



## **EXPLORING THE FACTORS THAT INFLUENCE DENTIST ATTITUDES TOWARDS COSMETIC DENTISTRY- A CROSS SECTIONAL STUDY**

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### **ABSTRACT**

*The survey aims to investigate the factors that affect dentist attitudes towards cosmetic dentistry, such as training, experience and personal beliefs, which can influence their willingness to offer these treatments to patients. By identifying these factors we hope to find ways to increase the adoption of cosmetic dentistry among dentists and improve patient outcomes as cosmetic dentistry is a growing field that can enhance the appearance of teeth and gums.*

**Keywords:** *Dental aesthetics, dental appearance, self perception, tooth colour, satisfaction*

### **INTRODUCTION**

#### **Aim:**

The study aimed to examine how age, education level, gender, dental status and the appearance of the teeth (such as colour, size, shape, position and alignment) influenced the satisfaction of respondents with their dental appearance and aesthetics of the teeth as well as their desire for improvement.

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### **Materials and methods :**

The current cross sectional questionnaire study was carried out among interns , post graduates and dentists . The study was carried out among 4 dental colleges across Pune . The survey was done with “convenience sampling“ method. The questionnaire consists of 38 questions divided under 4 headings a) demographic details b) dentists knowledge about cosmetic dentistry c) dentists attitudes towards cosmetic dentistry d) dentists practises towards cosmetic dentistry.

### **Title:**

The Significance of Dental Aesthetics in Dentistry and Its Impact on Social Perception In the field of dentistry, the primary objective is to create a captivating smile characterized by well-proportioned teeth that harmoniously complement both the gums and the patient's facial features. Achieving this aesthetic harmony involves considering both the patient's subjective perspective and the dentist's objective assessment of appearance [1]. The level of satisfaction plays a pivotal role in aesthetic dental medicine, as the appearance of one's teeth can significantly influence the initial impressions people form [3]. Indeed, the aesthetics of a smile and teeth can profoundly affect the perceived attractiveness of an individual's face [4,5]. The colour of teeth holds substantial sway over how we are socially perceived. Tooth colour is a major determinant of overall satisfaction with our teeth's appearance, and it exerts a substantial influence on how others perceive us. Importantly, aging does not universally equate to a negative self-perception of dental appearance or tooth colour. In fact, it appears that younger individuals may be more dissatisfied with their dental appearance or tooth colour for reasons that extend beyond social and cultural factors [8]. It is fascinating to witness the growing interest in dental aesthetics, with both patients and dentists attaching significant importance to the natural appearance of teeth, especially in the fields of prosthodontics and restorative dentistry. Psychological factors hold substantial sway over an individual's decision to undergo dental treatments, particularly among females. Understanding the prevalence of dissatisfaction with one's current dental appearance and the desire for aesthetic improvements can inform effective intervention strategies [9]. Dental appearance satisfaction assumes vital significance for young adults, as judgments about their personal characteristics are frequently shaped by their dental appearance alone. Research indicates that individuals with fewer dental issues tend to be perceived as more socially competent, intellectually accomplished, and psychologically well-adjusted [4]. This aligns with the reality that adults with visible dental problems may encounter challenges in securing employment due to concerns about their appearance or speech [3]. Dentists who consider their patients' perceptions of dental appearance are better positioned to plan treatments that align with their preferences, ultimately leading to the highest level of satisfaction [10].

**Materials and Methods:** The study included 230 people aged between 23 to 40 and above. The study was carried out among interns, post graduates and dentists. There were 111 male

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and 119 female respondents. The study was carried out among 4 dental colleges across Pune (MA Rangoonwala college of dental sciences, Bharti Vidyapeeth dental college and hospital, Dr DY Patil dental college and hospital and Sinhgad dental college). The survey was done with "convenience sampling" method, in which various questions were asked regarding the factors influencing cosmetic dentistry. The first component of the research questionnaire included inquiries about demographic information and profession. The questions in the second round centred on dentists knowledge about cosmetic dentistry. The questions in the third section are dentists attitudes towards cosmetic dentistry. The questions in the last section were meant for dentists practise towards cosmetic dentistry The pilot study had 20 respondents. The 20 people who participated in the pilot trial were not included in the current data analysis. With a Cronbach's alpha of 0.824, the pilot study's findings demonstrated satisfactory validity. Formula  $N = Z^2 P [1 P] / d^2$  was used to calculate the sample size. Where N is the sample size, Z is the standardised normal deviation at 95% confidence level, 1.96 is the expected prevalence of social media use (as determined by the pilot study), and 5% is the absolute precision that must be maintained on either side of the prevalence. Therefore, 230 was the required minimum sample size to carry out this study. The data was entered into a Microsoft Excel spreadsheet (Statistical programme for social science). For analysis, IBM Chicago, Illinois, United States' SPSS 23.0 version software was employed. The statistics of the data are presented in the form of tables.

