

ORIGINAL ARTICLE

Analysis of Tooth Shade Selection in Study Population- A Clinical Study

Aditi Sharma¹, Asra Tabbasum²

Lecturer¹, House Surgeon², Department of Prosthodontics, Indira Gandhi Govt Dental Hospital Jammu, India

ABSTRACT:

Background: Selection of teeth forms an important step before teeth arrangement. Teeth selection is not simply a mechanical procedure, but requires dexterity and knowledge of biology. The present study was conducted to determine different shade selection in study population. **Materials & Methods:** This study was conducted on 64 subjects of both genders. Subjects were divided into 2 groups. Group I included 38 subjects in age range of 25-40 years and group II had 26 subjects in age range from 40- 60 years. The shade of middle third of the labial surface of permanent maxillary right central incisor was recorded. **Results:** Age group 25-40 years had 20 males and 18 females and age group 40-55 years had 14 males and 12 females. The difference was non- significant (P<0.1). Shade value 2 was seen in maximum number of subjects (males- 14, females- 10) followed by value 3 (males- 6, females- 8), value 1 (males- 10, females- 4), value 4 (males- 4, females- 8) and shade value 5 was not seen in any subject. The difference was significant (P<0.01). Maximum number of light skin subjects (8), medium (10) subjects and dark skin subjects (6) had shade value 2 followed by shade value 3 seen in light skin subjects (3), medium (7) subjects and dark skin subjects (4). The difference was non- significant (P>0.05). **Conclusion:** Shade value 2 was observed in maximum number of subjects. Maximum subjects had medium skin color. There is influence of age on shade value.

Key words: Radiance, Shade, Teeth.

Corresponding Author: Dr. Aditi Sharma, Lecturer, Department of Prosthodontics, Indira Gandhi Govt Dental Hospital Jammu, India

This article may be cited as: Sharma A, Tabassum A. Analysis of Tooth Shade Selection in Study Population- A Clinical Study. *Int J Res Health Allied Sci* 2017;3(5):107-109.

INTRODUCTION

Increasing dental awareness among the general population in developing countries has led to increased demand for esthetic restorations. Hence, it becomes all the more pertinent now, more than ever before, to provide restorations which defy detection. A smile is the most visible record of a Dentist's care. The significance of tooth shade in one's perception of smile attractiveness cannot be underestimated. In today's beauty conscious society, the demand for esthetic dentistry has increased a lot in last few years. Tooth shade is one of the most significant factors affecting esthetics.¹

Teeth selection is not simply a mechanical procedure, but requires dexterity and knowledge of biology. Selection of teeth forms an important step before teeth arrangement. An acceptable cosmetic effect in any dental restoration has always been regarded as important to good dentistry. A well-made prosthesis will fail if it is deficient in this respect.² Some of the extrinsic factors are diet, smoking, xerostomia, and restorations. Intrinsic factors include congenital defects of enamel or dentin such as amelogenesis and dentinogenesis imperfecta, environmental factors such as tetracycline staining, traumatic injury, dental caries, and aging. Selection of tooth shades based on natural anterior teeth is influenced by many factors. Light under which the shade is viewed is a major factor. Clinical skill of the operator and shade guide system used, play an important role in the shade selection process. Staining due to various

factors, both extrinsic and intrinsic, have a direct impact on altering tooth shades.²

Esthetics is apparent that beauty, harmony, naturalness and individuality are major qualities of esthetics. The dentist must visualize esthetics in relation to the patient and then translate that visualization into an acceptable esthetic result. The success of Dentist efforts depends upon his artistic ability, his powers of observation and his experience.⁴ The present study was conducted to assess tooth shade selection in study population.

MATERIALS & METHODS

This study was conducted in the department of Prosthodontics. It included 64 subjects of both genders. All were informed regarding the study and written consent was obtained. Ethical approval was taken from institutional ethical committee.

Patients were divided into 2 groups. Group I included 38 subjects in age range of 25-40 years and group II had 26 subjects in age range from 40- 55 years.

