



Awareness about teeth whitening among young adults in south Indian population

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ABSTRACT

Dental esthetics affects how people value themselves and perceived by the society, and this may also impact the oral health-related quality of life. Peer groups play a key role in adult emotional stability and they place a high value on appearance under peer influences. The aim of this study is to explore the knowledge and awareness of teeth whitening among young adults. A cross sectional study was conducted among young adults using self-administered questionnaire to evaluate awareness, attitude and perception of teeth whitening. Data was collected through Google forms and statistical analysis was done. It was observed that 73.4% were aware of teeth whitening, 62.1% stated that teeth color did influence their social life and confidence. About 68.4% advocated that smoking leads to staining of teeth. Around 67.3% denied that brushing teeth for longer duration and harder cannot whiten the teeth. Regarding teeth whitening, 68.6% preferred to consult a dentist, 31.4% of participants preferred home remedy over consulting dentist. It was concluded that dental esthetics has a greater impact on psychological status. Brushing teeth and attitude towards consulting dentist shows that participants have good knowledge and awareness about tooth color. The dental advertisement also plays a significant role in tooth whitening. It helps the dentist to assess the patient's desires and increase the treatment success rate.

Keywords: Esthetics, Teeth Whitening, Brushing Teeth, Self-Confidence

1. INTRODUCTION

Dental factors are a significant prerequisite for the physical perception of an individual. Smiling plays an important role in social interaction. The question of whether beauty exists in nature is a philosophical problem.^[1]

Oral and general health depends on the dynamic integrity of various factors, including the individual's knowledge, attitude, and perceptions. Health behavior is defined as the activities taken by people to protect, promote, maintain health, and prevents disease^[2]. Esthetics reflects the lifestyle of individuals. Tooth color is the central characteristic that influences the overall facial appearance. Dental esthetics also enhances self-confidence.

Dental esthetics' deals with psychosocial impact and perceptual component which reflects the mental representation of the patient's dental appearance and displays the problems in social situations due to dissatisfaction of dental appearance. It shows the attitude and emotion to the teeth whitening and potential problems in a social situation.^[3]

Duval et al proposed a theory to study the evaluation of variation in physical appearance. He proposed that persons with a private tendency of self-awareness constantly monitor their feelings and thoughts which often leads them to exaggerate their emotions. On the contrary subjects with public self-awareness focus on social aspects of their behaviour and even tend to be more vulnerable to minor opinions of their physical appearance from the ideal norm.^[4]

The tooth contains the outer enamel and inner dentinal layer, which predominantly consists of inorganic content of 97% and 70%, respectively which is mostly of hydroxyapatite crystals. Hydroxyapatite crystals contain trace elements such as magnesium, fluoride, strontium, lead^[5] The color of the tooth is affected by both intrinsic and extrinsic stains^[6,7,8]. Intrinsic color is influenced

by how light is scattered and absorbed at the surface and within the structure of the tooth [9]. Extrinsic stains are influenced by the formation of the colored region within the acquired pellicle on the surface of enamel can be affected by poor brushing techniques, tobacco products, dietary intake of colored food, subject age, exposure to iron salts, and chlorhexidine [10,11,12]. The intensity of tobacco stains depends partly on the frequency and duration of the habit.

Dentistry traditionally has been concerned with the physical health of the mouth, but contemporary oral health includes concern about the esthetic appearance along with freedom from pathological conditions. It includes procedures like bleaching and laminate prosthesis; bleaching is a chemical agent that oxidizes organic pigments by application on the tooth which lightens the color of the tooth. [13]

Tooth bleaching can be vital and non-vital tooth bleaching; vital tooth bleaching is performed in vital teeth at home or in office. Non-vital tooth bleaching is performed in root-filled tooth achieved intracoronally or by combination procedures. The study aimed to evaluate the awareness and knowledge of teeth whitening procedures among young adults.

2. MATERIALS AND METHODOLOGY

A cross-sectional study was conducted among randomly selected young adults of the age range of 15-35 age in India. A total of 462 participants participated. Since this study was conducted during COVID -19 pandemic lockdown period, an online survey was conducted via Google forms which were further distributed to the participants through social media platforms like WhatsApp, Instagram, and Messenger and a note delineated the purpose of the study.

A self-administered and validated questionnaire of 22 questions written in English, comprised of demographic data, socioeconomic status, substantive questions exploring respondent's esthetic concern along with their perception and knowledge of cause and management of teeth whitening. No identifying information was included in the questionnaire, the questionnaire consisted of a combination of selected response to the questions and close-ended questions (yes/no). The questionnaire was framed to access awareness and knowledge about teeth whitening among young adults.

The study was conducted between 20th June 2020 to 6th July 2020. It took about 5- 10 minutes to complete the survey. Subsequently, the questionnaire was collected through google form and then analyzed using SPSS software.

