

Comparative Evaluation of Patient's Perception for Teeth Selection in North Gujarat Population: A Questionnaire Study

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ABSTRACT

Aim: To compare and evaluate patient's perception for teeth selection in north Gujarat population.

Material and method: A questionnaire survey was carried out among 100 patients during jaw relation record and try in stage. Patients were asked question with explanation and the importance of each question in their language and the responses for each question were noted down. Along with that, patients were also shown different sizes, shapes, contour and shades of anterior teeth for better understanding and ability to answer the questions.

Results: Most of the patients did not agree with the other studies regarding teeth selection, they have their own perception.

Conclusion: Within the limitation, most of the patient have their own perception for teeth selection even after education about the importance of dentogenics in complete denture.

Keywords: Teeth selection, denture aesthetics, mental attitude.

INTRODUCTION

We live in a social world which demands high aesthetics whether it is fixed or removable restoration. So facial appearance and smile plays an important role in today's era. The term "esthetics" was coined in 1750. It is derived from the Greek word "Aesthesis"¹ which means to designate the science of sensuous knowledge, which gives beauty, in contrast to the science of logic, which gives truth. This phase is often neglected and the patient is expected to adapt automatically to the new dentures.²

The appearance of the face has an important social and psychological effect on the human personality and the features most commonly associated with

facial attraction are the eyes and the mouth. Current advertising and media in general emphasize the effect of a pleasant appearance because of its importance in many everyday situations³. The oral region plays an important role when an individual speaks or approaches another person. Poor oral hygiene and ugly teeth, for example, are noticed by others.

Teeth selection is not just simply a procedure, but requires thorough knowledge of biology. The objective of teeth selection is to create a dentofacial harmony. An acceptable cosmetic effect in any dental restoration has always been regarded as important to good dentistry.⁴ The dentist must accommodate patient's perception and then visualize an acceptable esthetic result.

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Tooth selection using the concepts of dentogenics is based on the age, sex and personality of the patient, which has been put forth by Frush and Fisher⁵. This concept has explained three factors that are sex, personality and age of the patient. As said by Frush and Fisher⁶, "the environment of the teeth is as important as the tooth itself".

A number of patients coming from rural or certain urban areas have little or no knowledge about the aesthetics in complete denture, hence it is operator's duty to motivate and educate them for denture aesthetics. The selection of teeth should be done to embody the proper teeth form and size, and the most ideal shade as well. The art of selection of teeth for edentulous patients has been lost in the maze of tooth guides, folders and pamphlets and the numerous methods of selection advocated by researchers.

Patient's expectations are totally different than what the previous studies have suggested for tooth selection. Patients always prefer whitish teeth for better aesthetics, also they always want slightly shorter teeth as he or she does not like longer teeth because of unaesthetic appearance. So it is very important to know patient's perception in selection of teeth in denture aesthetics. Hence the study has been conducted to compare and evaluate patient's perception for teeth selection in north Gujarat population.

MATERIALS AND METHODS

This study was conducted in the Department of Prosthodontics, Crown and Bridge at Narsinbhai Patel Dental College and Hospital, North Gujarat. Ethical approval to conduct the study was obtained from Institutional Ethic Committee, Sankalchand Patel University, Visnagar. 100 completely edentulous patients reporting to the Department of Prosthodontics, Narsinbhai Patel dental college & Hospital seeking complete denture treatment were included in the questionnaire study.

Inclusion criteria:-

- 1) Only complete denture patients
- 2) Patients with Existing denture.
- 3) Patients who can read and understand either of three languages: gujarati, hindi, and english

Exclusion criteria:-

- 1) Partially edentulous patient
- 2) Poor neuromuscular coordination
- 3) Mental disabilities

MATERIALS AND METHODS

An informed consent was taken from the participant after which the participants were included in the study. A printed questionnaire was given to the subjects, depending on their preference and based on ability to comprehend either of three languages. The questionnaire included provision for the collection of basic demographic information (e.g. name, age, sex and address).

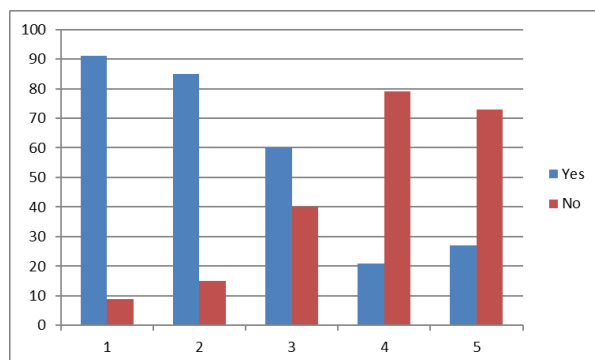
A questionnaire survey was carried out among those 100 patients during jaw relation record and try in stage. Patients were asked question with explanation and the importance of each question in their local language and the responses for each question were noted down. Along with that, patients were also shown different sizes, shapes, contour and shades of anterior teeth for better understanding and ability to answer the questions. The same procedure was repeated for each patient and data was collected. The filled up forms were collected and analysed by using one way ANOVA statistics.

