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Abstract - Aim: The aim of this study was to investigate the awareness about the teeth whitening procedures available in the market either from professionals or home remedies among individuals aged 15 to 35. **Objectives:** The main objective of this research was to recognize and analyze awareness in tooth whitening procedures among different age cohorts, examining potential differences in methods employed for maintaining teeth whiten. **Materials & Methods:** A detailed questionnaire comprising 18 inquiries was formulated and distributed via Google Forms to gather data on tooth whitening procedures. Random sampling of individuals aged 15 to 35 and above was conducted to ensure a varied representation. The questionnaire focused on awareness about tooth whitening procedures, perspective of youngsters for their betterment of smile and approach towards professional care or home remedies. Data collection was facilitated through online responses. **Results:** The survey findings, acquired via Google Forms, unveiled intriguing disparities in awareness regarding treatments needed for tooth whitening procedures. Variations were evident in the selection of tooth whitening procedures, consultations and approach. It was observed that 72.08% were aware of teeth whitening, 62.08% stated that teeth color did influence their social life and confidence. About 80.00% advocated that smoking leads to staining of teeth. Around 60.83% denied that brushing teeth for longer duration and harder cannot whiten the teeth. Regarding teeth whitening, 81.25% preferred to consult a dentist, 18.33% of participants preferred home remedy over consulting dentist. **Conclusion:** In summary, this study, employing Google Forms for data collection, shed light on diverse tooth whitening procedures among individuals aged 15 to 35. Recognizing these disparities is pivotal for promoting tooth whitening procedures. **Keywords:** Tooth whitening procedures, Intrinsic and Extrinsic Stains, Bleaching, Esthetics, Brushing Teeth, Self-Confidence.

INTRODUCTION

The physical perception of an individual is significantly influenced by dental factors. An important role in social interaction is played by smiling. The question of whether beauty exists in nature is considered a philosophical problem.⁽²⁾

The dynamic integrity of various factors, including the individual's knowledge, attitude, and perceptions, is depended upon for oral and general health. Health behavior is defined as the activities that are undertaken by people to protect, promote, maintain health, and prevent disease.⁽³⁾ Esthetics is reflected by the lifestyle of individuals. The overall facial appearance is influenced by tooth color, which is considered the central characteristic. Self-confidence is also enhanced by dental esthetics.

The psychosocial impact and perceptual component of dental esthetics deal with the mental representation of the patient's dental appearance and reveal the problems in social situations caused by dissatisfaction with dental appearance. The attitude and emotions towards teeth whitening and potential problems in a social situation are demonstrated.⁽⁴⁾

The outer enamel and inner dentinal layer compose the tooth, predominantly consisting of inorganic content, with 97% and 70% respectively, primarily comprising hydroxyapatite crystals. Trace elements such as magnesium, fluoride, strontium, and lead are contained within these hydroxyapatite crystals.⁽⁶⁾ The color of the tooth is influenced by both intrinsic and extrinsic stains.^(7,8,9)

Intrinsic color is affected by the scattering and absorption of light both at the surface and within the structure of the tooth.⁽¹⁰⁾ Extrinsic stains, on the other hand, are influenced by the formation of colored regions within the acquired pellicle on the enamel surface, which can be impacted by factors such as inadequate brushing techniques, tobacco use, consumption of pigmented foods, age, exposure to iron salts, and chlorhexidine.^(11,12,13) The intensity of tobacco stains is partially dependent on the frequency and duration of the habit.

Traditionally, dentistry has been primarily focused on the physical health of the mouth; however, contemporary oral health encompasses concern for both aesthetic appearance and freedom from pathological conditions. This expanded approach involves procedures such as bleaching and laminate prosthesis. Bleaching, for instance, involves the application of a chemical agent onto the tooth, which oxidizes organic pigments, thereby lightening the tooth's color.

Tooth bleaching can be categorized into vital and non-vital tooth bleaching. Vital tooth bleaching is carried out on teeth that are alive, either at home or in-office settings. Non-vital tooth bleaching, on the other hand, is conducted on teeth that have undergone root canal treatment, achieved either intracoronally or through combination procedures. The study aimed to assess the awareness and knowledge of teeth whitening procedures among young adults.

