DENTAL MEDICINE

Lipstick influence on teeth color appearance

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Abstract

Background and aim. A beautiful smile with white and shiny teeth is nowadays a must, according to aesthetics norms. The color of the lips, with or without lipstick, may influence the appearance of the teeth color. The objective of the study was to evaluate the influence of the lipstick on the tooth color appearance.

Methods. Four female patient smiles were photographed from the frontal view with five different colored lipsticks. Each photo was evaluated by 100 observers and noted from 1-dark to 6-white. Data were statistically analyzed with dedicated software.

Results. The majority of the observers noted with lower grades the nude lipstick color photos and with higher grades the red and purple ones.

Conclusion. Within the limitation of the study, the surrounding (the lipstick) has an important influence on the appearance of the tooth color.

Keywords: tooth color, lipstick, dental esthetics

Background and aim

The fact that beauty is in the eyes of the beholder is no longer an uncertainty. Enhanced or not, the overall external appearance acts as a business card that introduces us to the world. Whether bare-faced or using make-up, facial appearance influences our social interactions, the way we are perceived as individuals and it may give hints about our social behavior [1-4].

In the digital era, where information is at one click distance and trends go as expeditiously as they come, the perception of beauty is mostly set up by social media. Despite the ongoing change in facial aesthetic trends, something seems to be a staple in terms of beauty and that is the smile. A beautiful smile, with visible white shiny teeth is nowadays a must in the aesthetics criteria. The increased demand for teeth whitening is based on the patients' expectations of dental treatment outcomes which are greatly influenced by the presence of social media in their lives, therefore the achievement of a "Hollywood smile" is becoming a trend [5-7].

As enhancing the whiteness of the teeth is more and more a demand coming from nowadays patients, some studies suggested that bleaching treatments could be one of the solutions [8,9]. Other researches indicated the use of a certain type of toothpaste or mouthwash as a minimal invasive alternative [10-12], or using bleach color restorative materials for prosthodontic treatment, such as veneers or crowns, as a more invasive one [13,14].

While everybody wants to look their best, there are other ways to obtain this. Some examples are the way we dress or make up. All of the backgrounds and the surroundings of the teeth can influence the aesthetic overall appearance and more than that, the optical parameters of the hard dental tissues [15-17]. The color of the lips, with or without lipstick, seems to have a major influence on the appearance of the teeth in terms of color.

The objective of the study was to evaluate the influence of the lipstick on the tooth color appearance.

Methods

A cross sectional study was

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conducted using an online self-administerd questionnaire among observers from Cluj-Napoca, Romania, from the beginning of October to the beginning of November 2021.

Four female patients were photographed from the frontal view, smiling and wearing five different shades of colored lipstick (beige, violet, dark red, bright red and brown). A set up of 6 photographs (one without lipstick and five with the different lipsticks) was compiled for each patient and was included in the online aesthetic appearance questionnaire (Figure 1). The colors of the patients' central incisors were B1 for the first patient, B3 for second, A2 for third and A3 for the fourth patient.

Together with questions about age, gender, occupation (dentistry field or not) and visual acuity (subject wearing glasses or not), the questionnaire evaluated the appearance in the terms of color of the exposed teeth.

A group of 100 observers were included, voluntarily, in the study and were asked to note each photograph with grades from 1 to 6 (a scale from 1-dark to 6-white). The questionnaire had no time limit and the majority of the participants spent between 5 and 10 minutes to complete the entire online questionnaire.

Data collected from the questionnaires were analyzed using SPSS (SPSS Inc., Chicago, USA). Frequency distributions were used together with Chi-square tests. Answers were grouped according to frequency of occurrence of positive or negative responses. The alpha level was set at 0.05.

Results

Demographic data

The group of the observers consisted of 74 females and 26 males.

The majority of the observers were young people in between 20 and 29 years old (Figure 2).

Out of the group of observers 29 had dentistry related occupations (29 dental students) and 71 had other occupations. Among the 100 observers, 54 were wearing glasses and 46 not.

Figure 1. Frontal view photographs of 4 female patients in 6 different situations (1 – no lipstick, 2 – beige lipstick, 3 – violet lipstick, 4 – dark red lipstick, 5 – bright red lipstick, 6 – brown lipstick).

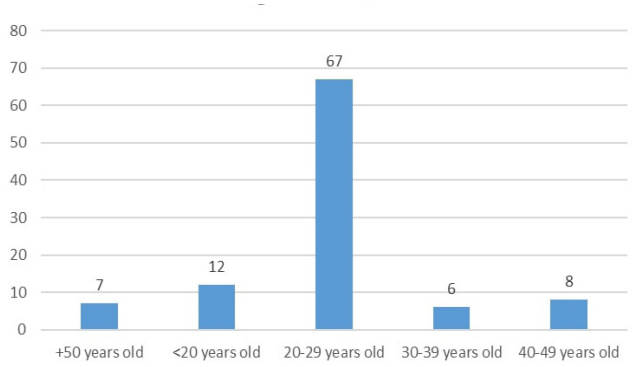

Figure 2. Age distribution of the evaluators.

Perception data

The majority of the observers noted with lower grades the nude lipstick color photos and with higher grades the red and violet ones.

Teeth color grades were the highest for the bright red lipstick, followed by dark red and violet. The lowest grades were given to the group of photographs in which the beige lipstick was used (Figure 3).