3. RESULTS

3.1 Demographic Data

A cross-sectional study was conducted to assess esthetic concern among 462 young adults. The age of the participants ranged from 15 to 35 years, (Mean- 21.885) and standard deviation (+/-2.7675). Out of 462 participants 74% (n=342) were females and 26% (n=120) were males. Regarding their educational background, most of the participants 56% (n=261) were graduates. On evaluating familial income status 58 participants belong to the high-income category (1,26,360) among the study population.

Table 1: Distribution of study subjects according to demographic features

Question	Option	Frequency (n)	Percentage (%)
Occupation Of The Head Of The Family	Clerks	7	1.5
	Craft & Related Trade Workers	12	2.6
	Elementary Occupation	19	4.1
	Legislators, Senior Officials & Managers	21	4.5
	Plant & Machine Operators and Assemblers	8	1.7
	Skilled Agricultural & Fishery Workers	5	1.1
	Skilled Workers and Shop & Market Sales Workers	26	5.6
	Technicians and Associate Professionals	82	17.7
	Unemployed	13	2.8
Education Qualification Of Head Of The Family	B.COM	1	0.2
	BDS	1	0.2
	COLLEGE	2	0.4
	Graduates	261	56.5
	High School/Middle School/ Primary School Certificate	63	13.6
	Illiterate	8	1.7
	Intermediate or Diploma	61	13.2
	ITI	1	0.2
	Professional honour	62	13.4
	Student	1	0.2
Total monthly income Of The Family	<6,323	73	15.8
	>126,360	58	12.6
	18,953 - 31,589	59	12.8
	31,591 - 47,262	42	9.1
	43,266 - 63,178	79	17.1
	63,182 -126,356	88	19.8
	6327 -18,949	63	13.6

4.2 Esthetic Concern Among Young Adults

The participants were questioned with a set of 22 questions regarding their awareness, attitude, and perception of teeth whitening. According to the study, when we questioned them about their awareness of teeth whitening, 73.4% (339) of participants were affirmed that they were aware of teeth whitening. This shows participant's knowledge towards teeth whitening. When we questioned them that whether their tooth color influences their self-confidence in any way, 62.1% (287) were affirmed that their self-confidence and self-esteem were influenced by tooth color.

When they were questioned whether smoking lead to teeth staining, the majority of 68.4 % (316) of participants agreed that smoking lead to teeth staining, this shows that most of the participants were aware that smoking leads to teeth staining. On questioning whether consumption of soft drinks, tea, or coffee leads to tooth discoloration, 56.3% (260) agreed. When they were asked whether they believed that maintaining the tooth color was related to oral hygiene, 65.4% (302) of participants agreed.

When they were asked whether brushing hard can whiten their teeth, 67.3% (311) of participants asserted that brushing hard cannot whiten their teeth, when they were asked whether prolonged brushing can whiten their teeth, 68% (314) of participants agreed that brushing for longer duration cannot whiten their teeth.

Regarding home remedies, when they were asked whether they had tried any home remedies to whiten their teeth, 66.9% (309) of participants revealed that they had not tried any home remedies to whiten their teeth, among the participants, 12.8% (59) of participants who tried home remedies had experienced gum irritation. Regarding their treatment of choice for teeth whitening, 68.6% (317) preferred consulting dentists, while 31.4% (145) advocated home remedy for teeth whitening, this conveys that participants believe dentists more than home remedies regarding their teeth whitening.

Table 2: Distribution of study subjects according to their esthetic concern

Question	Option	Frequency (n)	Percentage (%)
Are you aware of teeth whitening?	YES	339	73.4
	NO	65	14.1
	MAY BE	58	12.6
Do you feel comfortable in facing people if your teeth are not white?	YES	130	28.1
	NO	263	56.9
	MAYBE	69	14.9
Does your teeth colour influence your self confidence in any way?	YES	287	62.1
	NO	84	18.2
	MAY BE	91	19.7
Had anyone suggested you whiten your teeth?	YES	128	27.7
	NO	334	72.3
While smiling, do u feel one or two teeth are darker than the rest?	YES	116	25.1
	NO	263	56.9
	MAY BE	83	18.0
Has any advertisement impacted you about the importance of teeth whitening?	YES	191	41.3
	NO	209	45.2
	MAY BE	62	13.4
Can smoking lead to staining of teeth?	YES	316	68.4
	NO	37	8.0
	MAY BE	109	23.6
Does consumption of soft drinks, tea or cofee lead to tooth discolouration?	YES	260	56.3
	NO	78	16.9
	MAY BE	124	26.8
Do you think food lodgement can lead to teeth discolouration?	YES	274	59.3
	NO	83	18.0
	MAY BE	105	22.7
Do you think healthy diet like consuming fruits and vegetables can whiten teeth?	YES	148	32.0
	NO	121	26.2
	MAY BE	193	41.8
Do you think maintaining the colour of the teeth is related to oral hygiene?	YES	302	65.4
	NO	71	15.4
	MAY BE	89	19.3
Do you think brushing regularly can whiten your teeth?	YES	217	47.0
	NO	109	23.6
	MAY BE	136	29.4
Do you think brushing hard can whiten your teeth?	YES	68	14.7
	NO	311	67.3
	MAY BE	83	19.0
Do you think brushing for longer duration can whiten your teeth?	YES	67	14.5
	NO	314	68.0