The shade of middle third of the labial surface of permanent maxillary right central incisor was recorded using the Vitapan 3D-Master shade guide. Starting from the darkest group, the appropriate value group – 1, 2, 3, 4 or 5 was recorded. Skin color of all subjects was matched using the Radiance compact makeup shades as a guide which was either, light, medium and dark. Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Age & Gender distribution of subjects

Age group	Males	Females	P value
25-40 years	20	18	0.1
40-55 years	14	12	
Total	34	30	

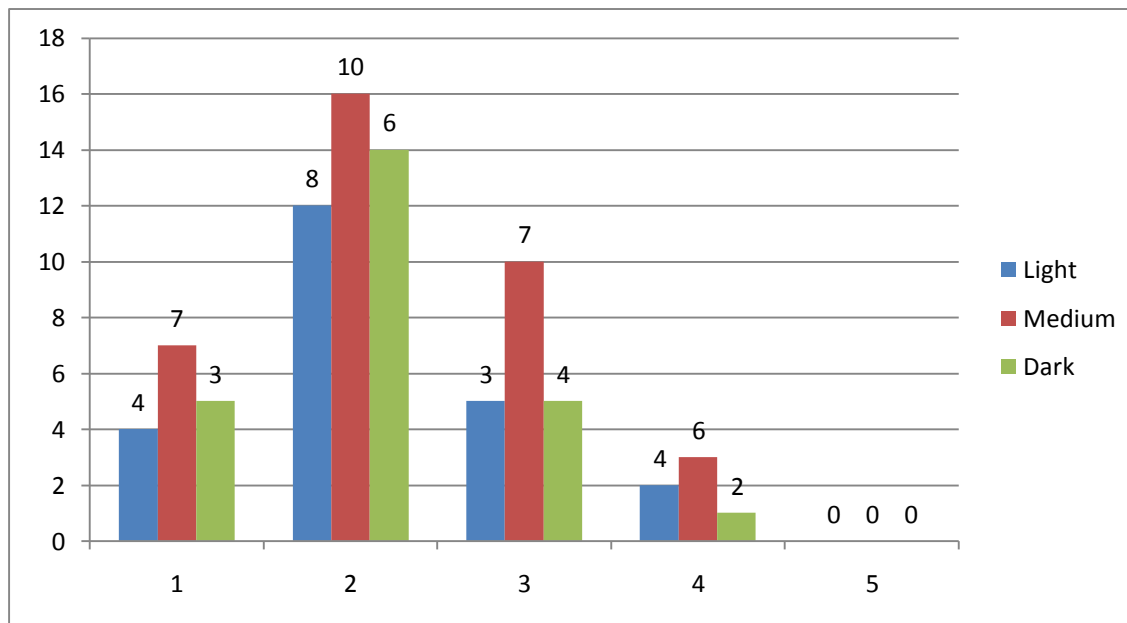
Table I shows that age group 25-40 years had 20 males and 18 females and age group 40-55 years had 14 males and 12 females. The difference was non-significant (P=0.1).

Table II Distribution of subjects according to shade value

Shade value	Males	Females	P value
1	10	4	0.01
2	14	10	
3	6	8	
4	4	8	
5	0	0	
Total	34	30	

Table II shows that shade value 2 was seen in maximum number of subjects (males- 14, females- 10) followed by value 3 (males- 6, females- 8), value 1 (males- 10, females- 4), value 4 (males- 4, females- 8) and shade value 5 was not seen in any subject. The difference was significant (P<0.01).

Graph I Distribution of subjects according to shade value and skin color



Graph I shows that maximum number of light skin subjects (8), medium (10) subjects and dark skin subjects (6) had shade value 2 followed by shade value 3 seen in light skin subjects (3), medium (7) subjects and dark skin subjects (4). The difference was non-significant (P>0.05).