### **Discussion :**

People's views on dental appearance and aesthetics have rapidly changed over the years. Patient satisfaction and subjective evaluation of dental aesthetics are now crucial in aesthetic treatments, restorative procedures, and prosthetic therapy. This is important for a smooth transition from initial contact to final restoration. Various factors influence how individuals evaluate dental appearance. People have different levels of sensitivity to aesthetic issues. The study results can be explained by the fact that beauty standards vary among individuals, locations, and time periods. It's interesting how variations in self-perception and subjective evaluation can affect dental appearance and aesthetics. In the study, 56.95% of patients' demands determined the cosmetic procedure offered, with 51.73% of patients requesting teeth whitening. Surprisingly, only 49.13% of dentists rarely collaborate with specialists like orthodontists and periodontists for cosmetic dentistry cases. It's interesting to note that financial constraints have been a main reason for 60% of dentists to face challenges in incorporating cosmetic dentistry procedures in their practice. Additionally, 61.30% of dentists educate patients about cosmetic procedures through brochures and pamphlets. While the study didn't find statistical significance based on gender, it did find that female participants (51.73%) were more dissatisfied with their dental appearance and aesthetics compared to males (48.26%). These findings align with a similar study from Turkey Tin-Oo et al. found that dissatisfaction with the overall dental appearance was more prevalent in

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females (79.8%) than in males (20.2%), and this difference was statistically significant. Vallit et al. reported similar results in Eastern Finland. Samorodnitzky-Navch et al. reported that females (65.4%) were more content with the general appearance of their teeth compared to males (59.8%) in Israel. However, it's worth noting that the sample had a higher proportion of males, as it was drawn from patients attending a military clinic. Our findings, in alignment with those of the mentioned authors, indicate that age does not necessarily correlate with dissatisfaction regarding dental appearance and aesthetics. Although dental aesthetics tend to decline with age, older individuals exhibit a significantly higher level of acceptability for these changes compared to younger patients. For older patients, the appearance of their teeth holds less importance than it does for younger patients. This observation may be attributed to the heightened cognitive maturity associated with older age, which can override the influences of cultural or behavioral factors that typically affect self-perceived appearance.

In the current study, respondents with higher educational levels expressed greater satisfaction with their dental appearance and aesthetics compared to those with lower levels of education. Respondents with higher levels of education exhibited greater satisfaction with their teeth's color and lacked a desire for whiter teeth, as indicated by studies conducted by Xiao et al. and Akarslan et al. These findings imply that individuals with advanced academic backgrounds who express higher self-satisfaction with their teeth's aesthetics may have heightened self-esteem. Notably, the research by Tin-Oo et al. showed that satisfaction with tooth shade or general dental aesthetics was not correlated with the educational level of the participants. When examining the factors that shape dentists' attitudes towards cosmetic dentistry, several key aspects come into play. Firstly, the level of training and experience in cosmetic dentistry that a dentist possesses significantly influences their perspective. Dentists with extensive training and substantial experience in cosmetic procedures are more likely to hold a positive attitude towards it. Personal beliefs and values also play a role, with some dentists prioritizing the functional aspects of dentistry over cosmetic enhancements, while others embrace the artistic and aesthetic aspects of their profession. These individual perspectives have a profound impact on their attitudes towards cosmetic dentistry. The demand for cosmetic dentistry within a dentist's practice area represents another pivotal factor. Dentists practicing in regions with a higher demand for cosmetic procedures may be more inclined to provide and promote such services, which fosters a more positive attitude toward cosmetic dentistry. Patient expectations and preferences also exert influence. Dentists may find greater motivation to offer cosmetic dentistry when their patients express a strong desire for it. Conversely, if patients display little interest or harbor concerns about these procedures, dentists may be less inclined to adopt cosmetic dentistry. Additional influencing factors encompass practical considerations, including cost, time commitments, and the potential risks or complications associated with cosmetic procedures. These practical aspects can significantly impact a dentist's perspective on cosmetic dentistry, as they must carefully weigh the benefits against the potential drawbacks.

