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The Relationship between Self-Confidence and Teeth Stain Caused by Coffee Consumption and Smoking on Dentistry Student of Universitas Prima Indonesia Idamawati Nababan^{1*}, Molek², Sharon Altin Taqwani³

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ABSTRACT

Teeth stains occur due to the presence of polyphenol compounds that provide color to beverages, together with inadequate oral hygiene that leads to the formation of calculus and plaque. In addition to coffee, cigarettes are also a contributing factor to the formation of stains. This study was aimed to determine the relationship between self-confidence in dentistry students of Universitas Prima Indonesia and teeth staining from smoking and coffee use. This study is a cross-sectional analytical-observational investigation. This study utilizes original data acquired from research participants. This study involved a cohort of 53 research subjects. The data analysis was conducted using the univariate and bivariate methods in SPSS version 25. The Kruskal-Wallis test revealed a statistically significant disparity in the average tooth discoloration across individuals with varying levels of self-confidence ($p=0.0001$; $p\leq 0.05$). The findings of this study indicate a correlation between students' self-assurance and alterations in tooth color resulting from smoking and coffee consumption.

1. Introduction

Alterations in tooth color can lead to aesthetic concerns that can have a significant psychological effect, particularly when they affect the front teeth. Tooth discoloration can negatively impact one's self-esteem and physical attractiveness while also presenting aesthetic concerns for individuals. An appealing appearance is characterized by the presence of well-aligned teeth and coordinated muscle contractions around the eyes during smiling. The color, size, shape, positioning of the upper lip, visibility of the teeth, and amount of gingiva are all factors that affect how attractive a smile is.

Discolorations or pigmented blemishes on teeth can have a noticeable impact on appearance and can greatly impair an individual's psychological well-being, particularly their degree of self-assurance. Discoloration or pigmented stains on teeth can be attributed to the consumption of pigmented beverages such as tea and coffee. The discoloration of teeth is a result of the presence of polyphenol compounds that provide color to beverages, along with inadequate oral hygiene practices that lead to the formation of calculus and plaque. In addition to coffee, cigarettes are also a contributing factor to the formation of stains.¹⁻⁴

Coffee contains tannins and chromogens, which are color pigments. Tannin is a polyphenolic substance that can induce tooth discoloration by adhering to plaque and facilitating the adherence of other pigments. Chromogens are substances that impart color to certain food and beverage items, such as coffee. Regular consumption of coffee might lead to the gradual accumulation of pigments on teeth and enamel. White enamel can become prone to discoloration, resulting in teeth that may seem yellow or brownish in hue. In addition to pigments, coffee possesses acidic qualities that can harm tooth enamel and heighten the likelihood of tooth discoloration. Cigarettes include hazardous substances, including nicotine, tar, and several other compounds that can have negative effects on tooth health. Nicotine has the ability to permeate dental enamel and dentin, which is the layer of tooth tissue beneath the enamel, resulting in tooth discoloration. Over time, nicotine can cause teeth to develop a yellow or brown discoloration. Tar has the ability to adhere to teeth and create plaque, which can subsequently build and alter the color of teeth. Tar-induced plaque can also initiate the development of tartar, which is more resistant to removal using a conventional toothbrush.⁵⁻¹⁰ This study aims to determine the relationship between self-confidence and tooth discoloration due to consuming coffee and smoking among students at the Faculty of Dentistry, Universitas Prima Indonesia.

2. Methods

This study is a cross-sectional analytical-observational investigation. This study utilizes original data acquired from research participants. A total of 53 research participants were included in this study; all of them matched the specified inclusion criteria. The eligibility criteria for this study consisted of students enrolled in the Faculty of Dentistry at Universitas Prima Indonesia who expressed their willingness to participate in this research. The study has obtained approval from the medical and health research ethics council of Universitas Prima Indonesia. This study looks at how to gauge how self-assured the research participants are. This study additionally investigated the historical patterns of coffee and cigarette usage among the research participants. The data analysis was conducted utilizing the SPSS version 25 program. This study conducted univariate and bivariate analyses. A univariate analysis was conducted to display the frequency distribution of data for each variable being tested. A bivariate analysis was conducted to demonstrate the correlation between the test variables, with a p-value of less than 0.05.