RESULTS

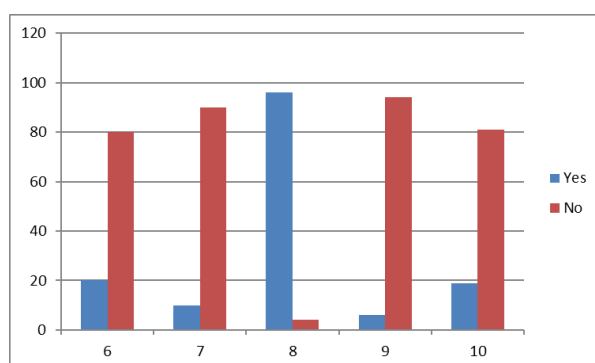
The results were reported by summarizing responses to each of the 15 questions in the study. The findings for each of the study questions were presented graphically. Graph 1 represent patient response to question number 1 to 5, in which from question 1 to 3 most of the patients agreed with asked question and for question 3 and 4, they did not agree. Graph 2 represent patient response to question number 6 to 10, in which from question 6,7,9 and 10 most of the patients did not agree with asked question and for question 7, they agreed. Graph 3 represent patient response to question number 11 to 15, in which from question 11,12,13, and 15 most of the patients did not agree with asked question and for question 14 they agreed.

DISCUSSION

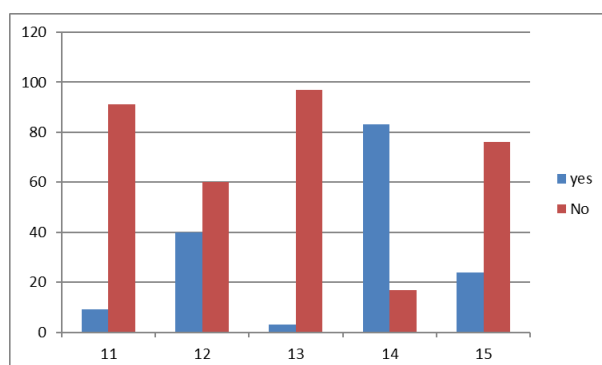
Although one of the most important aspect to achieve best aesthetic for particular patient in complete denture is selection of artificial teeth, it is most of the time neglected phase of prosthodontics.



Graph 1: Percentage distribution of responses to teeth selection Question 1-5.



Graph 2: Percentage distribution of responses to teeth selection Question 6-10.



Graph 3: Percentage distribution of responses to teeth selection Question 11-15.

Most of the dentists rely on the dental technician for selection of artificial teeth, they do not pay attention in this particular treatment planning phase.

There is no universally accepted method to establish the criteria for selection of the artificial teeth. So a dentist seeks guidance from variety of techniques available and his clinical experience to deliver what is best for the patient.

Frush and Fisher⁷ has advocated a concept called Dentogenic concept in 1957. It is based on sex, personality, and age of the patient (SPA concept or factor). Teeth were selected and arranged according to this concept.

According to this concept, curved facial features are associated with the femininity and square with the masculinity. To create harmony with the face and teeth; females have more ovoid and tapering anterior teeth than compared to square form in males. Incisal edge of the central incisor is rounded in case of female subjects. A vigorous personality requires square teeth with flat incisal edges while a delicate personality requires ovoid teeth. With age, wear of the incisal edges and proximal surfaces should be considered. Labial surfaces seem flatter and appears squarer. This should be considered during selection of teeth.

Shingli et al⁸ reported that there is need of awareness to be created regarding other functions of teeth like esthetics and phonetics because many subjects in this study were only aware of the masticatory functions performed by teeth.

The literature supports certain aspects of the dentogenic concept. Population averages for both gender and age have been determined for tooth display⁹, shape,¹⁰ size and proportion¹¹, arrangement⁹, and color.¹² These studies were based on unrestored dentate patient populations.

Most of the authors would agree that prediction of a personality is subjective. Dong JK et al concluded that characteristics of tooth morphology and arrangement can elicit biases from the viewer. A second study statistically correlated an attractive smile with extroversion and low anxiety¹³ While guidelines for; what these tooth characteristics are, have been discussed, their application with respect to personality projection remains subjective⁷

Several authors have attempted to predict patient's gender and age, by showing models or oral photographs. Patient cannot recognize at all. These studies failed to assess the teeth from an extraoral perspective, as they would be seen in public.^{14,15}

In this study we compared and evaluated patient's perception for teeth selection in north gujarat population. Graph 1 shows that most of the patients

agreed with that there is a difference between shape of the teeth of a male and female patient, teeth selection depends on person's personality but they refuse with the statement that difference do come in teeth with the age. They think that there is no use of previous photographs for teeth selection.