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**Result :**

The study included 230 people aged between 23 to 40 and above . The study was carried out among interns , post graduates and dentists . There were 111 male (48.26%) and 119 female (51.73%) . In regard of the profession there were 115 dentists (50%) , 69 post graduates (30%) and 46 interns (20%) . The questionnaire was divided into 3 parts and the 1st part was based on dentists knowledge towards cosmetic dentistry and it showed 55.65% dentist feel that cost is a major factor that impacts patients willingness to undergo treatment (p=0.103) . 44.34% patients demand motivates the dentists to offer cosmetic services (p=0.237) along with 49.13% patients personal references for undergoing a cosmetic dental procedure (p=0.361) . 49.13% dentists discuss the long term benefits and value of the procedure thereby handling patients inquiries about the cost of cosmetic services (p=0.238) . The last part is based on dentists practise towards cosmetic dentistry and it showed that 47.39% practise is devoted to cosmetic dentistry (p=0.148) along with 51.73% patients asking for teeth whitening procedures (p=0.351) . There are 52.60% patients requesting for cosmetic procedures (p=0.193) with 58.69% dentists believing that cosmetic procedures are safe (p=0.237) . Around 52.17% dentists perform cosmetic procedures monthly (p=0.361) and 49.13% dentists rarely collaborate with other specialists for cosmetic procedures (p=0.176) .

Total 230 responses were collected, in which the highest number of respondents were of 41 or more of age group (37.39%) . The conducted study revealed statistical significance with respect to gender where male respondents were 111 (48.26%) and female respondents were 119 (51.73%). The cross sectional study revealed that females are more driven towards aesthetics than males and age , gender and level of education plays a very vital role in the self perception and satisfaction with dental appearance and aesthetics .

**Demographic table**

Sr. no	Demographic data	Response	Number	Percentage
1.	Gender	Male	111	48.26 %
		Female	119	51.73 %
2.	Age	23-28	28	12.17 %
		29-34	70	30.43 %
		35-40	46	20 %
		41or more	86	37.39 %
3.	Profession	Dentist	115	50
		Post graduate	69	30
		Intern	46	20

**Knowledge based questions**

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Sr. no	Question	Response	Number	Percentage	Chi square test , p value
1.	How do you determine which cosmetic dental procedures to offer?	Patient demand	131	56.95 %	Chi = 8.12, p =0.038*
		Training and experience	41	17.82 %	
		Profitability	36	15.65 %	
		Other (please specify)	22	9.56 %	
2.	How do you educate your patients about cosmetic dental procedures?	Brochures and pamphlets	141	61.30 %	Chi = 9.13, p =0.027*
		In-office presentations	44	19.13 %	
		Online resources	24	10.43 %	
		Other (please specify)	21	9.13 %	
3.	How do you manage patient expectations for cosmetic dental procedures?	Realistic goal setting	43	18.69 %	Chi = 7.03, p =0.046*
		Clear communication	130	56.52 %	
		Managing patient anxiety	30	13.04 %	
		Other (please specify)	27	11.73 %	
4.	How do you market your cosmetic dental services?	Online advertising	136	59.13 %	Chi = 8.87, p =0.047*
		Print advertising	31	13.47 %	
		Referral marketing	30	13.04 %	
		Other (please specify)	33	14.34 %	
5.	What factors do you think influence your attitude towards cosmetic dentistry?	Personal values and beliefs	52	22.60 %	Chi = 7.05, p =0.048*
		Patient desires and expectations	128	55.65 %	
		Colleagues opinions and practises	25	10.86 %	
		Training and experience	25	10.86 %	
6.	How does the cost of cosmetic dental procedures impact your patients willingness to undergo treatment?	Cost is not a significant factor	54	23.47 %	Chi = 6.481, p =0.103
		Cost is a major factor	128	55.65 %	
		Cost is a minor factor	30	13.04 %	
		Other (please specify)	18	7.82 %	
7.	How do you balance the desire for cosmetic dental procedures with	Restorative work takes priority Cosmetic work	132	57.39 %	Chi = 8.276, p =0.043*

