teeth in mirror and pictures.

The Index of Orthodontic Treatment Need-Aesthetic Component (IOTN-AC) was also used to assess dental aesthetics by showing 10 photographs of anterior teeth malocclusion to the subjects who were subsequently

asked to match their own dentition with any one of the photograph; from grade 1 'the best' to 10 'the worst'.⁴ After the grading, the subjects were divided into five groups based on IOTN grading; groups 1,2,3,4 and group 5 which comprised grades 5-10.

The data was collected during the study hours and on the campus. Data was analysed using SPSS 22. Quantitative data was expressed as means and standard deviation (SD) and qualitative data in terms of percentages and frequencies. Kolmogorov-Smirnov test was applied to check the normality of data, which was found to be not normally distributed ($p < 0.05$), and, as such, non-parametric tests were applied for analysis. Mann-Whitney U Test was applied between gender and each of the four components separately. Kruskal-Wallis test was used to determine differences between the four components of PIDAQ and the year of education. The same test was applied between the PIDAQ components and the discipline of studies and for determining the difference among the mean scores of all the participating groups with dental self-confidence, social impact and psychosocial impact. $P < 0.05$ was taken as statistically significant.

Results

Of the 400 subjects approached, 385(96.25%) subjects responded. Of them, 122(31.7%) were males and 263(68.3%) were females. The overall mean age was 20.6 ± 1.70 years. There were 177(46%) medical students,

Table-1: Demographic characteristics of study population.

Variables	Frequency % (n=385)
Age	
15-20 years	55.7% (219)
21-30 years	42.5% (166)
Gender	
Male	31.7% (122)
Female	68.3% (263)
Department	
MBBS	46% (177)
BDS	32.5% (125)
D.PHARM	21.6% (83)
Year of Study	
1st Year	35.8% (138)
2nd Year	29.1% (112)
3rd Year	28.8% (111)
4th Year	6.2% (24)
IOTN Grading	
Group 1	33.8% (130)
Group 2	18.4% (71)
Group 3	23.4% (90)
Group 4	9.6% (37)
Group 5	14.8% (57)

Table-2: Impact of dental aesthetics and sociodemographics on psychosocial well-being.

Variables	Dental self-confidence	Social impact	Psychosocial Impact	Aesthetic concern
Gender*	0.47	0.02	0.13	0.04
Age*	0.41	0.05	0.16	0.03
Year of education**	0.26	<0.001	0.53	0.01
Department**	0.13	0.52	0.05	0.11
Mean score of IOTN based groups**	0.001	0.000	0.003	0.02

*Mann-Whitney U test.

**Kruskal Wallis test.

P value < 0.05 is considered statistically significant.

PIDAQ: Psychosocial Impact of Dental Aesthetics Questionnaire.

IOTN-AC: Index of orthodontic treatment need-Aesthetic component.

125(32.5%) dental and 83(21.6%) pharmacy undergraduates. Regarding IOTN-AC, 130(33.8%) students graded themselves in group 1, 71(18.4%) in group 2, 90(23.4%) in group 3, 37(9.6%) in group 4, and 57(14.8%) marked themselves in group 5 (Table-1).

Dental aesthetics concern and social impact factors were significantly different between the genders ($p < 0.05$). The two factors were also significantly different with respect to years of study ($p < 0.05$). Significant difference was observed between aesthetic concern and age ($p < 0.05$). Dental self-confidence was the highest in IOTN-AC group 1 with a mean of 2.6 ± 1.02 , and the lowest in group 5 with a mean of 2.0 ± 1.16 (Table-2).

Discussion

According to the findings, dental aesthetics and social impact factor were statistically significant among gender and study subjects from different years of study, varying from the first to the final year. Gender was statistically associated with social impact and aesthetic concerns. These findings are in accordance with earlier findings that generally females are more beauty conscious.¹⁶⁻¹⁸ A study also found lower psychosocial impact of dental aesthetics in men and difference between genders was not significant.¹⁶ However, a study reported no gender difference between males and females on mean dental aesthetic perception score.¹⁹

Straight aligned teeth and pleasing smile add more attraction which indirectly raises a person's confidence which, in turn, raises more chance to get employed first in comparison to people with non-ideal smile.²⁰

In the current study, the academic year was statistically significant with social impact and aesthetic concerns. These findings were in agreement with literature suggesting that the reason may be because of advancing knowledge and clinical exposure, the students become more concerned.²¹

The present study also found significant differences in the years of studies, and the findings are in accordance with a study indicating that it may be because of increasing knowledge and experience gained that the students think more critically with every advancing year of studies.¹⁹ Also, our study showed that students in IOTN group 1 had highest dental self-confidence and the least psycho-social impact whereas IOTN group 5 had the least dental self-confidence and the highest psycho-social impact. These findings are also in accordance with an earlier study.⁴

The current study also found no significant results separating medical, dental and pharmacy students. Similarly, an earlier study concluded that there was no difference between clinicians and lay-persons when it came to smile evaluation.²² One study reported that dental education was less influential in judging dental aesthetics.²³ The reason for statistically non-significant difference among the three departments was probably the fact that all the students were from higher socio-economic background and were already aware about their physical appearance and aesthetics.

As such, this fact itself was a limitation of the study as all the subjects were from a single centre and that too a private tertiary care facility catering to people from high socio-economic strata. And since they are more conscious, the subjects tended to critically analyse themselves in every aspect, and that might be the reason behind the fact that only one-fourth of the students ranked themselves in IOTN grade 1. Another limitation of the study is this that dental students were not excluded from the sample which might have introduced a bias in the results. However, a study has reported that dental education plays a lesser role in critically evaluating dental aesthetics.²⁴

Conclusion

Dental aesthetics was found to affect the psychological well-being of the subjects. Cosmetic treatments used to

increase dental aesthetics will motivate individuals to interact freely with others and it will enhance their social status.

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Conflict of Interest: None.

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