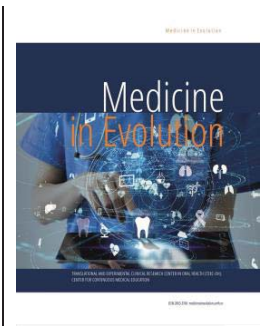


# The prevalence of frontal teeth discoloration among thai patients



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## **Abstract**

**Aim and objectives:** A smile has an important role in our beauty and attractiveness. When it comes to dental problem, it always diminished self-confident and affects the mental health of the patient

**Material and methods:** The study present in this paper uses the data from a web - based survey or a survey administration software called Google form. A cross-sectional study was conducted between 2 February and 30 May, 2021 including 333 participants, aged 18 - 50 years old Thai people.

**Results:** Most of Thai participants have moderate or neutral feeling toward their anterior tooth shade and only few participants are truly satisfied with the anterior teeth shade.

**Conclusions:** No matter how much satisfaction people have with their anterior teeth's shade, having white teeth is esthetic and it is what most of people want.

**Keywords:** aesthetic area, discromia, prevalence

## INTRODUCTION

The appearance and color of the teeth is a common concern in many people nowadays. Tooth discoloration is one of the most significant aesthetic issue that patient seek for treatment especially when it affects the anterior teeth which is mainly reveal when patient smiles. In the present time, most people are not only looking for healthy oral cavity but also perfect smile.

A smile has an important role in our beauty and attractiveness. When it comes to dental problem, it always diminished self-confident and affects the mental health of the patient [1].

Structure of tooth comprise of 4 dental tissues. Enamel, dentin, cementum and pulp tissue. All these structures affect also the color and appearance of the tooth. Normally enamel is colorless and semi translucent and the dentin or any material underneath the enamel is strongly and has a great impact on color of the tooth due to thick layer of dentin compare to enamel which is thinner [2].

Tooth discoloration is changed or deviated of color, hue, translucency of the tooth surface [2]. The physical tooth appearance is modified from its natural condition. There are varying factors and etiologies that cause tooth discoloration and staining including composition, locality and adherence of tooth discoloration and staining are in difference degrees [3]. Since There are diverse causes of tooth discoloration that has been supported by many researches, The most common causes are consumption of food and drink (coffee, wine, tea, soda), habits of using nicotine and tobacco products (cigarettes, shisha, dokha and snuff), betel nut, poor dental hygiene, tooth decay, medications especially antibiotic tetracycline, medical treatment such as radiation therapy and chemotherapy, dental materials (amalgam, silver sulfide containing materials, endodontic sealers), aging, genetics, fluorosis, trauma and diseases. However all these causes can be considered as pathological processes, but only one exception which can categorized as a physiological process which is tooth discoloration due to increment of age [4]. Usually teeth become darker as a physiological age change because of increased of secondary dentin thickness and reducing enamel thickness, occlusal wear, and pigment deposition within dentin structure [5]. At present, there are different treatment options for tooth discoloration and staining depends on the etiology and severity of tooth discoloration. Mild to moderate tooth discoloration can be treated individually or combination with conservative approach such as enamel microabrasion and bleaching. For severe tooth discoloration and staining needs a restorative approach with porcelain veneers or coverage with crowns [6].

Although, it's crucial for dental practitioners to know and understand the etiology and clinical aspect of tooth discoloration in order to achieve the diagnosis and select the most suitable and appropriate treatment for the patient [7].

The objective of this review is to determine the prevalence and etiology of anterior tooth/teeth discoloration among Thai patients.

## MATERIAL AND METHODS

The study present in this paper uses the data from a web - based survey or a survey administration software called Google form. A cross-sectional study was conducted between 2 February and 30 May, 2021 including 333 participants, aged 18 - 50 years old Thai people. Participants in this survey got informed before got in to survey that all participants in this survey must meet the inclusion criteria and there are no qualifications in exclusion criteria.

Inclusion criteria: a willingness to provide informed consent, age from 18 to 50 years old and having a complete or missing máximum 2 teeth on both arches.

Exclusión criteria: edentulous patient, present of crowns or veneres on anterior tooth/teeth and orthodontic appliance

The sample of population are randomized and participation in this survey is voluntary and does not collect identifying information such as name, email address or IP address. Therefore, all responses will remain anonymous.

The questionnaire link has been shared via the Facebook application. A self-assessment questionnaire was used as a tool, which include; demography data, lifestyle habits, diet, oral hygiene, satisfaction with teeth color, the desire for whiter teeth and the last part was informed consent for using all the answer on the research.