DISCUSSION

The selection of artificial tooth shade to replace missing natural teeth is a relatively simple procedure when few natural anterior teeth remain. However, for the edentulous individual when no pre extraction records are available, the choice of tooth shade is a subjective process. A perception among dentists has been that individuals with darker skin colors have lighter shades of teeth.⁵

Knowledge of physics, physiology, and psychology of colour is valuable in the selection of teeth colour. Hue, saturation, colour of teeth, brilliance, and translucency are the parameters to select colour of the tooth. Hue is the specific colour produced by a specific wavelength of light acting on the retina. The hue of teeth must be in harmony with the colour of patients face. Saturation is the amount of colour per unit area of an object.⁶ Brilliance is the lightness or darkness of an object. People with fair complexion generally have teeth with less colour and the colours are less saturated. Thus, the teeth are lighter and in harmony with the colours of the face. People with dark complexions generally have darker teeth that are in harmony with the colour of the face. Maxillary central incisors are lightest teeth in the mouth, maxillary laterals and mandibular incisors are slightly darker. Canines are still darker. Posterior teeth are usually uniform in colour and slightly lighter than canines. Teeth darken with age. The present study was conducted to determine different shade value in study population.⁷

We found that age group 25-40 years had 20 males and 18 females and age group 40-55 years had 14 males and 12 females. Shade value 2 was seen in maximum number of subjects (males- 14, females- 10). Maximum number of light skin subjects (8), medium (10) subjects and dark skin subjects (6) had shade value 2 followed by shade value 3 seen in light skin subjects (3), medium (7) subjects and dark skin subjects (4). This is in agreement with Gozalo et al.⁸

Shade should harmonize with the shade of the anterior teeth. Bulk influences the shade of the teeth and for this reason it is advisable to select a slightly lighter shade for the bicuspids if they are to be arranged for aesthetics. They may be slightly lighter than the other posterior teeth but not lighter than anterior teeth. There is beauty in age as well as in youth, but in fact age has the edge. It is routine first to consider light shades for young people and darker shades for older ones. Age in the artificial tooth must also be accompanied by mold refinement.

In the artificial tooth, we may reflect the appropriate age effects by such means as grinding the incisal edges and removing the incisal enamel at such an inclination and to such depth as to convey reality to the composition.⁹ The color of the facial skin serves as basic guide to tooth shade. Specifically it is suggested that the value of the teeth must correspond to darkness or lightness of the facial skin tone. In past various researchers had performed studies finding a relationship of tooth shade with skin color.

CONCLUSION

In maximum cases, shade value 2 was observed. Maximum subjects had medium skin color. There is influence of age on shade value.

REFERENCES

1. Park JH, Lee YK, Lim BS. Influence of illuminants on the color distribution of shade guides. *J Prosthet Dent* 2006; 96:402-11.
2. Carlsson GE, Wagner IV, Odman P, Ekstrand K, MacEntee M, Marinello C, et al. An international comparative multicenter study of assessment of dental appearance using computer-aided image manipulation. *Int J Prosthodont* 1998;11:246-54.
3. Hasegawa A, Ikeda I, Kawaguchi S. Color and translucency of in vivo natural central incisors. *J Prosthet Dent* 2000; 83:418-23.
4. Barrett AA, Grimaudo NJ, Anusavice KJ, Yang MC. Influence of tab and disk design on shade matching of dental porcelain. *J Prosthet Dent* 2002; 88:591-7.
5. Schwabacher WB, Goodkind RJ, Lua MJ. Interdependence of the hue, value, and chroma in the middle site of anterior human teeth. *J Prosthodont* 1994; 3:188-92.
6. Marunick MT, Chamberlain BB, Robinson CA. Denture aesthetics: An evaluation of laymen's preferences. *J Oral Rehabil* 1983; 10:399-406.
7. Esan TA, Olusile AO, Akeredolu PA. Factors influencing tooth shade selection for completely edentulous patients. *J Contemp Dent Pract* 2006; 7:80-7.
8. Gozalo-Diaz D, Johnston WM, Wee AG. Estimating the color of maxillary central incisors based on age and gender. *J Prosthet Dent* 2008; 100:93-8.
9. Khurana PR, Thomas PV, Rao SV, Balamuragan R, Singh MP. A clinical study to correlate maxillary anterior natural teeth with that of the commercially available acrylic and porcelain shade guides. *J Contemp Dent Pract* 2013; 14:427-33.

Source of support: Nil

Conflict of interest: None declared

This work is licensed under CC BY: **Creative Commons Attribution 3.0 License.**