3. Results and Discussion

The mean teeth discoloration score of respondents in each group can be seen in Table 1. The mean teeth discoloration score of respondents in the smoking, coffee-consuming, and smoking and coffee-consuming groups is 6,60±3,286; 6,81±3,315; and 7,82±3,060.

Table 1. Mean of teeth discoloration score.

| Groups | Mean | Standard deviation |
|--------------------------------|------|--------------------|
| Smoking | 6,60 | 3,286 |
| Coffee consumption | 6,81 | 3,315 |
| Smoking and coffee consumption | 7,82 | 3,060 |

Table 2 provides a comprehensive display of the respondents' self-confidence, which was evaluated by observing the changes in the color of their teeth. The findings of the self-confidence study revealed that a significant proportion of participants, specifically

49,1% (26 students), had high levels of self-confidence. Conversely, 39,6% (21 students) exhibited low self-confidence, while 11,3% (6 students) displayed adequate self-confidence.

Table 2. Student's self-confidence.

| Self-confidence | N | Percentage (%) |
|------------------------|----------|-----------------------|
| Good | 26 | 49.1 |
| Average | 6 | 11.3 |
| Poor | 21 | 39.6 |
| Total | 53 | 100.0 |

The Kruskal-Wallis statistical test was used to examine the relationship between students' self-confidence and the discoloration of their teeth caused by smoking and coffee consumption. The results of this analysis may be found in Table 3. The findings of the Kruskal-Wallis test indicate a statistically significant disparity in the average level of tooth

discoloration among individuals with varying levels of self-confidence, namely those with good self-confidence, sufficient self-confidence, and insufficient self-confidence ($p = 0.0001$; $p \leq 0.05$). The findings of this study indicate a relationship between students' self-confidence and the discoloration of their teeth caused by smoking and coffee consumption.

Table 3. The relationship between students' self-confidence and the discoloration of their teeth caused by smoking and coffee consumption.

| Self-confidence | Mean±SD | p-value |
|------------------------|----------------|----------------|
| Good | 5,38±2,451 | 0,0001* |
| Average | 5,00±1,095 | |
| Poor | 9,57±2,785 | |

*Kruskal-wallis, $p < 0,05$.

A wide range of complex and unique factors can have an impact on self-confidence. Encounters with triumph, accomplishment, and favorable reinforcement from the immediate surroundings can enhance one's self-assurance. Attaining objectives or surmounting obstacles might enhance one's self-assurance. Encountering failure, rejection, or unpleasant experiences might diminish one's self-assurance. The manner in which an individual reacts to and conquers these adverse encounters can significantly impact the cultivation of self-assurance. Receiving assistance from one's family, friends, and social surroundings can foster a feeling of safety and emotional reinforcement, ultimately bolstering one's self-assurance. Conversely, when others express disapproval or reject someone, it can erode their self-confidence, particularly if it occurs repeatedly or carries substantial weight. An individual's self-perception, particularly about their physical

appearance, can significantly impact their self-assurance. Embracing oneself in a positive manner helps enhance one's self-assurance. The media and societal beauty standards have the potential to shape one's self-perception and self-confidence. Occasionally, measuring oneself against unattainable benchmarks might have a negative impact on one's self-assurance.¹¹⁻¹⁵

White and clean teeth are commonly regarded as indicators of good hygiene and self-care. Individuals with properly cared-for teeth often exhibit greater self-assurance regarding the aesthetic aspect of their dental condition. On the other hand, alterations in tooth pigmentation, such as a yellow or brownish hue, or unfavorable conditions like plaque or tartar might diminish an individual's self-assurance regarding their oral cleanliness. Gums that are red, swollen, or bleeding may indicate gum health issues, such as gingivitis. Inadequate gum health might impact one's

self-assurance regarding oral hygiene and elicit emotions of shame or concern. Individuals who uphold proper dental hygiene practices typically possess a pleasant breath, enhancing their self-assurance during social engagements. Halitosis can cause discomfort and diminish an individual's self-assurance. Consistent dental hygiene practices, such as regular flossing and using mouthwash, can enhance one's confidence in maintaining oral cleanliness. Unhealthy practices, such as infrequent tooth brushing or neglecting oral hygiene, can lead to a sense of inferiority about the aesthetics of one's teeth.¹⁶⁻²⁰

4. Conclusion

There is a relationship between students' self-confidence and changes in the color of their teeth due to smoking and consuming coffee.

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