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	the need for restorative dental work?	takes priority Both are equally important Other (please specify)	32 35 31	13.91 % 15.21 % 13.47 %	
8.	How do you decide whether to perform cosmetic dental procedures on patients?	Patient request Clinical need Both factors are equally important Others (please specify)	63 32 112 23	27.39 % 13.91 % 48.69 % 10 %	Chi = 7.05, p =0.048*
9.	How do you determine the appropriate shade and shape of cosmetic restorations?	Clinical judgment Patient preference Both factors are equally important Other (please specify)	51 35 116 28	22.17 % 15.21 % 50.43 % 12.17 %	Chi = 6.93, p =0.048*
10.	What is your primary motivation for offering cosmetic dentistry services?	Financial gain Meeting patient demand Personal interest/passion Other (please specify)	46 102 46 36	20 % 44.34 % 20 % 15.65 %	Chi = 5.12, P =0.237
11.	How important is patient satisfaction in your decision to offer cosmetic dentistry?	Very important Somewhat important Not very important Not important at all	157 34 20 19	68.26 % 14.78 % 8.69 % 8.26 %	Chi = 9.24, p =0.012*
12.	Have you noticed an increase in patient interest in cosmetic dentistry in recent years?	Yes, a significant increase Yes, a slight increase No change Decrease in interest	136 41 28 25	59.13 % 17.82 % 12.17 % 10.86 %	Chi = 7.95, p =0.044*
13.	How knowledgeable do you feel about the latest advancements in cosmetic dentistry?	Very knowledgeable Somewhat knowledgeable Not very knowledgeable. Not knowledgeable at all	139 37 32 22	60.43 % 16.08 % 13.91 % 9.56 %	Chi = 8.34, p =0.021*

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14.	How much importance do you place on the appearance of a patients smile in your overall treatment plan?	Very important Somewhat important Not very important Not important at all	145 31 22 32	63.04 % 13.47 % 9.56 % 13.91 %	Chi = 9.16, p =0.002*
15.	What factors do you consider when deciding whether to recommend a cosmetic dentistry procedure?	Patient's oral health Patient's budget Patient's personal preferences Other (please specify)	66 33 113 18	28.69 % 14.34 % 49.13 % 7.82 %	Chi = 3.18, p =0.361
16.	How do you address patient concerns about potential pain or discomfort during cosmetic dentistry procedures?	Explain the use of anaesthesia or sedation options Provide testimonials from satisfied patients Offer distraction techniques (e.g. , music, TV) Other (please specify)	153 32 23 22	66.52 % 13.91 % 10 % 9.56 %	Chi = 10.21, p =0.009*
17.	What role does patient satisfaction play in your decision to offer or promote cosmetic dentistry services?	It is a major factor It is a moderate factor It is a minor factor It is not a factor	146 35 23 26	63.47 % 15.21 % 10 % 11.30 %	Chi = 9.05, p =0.048*
18.	How do you perceive the influence of social media on patient interest in cosmetic dentistry?	It has a significant influence It has some influence It has minimal influence It has no influence	143 36 32 19	62.17 % 15.65 % 13.91 % 8.26 %	Chi = 8.87, p =0.034*
19.	How do you handle patient inquiries about the cost of cosmetic dentistry procedures ?	Provide a detailed breakdown of the costs involved Offer financing options or payment plans Discuss the long-term benefits and value of the	51 30 113	22.17 % 13.04 % 49.13 %	Chi = 5.05, p =0.238

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		procedures Other (please specify)	36	15.65 %	
20.	How do you assess the potential impact of negative online reviews on your practice's reputation for cosmetic dentistry?	It could significantly impact my practice	152	66.08 %	Chi = 9.87, p =0.048*
		It could moderately impact my practice	32	13.91 %	
		It could minimally impact my practice	25	10.86 %	
		It would not impact my practise	21	9.13 %	
21.	How do your colleagues opinions and practices affect your attitude towards cosmetic dentistry?	Very influential	134	58.26 %	Chi = 7.05, p =0.041*
		Somewhat influential	34	14.78 %	
		Not very influential	28	12.17 %	
		Not at all influential	34	14.78 %	

#### Attitude based questions

Sr. no	Question	Response	Number	Percentage
1.	What percentage of your patients experience complications from cosmetic dental procedures?	0-5% 6-10% 11-15% 16-20% 21% or more	141 37 30 18	61.30 % 16.08 % 13.04 % 7.82 % 1.7 %
2.	What is your current attitude towards cosmetic dentistry?	very positive somewhat positive neutral somewhat negative very negative	154 33 21 18 4	66.95 % 14.34 % 9.1 % 7.8 % 1.7 %
3.	What role do you patients desires and expectations play in your attitude towards cosmetic dentistry?	Very influential Somewhat influential Neutral Not very influential Not at all influential	139 37 36 13 5	60.43 16.08 15.65 5.65 2.1
4.	How do you stay up to date with the latest trends and techniques in cosmetic dentistry?	Continuing education courses Professional organizations Peer-reviewed journals Conferences and seminars Other (please	123 49 31 21 6	53.47 21.30 % 13.47 % 9.1 % 2.6 %