The questionnaire comprised of the following 2 parts:

Part 1 the general information of respondents consists of 6 questions

Part 2 questions regarding tooth/teeth discoloration and satisfaction of patient consists of 18 questions. Respondents can choose not to answer questions that they are uncomfortable with.

Presentation of the statistical procedures used:

The SPSS statistics software program was used to create the database, to analyze the data obtained from the results of all the answers to the questions of the participants, to distribute the data, including to make diagrams and reports in this study.

The results of this study will be presented in the form of diagrams, chart, tables and graphs, which we will express in absolute value or in the form of percentages. Association between tooth discoloration and independent factors were tested by X<sup>2</sup> with a significance level of 0.05.

Problem of the study:

Respondents may not feel encouraged to provide accurate and honest answers along with Respondents may not feel comfortable providing answers that present themselves in an unfavorable manner.

## RESULTS

A. Prevalence of anterior tooth discoloration with respect to gender

Chi-square value = 12.974, P value = < 0.001

B. Prevalence of anterior tooth discoloration with respect to age

Chi-square value = 20.003 (6) p value = 0.003

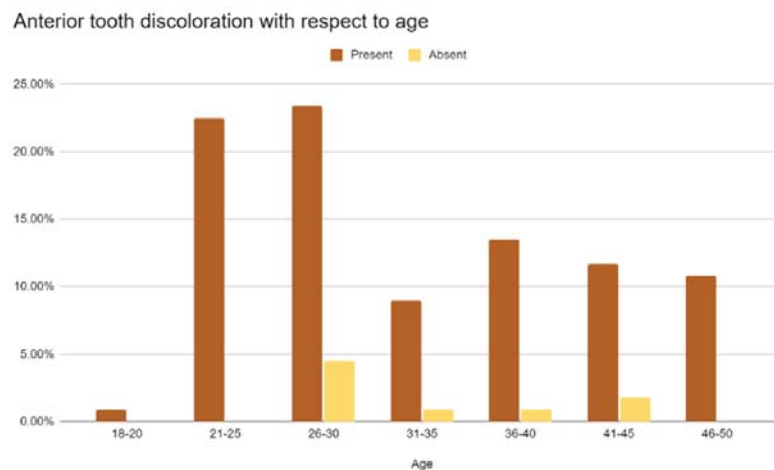


Figure 1. Prevalence of anterior tooth discoloration with respect to age

C. Prevalence of anterior tooth discoloration associated with location

Chi square value = 0.400, P value = 0.527

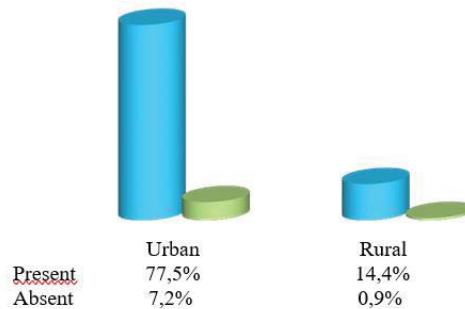


Figure 2. Prevalence of anterior tooth discoloration with respect to location

D. Prevalence of anterior tooth discoloration with respect of occupation  
 Chi square value = 16.855, P value = 0.002

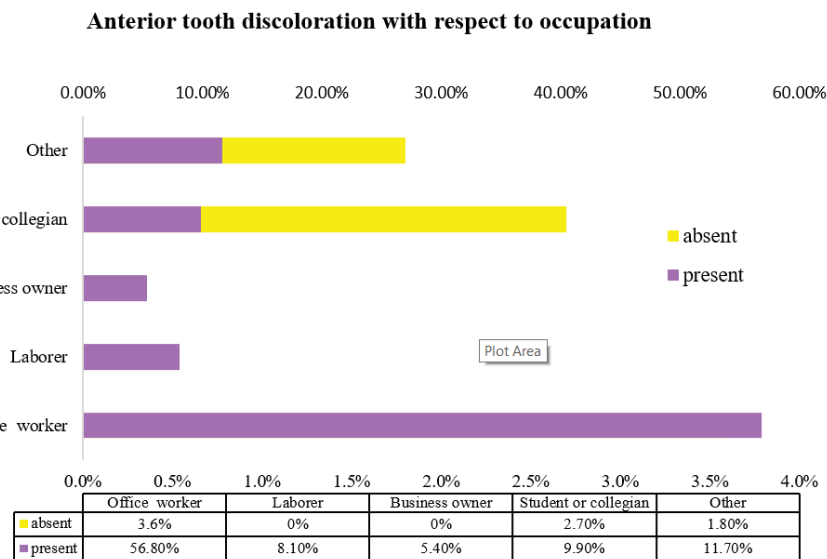


Figure 3. Prevalence of anterior tooth discoloration with respect to occupation

E. Frequency of tooth brushing associated with anterior tooth discoloration  
 Chi square value = 1.404, P value = 0.496

F. Frequency of dental visiting for checkups associated with anterior tooth discoloration

Chi square value = 3.668, P value = 0.338

All of participants in this study, 92.8% have the desired to have whiter teeth and only 7.2% doesn't want to have whiter teeth. As for the people who feel satisfied with the color of the anterior teeth and want to have whiter teeth counted as 23.7%, participants who were dissatisfied with the color of their anterior tooth shade and want to have whiter teeth were 15.3%, and people who were very satisfied and still want to have whiter anterior teeth were 3.9%. Chi square value = 15.136, P value = 0.002. This can explain the fact that no matter how much satisfaction people have with their anterior teeth's shade. Having white teeth is esthetic and it is what most of people want.

## DISCUSSIONS

Tooth discoloration is aesthetically displeasing and it's one of the main causes that patient seeking for treatment. Prior to starting treatment, understanding the etiology is

important for the dentist to make the right diagnosis and lead to correct and successful treatment. (6)