MATERIALS AND METHODOLOGY

A cross-sectional study was undertaken among a randomly selected group of young adults aged 15 to 35 in (Uttarakhand) India, with a total of 240 participants. Data collection was facilitated through an online survey conducted via Google Forms. The survey links were subsequently disseminated to potential participants through various social media platforms such as WhatsApp, Instagram, and Messenger. A note was included to clarify the study's objectives to the participants.

A self-administered and validated questionnaire comprising 18 questions written in English was utilized. The questionnaire covered demographic information, socio-economic status, and substantive inquiries delving into respondents' aesthetic concerns, perceptions, and understanding of the causes and management of teeth whitening. The questionnaire was structured to assess awareness and knowledge regarding teeth whitening among young adults.

The study was conducted from January 10th 2024 to February 6th, 2024 in Department of Conservative Dentistry & Endodontics in Seema Dental College & Hospital, Rishikesh,

Uttarakhand . It typically took participants approximately 5 to 10 minutes to complete the survey. The questionnaire data were collected through Google Forms and subsequently analyzed .

STATISTICAL ANALYSIS:

Data obtained from the Google Forms responses were subjected to thorough statistical analysis. Descriptive statistics, including frequencies and percentages, were employed to summarize the demographic characteristics and key variables.

3. Sex

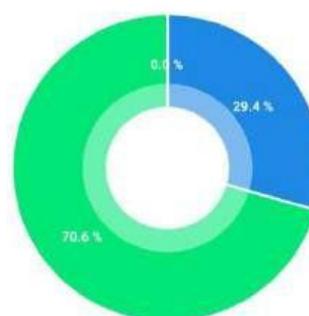
RESULTS

Options	%	Count
MALE	29.17	70
FEMALE	70.00	168
OTHERS	0.00	0
No Answer	0.83	2

3. Sex

PIE CHART

- MALE - 70
- FEMALE - 168
- OTHERS - 0



4. Do you have knowledge about teeth whitening?

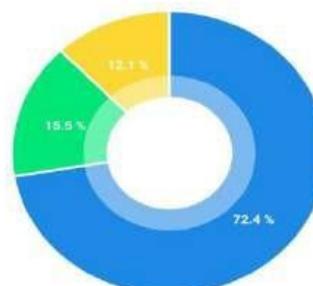
RESULTS

Options	%	Count
YES	72.08	173
NO	15.42	37
MAYBE	12.08	29
No Answer	0.42	1

4. Do you have knowledge about teeth whitening?

PIE CHART

- YES - 173
- NO - 37
- MAYBE - 29



5. Is your self-esteem impacted by the color of your teeth?

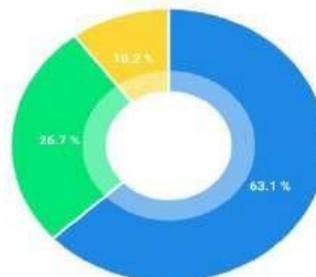
RESULTS

Options	%	Count
YES	62.08	149
NO	26.25	63
MAYBE	10.00	24
No Answer	1.67	4

5. Is your self-esteem impacted by the color of your teeth?

PIE CHART

YES - 149
NO - 63
MAYBE - 24



6. When you smile, do you notice that your teeth appear darker than the others?