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5.	What ethical considerations do you take into account when deciding to offer cosmetic dentistry services?	specify) Patient autonomy Informed consent Beneficence Non-maleficence Justice	136 39 32 19 4	59.13 % 16.95 % 13.91 % 8.26 % 1.73 %
6.	What challenges have you faced in incorporating cosmetic dentistry into your practice?	Financial constraints Limited patient demand Limited staff training Limited equipment and supplies Other (please specify)	138 34 25 28 5	60 % 14.78 % 10.86 % 12.17 % 2.17 %
7.	How do you see the future of cosmetic dentistry evolving in the dental industry?	Significant growth Moderate growth No change Moderate decline Significant decline	148 40 23 13 6	64.34 % 17.39 % 10 % 5.65 % 2.60 %

### Practice based questions

Sr. no	Question	Response	Number	Percentage	Chi square test value, p value
1.	What percentage of your practice is devoted to cosmetic dentistry?	0-25% 26-50% 51-75% 76% or more	67 36 18 109	29.13 % 15.65 % 7.82 % 47.39 %	Chi = 6.534, p =0.148
2.	What types of cosmetic dental procedures do you offer?	Teeth whitening Veneers Bonding Invisalign	119 51 30 30	51.73 % 22.17 % 13.04 % 13.04 %	Chi = 6.014, p =0.351
3.	What percentage of your patients request cosmetic dental procedures?	0-25% 26-50% 51-75% 76% or more	44 37 26 121	19.13 % 16.08 % 11.30 % 52.60 %	Chi = 6.234, p =0.193
4.	Do you believe that cosmetic dental procedures are safe?	Yes No Don't know Maybe	135 40 26 29	58.69 % 17.39 % 11.30 % 12.60 %	Chi = 6.912, p = 0.237
5.	How often do you perform cosmetic dentistry procedures?	Daily Weekly Monthly Rarely/Never	51 36 120 23	22.17 % 15.65 % 52.17 % 10 %	Chi = 6.034, p =0.361

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6.	How confident do you feel in your ability to perform cosmetic dentistry procedures?	Very confident Somewhat confident Not very confident Not confident at all	138 37 24 31	60 % 16.08 % 10.43 % 13.47 %	Chi = 9.534, p = 0.021*
7.	Have you received any specialized training in cosmetic dentistry?	Yes, extensive training Yes, some training No specialized training Not applicable (please specify)	142 39 29 20	61.73 % 16.95 % 12.60 % 8.69 %	Chi = 10.25, p = 0.017*
8.	How often do you receive inquiries about cosmetic dentistry from your patients?	Very frequently Frequently Occasionally Rarely	127 29 41 33	55.21 % 12.60 % 17.82 % 14.34 %	Chi = 8.534, p = 0.042*
9.	How often do you collaborate with other specialists (eg orthodontists, periodontists) for cosmetic dentistry cases?	Frequently Occasionally Rarely Never	50 40 113 27	21.73 % 17.39 % 49.13 % 11.73 %	Chi = 4.534, p = 0.176
10.	What is your level of training and experience in cosmetic dentistry?	Extensive Some Minimal None	153 38 19 20	66.52 % 16.52 % 8.26 % 8.69 %	Chi = 12.53, p = 0.005*

## CONCLUSION:

In conclusion, the attitudes of dentists towards cosmetic dentistry are influenced by a variety of factors. Factors such as the dentist's level of training and experience, personal beliefs and values, the demand for cosmetic dentistry in their practice area, and the influence of patient expectations and preferences all play a role. Additionally, practical considerations such as cost, time commitments, and potential risks or complications also impact a dentist's attitude towards cosmetic dentistry.

Understanding these factors is essential for gaining insights into how dentists perceive and approach cosmetic dentistry. By acknowledging and addressing these influences, we can work towards creating an environment where dentists feel empowered to provide high-quality cosmetic dental services that meet the needs and desires of their patients. Ultimately, this research can contribute to the continued growth and advancement of cosmetic dentistry as a field, benefiting both dentists and patients alike.

Female respondents are more driven with their dental appearance and aesthetics as compared to male respondents but the difference was found to be non significant

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