Nowadays, there are many treatment methods for tooth discoloration depends on the etiology of discoloration such as proper diet and habits, tooth brushing, Professional tooth cleaning, bleaching, enamel microabrasion, veneers. (7)

## CONCLUSIONS

Knowledge and understanding of the etiology of anterior tooth discoloration, including treatment options, products and procedures are importance to dental practitioners. In order to give correct diagnosis, understand the condition of patient and choose the most suitable treatment option for the patient.

The discoloration on one single anterior tooth or many teeth can affect the quality of life.

The study revealed that Thai people who presented with anterior tooth discoloration, majority are females, in the age group of 26-30 years old, in urban area, work as office worker.

The prevalence of anterior tooth discoloration in Thai patients are between 20-30 years of age.

People in their 20s and 30s often have a habit that cause anterior tooth discoloration such as drinking soda, coffee, wine and tea or smoking habit.

The main causes of intrinsic anterior tooth discoloration among Thai patients are trauma on anterior tooth, non-vital tooth, dental caries, tetracycline medication and fluorosis respectively.

The main causes of extrinsic anterior tooth discoloration among Thai patients are habit of drinking soda, coffee, wine, and tea, using chlorhexidine mouthwash, smoking habit and chewing betel nuts respectively.

In this study revealed that most of Thai people doesn't have habit of chewing betel nuts at all. Only present on old patients and most of them live in rural area.

Most of Thai participants have moderate or neutral feeling toward their anterior tooth shade and only few participants are truly satisfied with the anterior teeth shade.

Either very or less satisfied with the color of the anterior teeth. Most of patients still have the desired to have whiter teeth.

## REFERENCES

1. Ibiyemi O, Taiwo JO. Psychosocial aspect of anterior tooth discoloration among adolescents in igbo-ora, southwestern Nigeria. *Ann Ib Postgrad Med.* 2011;9(2):94-99.
2. Tran, Huy Quoc; Jenssen, Lotte, Classification of severe tooth discolorations and treatment options. *Ann Ib Postgrad Med.* 2012
3. Prskalo K, Klarić Sever E, Alerić I, Antonić Jelić T, Zaja I. Risk Factors Associated with Black Tooth Stain. *Acta Clin Croat.* 2017;56(1):28-35. doi:10.20471/acc.2017.56.01.05
4. Mohammed Mohsin Hasan, Qumars Nademi, Zahra Askari, Sana Zaman, Shatha Al Sharbatti, Prevalence of Self-Reported Tooth Discoloration among the students of gulf medical university, Ajman, UAE, *Gulf Med. Univ.: Proc.* 2014; 6-May (6-May): 70-80
5. Haralur SB. Effect of Age on Tooth Shade, Skin Color and Skin-Tooth Color Interrelationship in Saudi Arabian Subpopulation. *J Int Oral Health.* 2015;7(8):33-36.
6. Kapadia, Yash & Jain, Vinay. (2018). Tooth staining: A review of etiology and treatment modalities.
7. Kansal, S., Jindal, L., Garg, K., Thakur, K., Mehta, S., & Pachori, H. (2020). Discoloration of Teeth: A Literature Review. *International Journal of Health and Clinical Research*, 3(2), 58-62. <https://www.ijhcr.com/index.php/ijhcr/article/view/67>