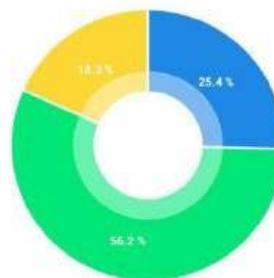
RESULTS

Options	%	Count
YES	25.42	61
NO	56.25	135
MAYBE	18.33	44

6. When you smile, do you notice that your teeth appear darker than the others?

PIE CHART

YES - 61
NO - 135
MAYBE - 44



7. Has anyone recommended teeth whitening to you?

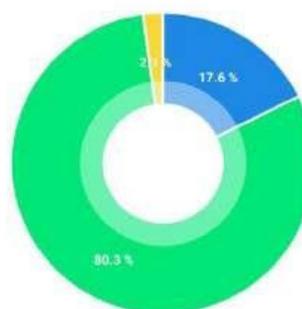
RESULTS

Options	%	Count
YES	17.50	42
NO	79.58	191
MAYBE	2.08	5
No Answer	0.83	2

7. Has anyone recommended teeth whitening to you?

PIE CHART

■ YES - 42
 ■ NO - 191
 ■ MAYBE - 5



8. Have you been influenced by any advertisements emphasizing the significance of teeth whitening?

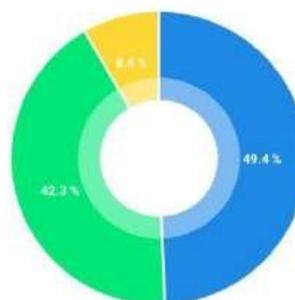
RESULTS

Options	%	Count
YES	49.17	118
NO	42.08	101
MAYBE	8.33	20
No Answer	0.42	1

8. Have you been influenced by any advertisements emphasizing the significance of teeth whitening?

PIE CHART

■ YES - 118
 ■ NO - 101
 ■ MAYBE - 20



9. Does smoking contribute to the discoloration of teeth?

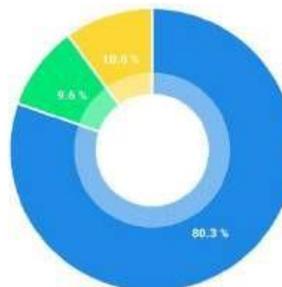
RESULTS

Options	%	Count
YES	80.00	192
NO	9.58	23
MAYBE	10.00	24
No Answer	0.42	1

9. Does smoking contribute to the discoloration of teeth?

PIE CHART

■ YES - 192
■ NO - 23
■ MAYBE - 24



10. Can the consumption of soft drinks, tea, or coffee and accumulation of food particles result in tooth discoloration?

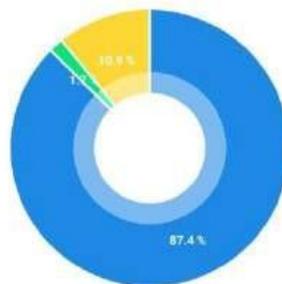
RESULTS

Options	%	Count
YES	87.08	209
NO	1.67	4
MAYBE	10.83	26
No Answer	0.42	1

10. Can the consumption of soft drinks, tea, or coffee and accumulation of food particles result in tooth discoloration?

PIE CHART

■ YES - 209
■ NO - 4
■ MAYBE - 26



11. Is there a connection, in your view, between maintaining the color of teeth and practicing good oral hygiene?

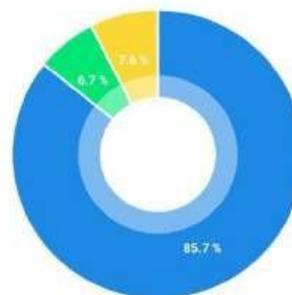
RESULTS

Options	%	Count
YES	85.00	204
NO	6.67	16
MAYBE	7.50	18
No Answer	0.83	2

11. Is there a connection, in your view, between maintaining the color of teeth and practicing good oral hygiene?

PIE CHART

- YES - 204
- NO - 16
- MAYBE - 18



12. Do you visit your dentist for teeth cleaning ?

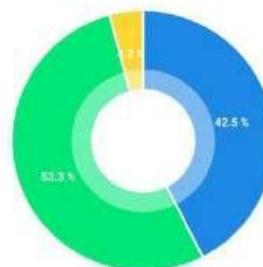
RESULTS

Options	%	Count
YES	42.50	102
NO	53.33	128
MAYBE	4.17	10

12. Do you visit your dentist for teeth cleaning ?

PIE CHART

- YES - 102
- NO - 128
- MAYBE - 10



13. How frequently do you go to dentist for teeth cleaning ?

RESULTS

Options	%	Count
3 MONTHS	4.17	10
6 MONTHS	25.83	62
MORE THAN 1 YEAR	31.67	76
NOT EVEN ONCE	38.33	92