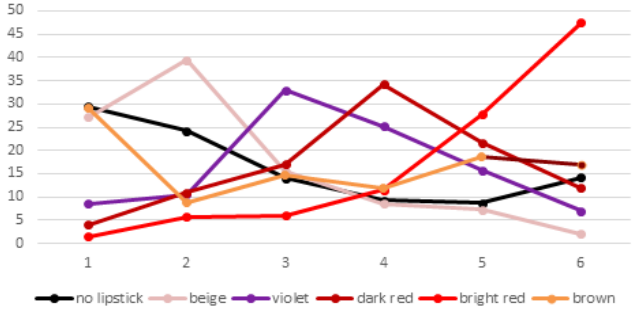

Figure 3. Linear distribution of the average grades for each lip shade.

The grades were not significantly influenced by visual acuity (Figure 4).

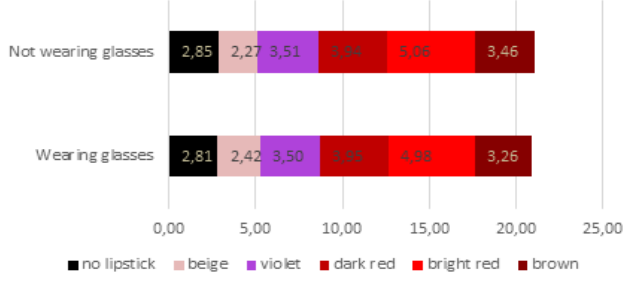

Figure 4. Distribution of average lip color grades according to visual acuity.

Observers between 20 and 39 years old gave higher grades for the pictures showing shrill colors compared to the older age groups (Figure 5).

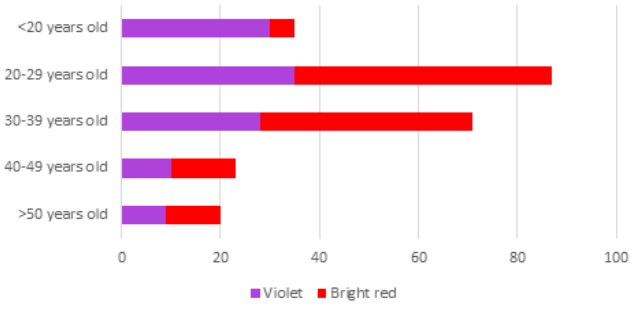

Figure 5. Number of high grades (4, 5 and 6) for shrill lipstick colors by age groups.

Female observers gave higher marks to the red tones compared to the male group of observers (Figure 6).

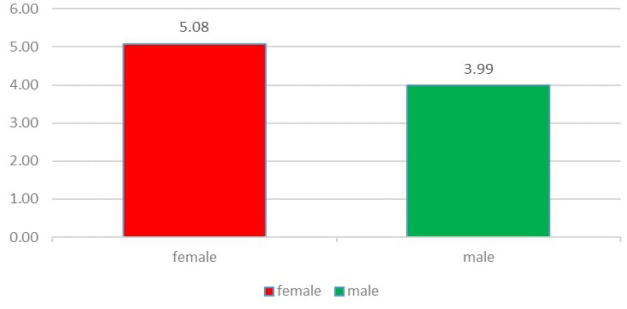

Figure 6. Average grades for red tones (bright red and dark red) by gender.

Those with professions not related to the dental area gave higher grades for the pictures in which bright lipstick colors were used (Figure 7).

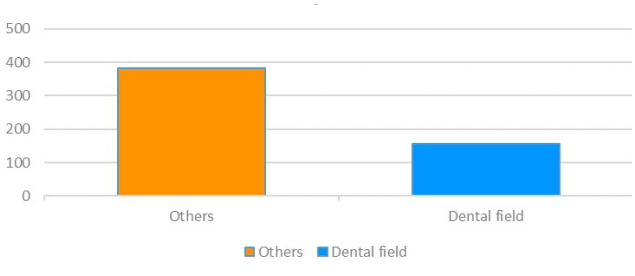

Figure 7. Percentage of high grades (4, 5, 6) for bright lipstick colors (bright red and violet) by occupation.

Discussion

To our knowledge, there are little data in the literature that assess the influence of the lipstick on the tooth color appearance.

Young observers (20-39 years old) appreciated more the shrill colored lipsticks while older observers appreciated more the neutral colored ones. It is known that the younger observers tend to stand out, while the older observers appreciate more the natural look [18-20].

Attractiveness or avoidance of shrill color, especially red color has always been an issue in nature. The research regarding this subject is contradictory. Even if red means danger in many situations, some peoples are attracted and in need of the feeling of adrenaline [21,22].

A limitation of the study is the small number of photographed subjects included [4]. Using a larger number may generate different results in term of perception. Using different types of initial color of the teeth, different arch forms, different teeth and lips morphology may influence the final results.

Different results may be generated using a larger number of observers, too. The sample size used in this study was relatively small to make a definite conclusion on the topic. Further information must be gained for a more representative conclusion.

Another limitation of this study was the collection of the answers, by self-administrated questionnaires, because one cannot rule out the possibility that some of the participants misunderstood the questions.

However, this study provided an initial opinion regarding the influence of the lipstick on the tooth color appearance, which could influence the way female patients tend to improve the look of their smile.

Conclusion

Within the limitations of the study, the surrounding (the lipstick) has an important influence on the appearance of the teeth color.

Tooth color is perceived as being whiter when using cool toned lipstick colors or colors that enhance the contrast between the lips and teeth.

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