	MAYBE	81	17.5
Which method would you prefer to whiten teeth?	CONSULT A DENTIST	317	68.6
	HOME REMEDY	145	31.4
Have you ever tried any home remedies to whiten your teeth?	YES	122	26.4
	NO	309	66.9
	MAY BE	31	6.7
According to you which home remedy is beneficial for teeth whitening?	ACTIVATED CHARCOAL	106	22.9
	CHEWING GUMS	40	8.7
	OIL PULLING	68	14.7
	DON'T KNOW	165	35.7
	NONE OF THE ABOVE	83	18.0
On trying the home remedies have you experienced irritation in your gums?	YES	59	12.8
	NO	355	76.8
	MAY BE	48	10.4
Have you ever consulted a dentist regarding your teeth colour?	YES	91	19.7
	NO	371	80.3
Which would be your preferable time for teeth whitening procedure?	MORNING	254	55.0
	MIDDAY	61	13.2
	EVENING	57	12.3
	NIGHT	90	19.5
What will your expectation be, on teeth whitening procedures?	HIGH	155	33.5
	MODERATE	251	54.3
	LOW	56	12.1

5. DISCUSSION

Many types of research and studies were conducted to assess the concern of esthetic among young adults, in which some of the studies addressed their esthetic practice, but in addition to that, we have reported a wide range of participants' knowledge, choice, and preference concerning their esthetic.

The study aimed to evaluate the esthetic concerns among younger adults of age (15 -35). So, the study population was a group that was more concerned with their looks.

It might be plausible to use the concept of self- awareness for insight into why some individuals with tooth discoloration are unconcerned about their appearance, while others with marginally affected dental esthetics are greatly concerned. Facial appearance determines overall physical attractiveness. In the face, Goldstein^[14] found that the eye and the mouth were the most important factors in a hierarchy of characteristics for determining esthetic perception.

Tooth discoloration negatively impacts the perception of personality traits and characteristics^[15,16,17]. Around 56 % of the participants felt uncomfortable due to their teeth color, similarly in the study conducted by Nomay Nora revealed that most of the participants 67.4% were not satisfied with their tooth color^[17]. Around 62.1 % of the participants revealed that teeth color influenced self-confidence and it was similar to the study conducted by Shaista afroz, shraddha Rathi et al who concluded that image of dental esthetics can remarkably affect an individual socially and psychologically^[18]. In most cases, the perceptions of others can produce an environment that might affect a person's social and intellectual development.

A wide misnomer that, "Harder Brushing Better Cleansing" was prevalent among the population on the area of prolonged brushing associated with excessive force towards tooth whitening, gladly the majority of participants (65%) knew deleterious effects of improper and excessive brushing. It was contentment to perceive that young adults have good awareness.

The interesting finding has been reflected in this study that 56.3% of subjects considered that the consumption of soft drinks, tea, or coffee can lead to teeth discoloration. This impacts the diet consciousness of the participants regarding teeth color.^[18] In the current study, when a question was asked about the impact of advertisement on teeth whitening 41.3% agreed with the fact while 45.2% disagreed which was in contrast with the result obtained in the study conducted by Sharat Chandra Panni.^[19]

The result showed that 80.3 % of young adults consulted a dentist regarding their tooth color, similarly in the study conducted by Nomay Nora 72.8% revealed that most of the participants had consulted a dentist regarding tooth color. The fact that the results indicated from this survey, the majority of participants preferred consulting a dentist rather than trying home remedies for teeth whitening.

Dentists performed procedures like bleaching and veneer placement for treatment of the discolored tooth, according to Flavio Fernando Demarco et al about 78.1% of the dentist preferred at-home bleaching over in-office bleaching for vital teeth. [20]

The result of the present investigation validates that the participants were well concerned about their esthetics and their awareness towards consulting dentists is appreciable.

6. RECOMMENDATION

Proper awareness and knowledge of these areas need to be highlighted through various means such as television, social media, health education portfolios, etc

7. CONCLUSION

Tooth color is the main characteristic that defines the overall facial appearance. This study indicates that young adults are more concerned about their tooth color. We conclude that dental esthetics has a greater impact on psychological status. Brushing teeth and attitude towards consulting dentist shows that participants have good knowledge and awareness about tooth color. The dental advertisement also plays a significant role in tooth whitening. It helps the dentist to assess the patient's desires and increase the likelihood of treatment success. Also, it is fundamental that clinicians must provide health education to the patient and community.

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