13. How frequently do you go to dentist for teeth cleaning ?

PIE CHART

- 3 MONTHS - 10
- 6 MONTHS - 62
- MORE THAN 1 YEAR - 76
- NOT EVEN ONCE - 92



14. In your opinion, can regular brushing contribute to teeth whitening?

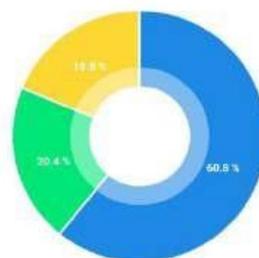
RESULTS

Options	%	Count
YES	60.83	146
NO	20.42	49
MAYBE	18.75	45

14. In your opinion, can regular brushing contribute to teeth whitening?

PIE CHART

- YES - 146
- NO - 49
- MAYBE - 45



15. What approach do you favor for whitening your teeth?

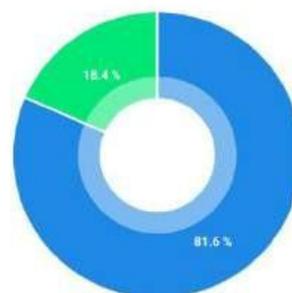
RESULTS

Options	%	Count
DENTIST CONSULTATION	81.25	195
HOME REMEDIES	18.33	44
No Answer	0.42	1

15. What approach do you favor for whitening your teeth?

PIE CHART

- DENTIST CONSULTATION - 195
- HOME REMEDIES - 44



16. Have you experimented with any home remedies to enhance the whiteness of your teeth?

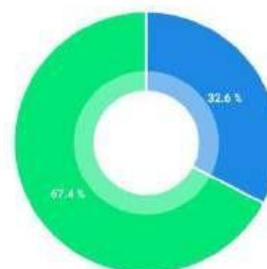
RESULTS

Options	%	Count
YES	32.50	78
NO	67.08	161
No Answer	0.42	1

16. Have you experimented with any home remedies to enhance the whiteness of your teeth?

PIE CHART

- YES - 78
- NO - 161



17. Have you sought advice from a dentist regarding the color of your teeth?

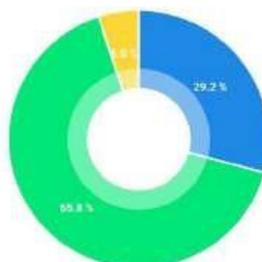
17. Have you sought advice from a dentist regarding the color of your teeth?

RESULTS

Options	%	Count
YES	29.17	70
NO	65.83	158
MAYBE	5.00	12

PIE CHART

■ YES - 70
 ■ NO - 158
 ■ MAYBE - 12



18. What expectations do you have for teeth whitening procedures?

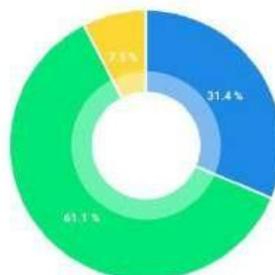
18. What expectations do you have for teeth whitening procedures?

RESULTS

Options	%	Count
HIGH	31.25	75
MODERATE	60.83	146
LOW	7.50	18
No Answer	0.42	1

PIE CHART

■ HIGH - 75
 ■ MODERATE - 146
 ■ LOW - 18



DISCUSSION

Numerous research endeavors and studies have been undertaken to evaluate the issue of aesthetic concerns among young adults. Among these studies, some focused on their aesthetic behaviors, while additionally, we have presented a diverse array of participants' understanding, selections, and inclinations regarding their aesthetic preferences.

The study aimed to assess aesthetic concerns among a demographic of younger adults aged between 15 and 35, specifically targeting a cohort highly attentive to their physical appearance.

Utilizing the concept of self-awareness could offer valuable insights into why certain individuals with tooth discoloration exhibit indifference towards their appearance, while others, even with only slight alterations in dental aesthetics, express significant concern. Facial appearance plays a pivotal role in defining overall physical attractiveness.

Tooth discoloration negatively impacts the perception of personality traits and characteristics.^(16,17,18) There was a widespread misconception that "Harder Brushing Equals Better Cleansing" prevailed among the population, leading to prolonged brushing and excessive force in pursuit of tooth whitening. Fortunately, a significant majority of participants were aware of the detrimental effects of improper and excessive brushing. It was gratifying to observe that young adults demonstrated good awareness in this regard.

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

CONCLUSION

Tooth color significantly influences overall facial appearance, as evidenced by this study revealing heightened concern among young adults regarding their tooth color. From this, we infer that dental aesthetics wield a profound influence on psychological well-being. Moreover, participants' attitudes towards tooth brushing and seeking dental consultation underscore their commendable knowledge and awareness regarding tooth color. Dental advertisements also play a pivotal role in tooth whitening, aiding dentists in understanding patient preferences and enhancing treatment success rates. It is imperative for clinicians to prioritize health education for both individual patients and the broader community.