Graph 2 shows that most of the patients said that they want only whitish teeth, they did not accept the teeth like present in natural teeth; for example rotated tooth, slightly malposed tooth. They all agree that retention and mastication is much more important for them in comparison to aesthetics and teeth appearance during smile. They also did not agree with the teeth selection based on different personality of a patient.

Graph 3 shows that most of the patients said that they did not want their teeth according to their age, sex and personality, most of the time they have their own perception and requirements. They were not even interested in teeth selection procedure and wanted such teeth that shows better masticatory efficiency then aesthetics. They did not want their teeth appearing like their natural teeth as previously present, they want all the teeth to well aligned.

Patient shows this type of attitude towards the teeth selection due to low education regarding teeth selection and denture aesthetics. Most of the patients were from the rural and urban areas which is the probable reason for unawareness regarding teeth selection when compared to patients who are from metro cities or educated people; because after thorough education most of the subjects did not agree.

During study we noted that around 75% patients had indifferent attitude as to how their teeth should look in respect to size and shape, they just demand for masticatory efficiency. Mental attitude of the patient may vary according to age, sex and educational level. Chaudhary S et al¹⁶ reported that male patient are indifferent in nature while females are exacting in nature. Patients in the age groups of 45-54 years revealed exacting nature while ≥65 years showed hysterical attitude when compared with other age groups. An illiterate or minimally educated group outnumbered in the indifferent type and were in the exacting category. In this study also most of the patients are of old age group and males.

So it may be the reason for unawareness regarding teeth selection.

Limitation of the study is that it is only limited to North Gujarat people only. To get the strong conclusion, it is better to carry this study with the larger samples size.

CONCLUSION

Within the limitations, we can draw a conclusion that most of the patient have their own perception for teeth selection even after education about the importance of dentogenics in complete denture. They did not want teeth as they have previously as natural tooth, they did not accept yellowish teeth in their denture. Teeth selection can depend on mental attitude of patient. This study encourage further such kind of studies with large sample size and different methodology.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

REFERENCES

1. Young HA, Denture Esthetics, J Prosthet Dent 1956; 6 (6), 748 - 55.
2. Sheetal Chowdary Bolla, Naga Sribala Gantha, Riyaz Basha Sheik; Review of History in the Development of Esthetics in Dentistry. *Iosr-jdms* ; 13(6)4; 31-5.
3. Linn EL. Social meaningso f dental appearance]. *Health Hum Behav* 1966; 7: 295-8.
4. Hayward DE. Use of natural upper teeth in complete dentures. *J. Prosthet. Dent.* 1968;19(4): 359 – 63.
5. Frush JP, Fisher RD.The dynesthetic interpretation of dentogenic concept. *J Prosthet Den* 1958;8:558-81.
- 6.Engelmeier RL. Complete-denture esthetics. *Dental Clinics of North America*1996;40(1):71-84.
7. Frush JP, Fisher RD. How dentogenics interprets the personality factor. *J Prosthet Dent* 1956;6:441-9.

8. Shigli K, Hebbal M, Abgadi G, Attitudes Towards Replacement of Teeth Among Patients at the Institute of Dental Sciences, Belgaum, India, J of dental education ;2007;71(11):1467-73.
9. Tjan AH, Miller GD, The JG. Some esthetic factors in a smile. J Prosthet Dent 1984;51:24-8.
10. Bell RA. The geometric theory of selection of artificial teeth: is it valid? J Am Dent Assoc 1978;97:637-40.
11. LaVere AM, Marcroft KR, Smith RC, Sarka RJ. Denture tooth selection: an analysis of the natural maxillary central incisor compared to the length and width of the face. Parts I-II. J Prosthet Dent 1992;67:661-3. 810-2.
12. Goodkind RJ, Schwabacher WB. Use of a fiber-optic colorimeter for in vivo color measurements of 2830 anterior teeth. J Prosthet Dent 1987; 58:535-42.
13. .Dong JK, Jin TH, Cho HW, Oh SC. The esthetics of the smile: a review of some recent studies. Int J Prosthodont 1999;12:9-19.
14. McCord JF, Burke T, Roberts C, Deakin M. Perceptions of denture aesthetics: a two-center study of denture wearers and denture providers. Aust Dent J 1994;39:365-7.
15. Sellen PN, Jagger DC, Harrison A. an assessment of the ability of dental undergraduates to choose artificial teeth which are appropriate for the age and sex of the denture wearer: a pilot study. J Oral Rehabil 2001; 28:958-61.
16. Chaudhary S, Kumar A, Arora H, Correlation of patient's mental attitude with age, sex, and educational level: A survey. Eur J Dent. 2016; 10(1): 23-28.