List of References:

1. A. Vinita Mary, et al.; International Journal of Advance Research, Ideas and Innovations in Technology ,Awareness about teeth whitening among young adults in south Indian population, ISSN: 2454-132X
2. Mika Suojanen.The aesthetic experience of beautiful and ugly persons: a critique, Journal of Aesthetics & Culture; volume1 issue 8 2016.DOI: 10.3402/jac.v8.30529
3. Sharda AJ, Shetty S. Relationship of periodontal status and dental caries status with oral health knowledge, attitude and behaviour among professional students in India. Int J Oral Sci ;2009. DOI:10.4248
4. Slade PD. What is body image? Behav Res Ther 1994;32:497-502.
5. Silvia, P. J., & Duval, T. S. (2001). Objective self-awareness theory: Recent progress and enduring problems. Personality and Social Psychology Review, 5, 230-241.
6. Fincham AG, Moradian-Oldak J, Simmer JP. The structural biology of the developing dental enamel matrix. J Struct Biol. 1999 Jun Silvia, P. J., & Duval, T. S. volume 126 issue 3(2001). Objective self-awareness theory: Recent progress and enduring problems.
7. A.. Joiner, Tooth colour: a review of the literature, J. Dent. 32 (2004) 3–12

8. A. Watts, M. Addy, Tooth discolouration and staining: a review of the literature, *Br. Dent. J.* 190 (2001) 309–316
9. H. Mortazavi, M. Baharvand, A. Khodadoustan, Colors in tooth discoloration: A new classification and literature review, *Int. J. Clin. Dent.* 7 (2014) 17–28.
10. T.P. van der Burgt, J.J. ten Bosch, P.C.F. Borsboom, W.J.P.M. Korsmit, A comparison of new and conventional methods for quantification of tooth color, *J. Prosthet. Dent.* 63 (1990) 155–162
11. H. Mortazavi, M. Baharvand, A. Khodadosustan, Colors in tooth discoloration: a new classification and literature review, *Int. J. Clin. Dent.* 7 (2014) 17–28.
12. M. Hannig, A. Joiner, The structure, function and properties of the acquired pellicle, in: R.M. Duckworth, Karger (Eds.), *The Teeth and Their Environment Physical, Chemical and Biochemical Influences*, Monographs in Oral Science, vol 19 2006, pp. 29–64
13. M.G. Brading, A. Joiner, D.F. Kinane, Changes in oral health and condition with age, *Int. Dent. J.* 59 (2009) 309–320
14. Eli l . Bar-Tal y, kostovetzki l . At first glance: social meaning of dental appearance. *Journal public health Dent*; volume 61, issue 3: 2001 ;61 :150-154
15. Feng x p, Newton J T , Robinson P G . The impact of dental appearance on perceptions of personal characteristics among Chinese people in the United Kingdom. *Int Dent J* 2001 ; 51 : 282 – 286
16. Newton J T , Prabhu N , Robinson PG . The impact of dental appearance on the appraisal of personal characteristics. *Int J Prosthodont* 2003; 16 : 429 – 434
17. Nomay Nora, public attitude and awareness towards their teeth color and dental bleaching in Saudi arabia : A cross sectional survey . *Journal of Public Health and Epidemiology* . DOI: 10.5897/JPHE2015.0785. 8 (4) :45 -52
18. Shaista Afroz . Shraddha Rathi , Geeta Rajput , Sajjad Abdur Rahman , Dental esthetics and its impacts on psycho-social well -being and dental self confidence ; A campus Based Survey of North Indian university students : *J Indian Prosthodont soc*; 5 Jan 2013 ; 13(4) ; 455-460
19. Sharat Chandra pani, Abdulrahman al saffan, Sultan AlHobail, Fares Bin Salem; Esthetic Concerns and Acceptability of Treatment Modalities in Primary Teeth: A Comparison between Children and Their Parents; *International Journal of Dentistry*; January 2016(2):1-5. Doi: 10.1155/2016/3163904
20. Flavio fernando demarco et al, Preference on vital and nonvital tooth bleaching: a survey among dentists from a city of southern Brazil; *Braz Dent J*; Sept -Oct 2013 24(8).DOI: 10.1590/0103-6440201302152