

Denture vs Natural vs Supernormal Smile: A dentist's perception

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ABSTRACT

Introduction: Complete dentures have been a commonly used treatment modality for the management of completely edentulous patients. Patients have expressed a high level of satisfaction with complete denture construction techniques.

Aim: The aim of the study was to evaluate the dentist's perception on the esthetic choice of completely edentulous patients of three different age groups young, middle and old respectively.

Material and Methods: Dentures were fabricated for 6 patients - young female, young male, middle age female, middle age male, old female, old male respectively with 3 denture concepts in mind- natural, supernormal and denture look respectively. A questionnaire with the patient photographs were circulated amongst dentists and their perception of esthetic look was analysed and Chi-square test and frequency analysis was used to explore the relationship between the variables.

Results: In the present study it was observed that in the group of young females the most preferred smile type was natural smile(72.6%) while the least was the denture look(6.16%). In the group of young males most dentists advised the supernormal look(50.0%) followed by the natural look. Amongst the middle aged females the denture look(48.6%) was most popularly voted while the natural look and the supernormal look(24%) were similarly preferred. The middle aged men looked best in supernormal look (44%) according to most doctors while the look that least suited them was the denture look. The old aged women and men both looked best in the natural look (41% and 50% respectively).

Conclusion: The authors observed that the esthetic perception of dentists vary for each group depending on the age or gender of the patient. Although no particular smile type can be assigned to each gender or age group, it should be noted that with the advent of fixed prosthodontics all patients should not be blindly given the denture look, but the teeth arrangement can be done to suit the patient's esthetic profile satisfying function at the same time.

Keywords : Denture look; Edentulous; Esthetic ; Normal look; Supernormal look;

INTRODUCTION

Complete dentures have been a commonly used treatment modality for the management of completely edentulous patients. Patients have expressed a high level of satisfaction with complete denture construction techniques¹. Functional and comfort-related concerns are two commonly discussed predictors of success of a complete denture patient^{1,2}. The long-term success of dental implants has allowed dentistry to address many of the functional and comfort-related issues that previously resulted in complete denture failures³. As a result, the aesthetic placement of prosthetic teeth may no longer be constrained by arrangement of teeth that prioritise functionality.

Restoration of the esthetics of an edentulous patient has received little attention in modern prosthodontic literature, when compared to comfort and function. Several authors have discovered evidence that the most important factor in complete denture success is aesthetics^{3,4}. The dentate patient has been the focus of aesthetics research. However, because an

edentulous patient's perception of how teeth should look differs from that of a dentate patient, these findings may not be appropriate⁵. Frush and Fischer proposed the natural appearance concept in which anatomic determinants such as gender, age, and personality of a dentate patient were considered^{5,6}. One of the authors coined the term "supernormal" to describe another aesthetic concept. The supernormal concept is defined by Shor and colleagues as "attractive, idealised, and above average dental aesthetics⁷."

This is a patient-centred concept that allows for deviations from the norm in order to provide patients with what they consider to be beautiful. This can be described as "beyond normal" because it may result in an appearance that defies natural laws. This functionally oriented tooth positioning resulted in the development of a third aesthetic concept. This gave people the impression that they were wearing a set of false teeth. This appearance was described by Vig as having a "denture look⁸." Even if a denture appearance isn't ideal, elderly edentulous patients may have grown accustomed to it⁹.

Despite the fact that at least three distinct aesthetic complete denture concepts exist, the authors believe that clinicians have little guidance for this critical aspect of edentulous rehabilitation. By distinguishing the three concepts, however, it may be possible to arrive at more objective definitions and a preference.¹⁰⁻¹⁷ The aim of the study was to allow the clinician to evaluate the patient's appearance more quickly, potentially facilitating successful complete denture aesthetics^{9,18}.

MATERIALS AND METHOD

This study was carried out in a university setting at Saveetha Dental College and hospital, Chennai, India by the department of prosthodontics and implantology. The study consisted of a data collector and 1 data reviewer. This study was approved by the institute ethical board committee (ethical approval number: 0619-0320).

Three sets of dentures were fabricated for 6 patients of three age groups respectively. The six groups were as follows - young female, young male, middle age female, middle age male, old age female, old age male respectively. Three sets of dentures were fabricated for each of the groups bearing three different denture esthetic in mind - natural look, supernormal look, denture look respectively. The photos of the members of the 6 groups were taken at the try - on stage and circulated amongst dentists. The data collected was entered in MS Excel spreadsheet and tabulated. The data was imported in spss software version 23 and variables were defined. Statistical analysis of data was carried out using descriptive frequency analysis and chi square tests. Independent variable was the requirement of prosthetic rehabilitation and dependent variables were age, gender. Data transfer was done using the spss software version IBM 23.

The External validity is that it is applicable to the South Indian population. The disadvantage of this study was the geographical limitation of the study.

RESULT

In the present study it was observed that

In the group of young females the most preferred smile type was natural smile (72.6%) while the least was the denture look (6.16%) (**Graph 1**).

In the group of young males most dentists advised the supernormal look (50.0%) followed by the natural look (**Graph 2**).

Amongst the middle aged females the denture look (48.6%) was most popularly voted while the natural look and the supernormal look (24%) were similarly preferred (**Graph 3**).

The middle aged men looked best in supernormal look (44%) according to most doctors while the look that least suited them was the denture look. (**Graph 4**).

The old aged women and men both looked best in the natural look (41% and 50% respectively) (**Graph 5 and 6**).

DISCUSSION

This survey was created with the understanding that a dentist's perception on the ideal look of a denture may vary according to the age and gender of the patient. With the advent of fixed prosthodontics, the teeth arrangement need not only be carried out keeping functionality in mind but can also be done according to the patient's aesthetics³.

The distinctions between the three denture configurations are purely conceptual. The authors are not endorsing one method of denture aesthetics over another. The photographs were clicked under standard conditions and hence other than the change in oral appearance, the extraoral differences in the photographs were minor and weren't considered significant.

When compared to supernormal and denture look, respondents preferred natural by a 2:1:1 ratio. Hence, the null hypothesis that respondents would have no aesthetic preference was found rejected. The normal look was most preferred by dentists. However a supernormal look was usually preferred for young and middle aged men¹⁹. This could be because the supernormal teeth were more pronounced and enhanced hence giving the male patients a more rugged and tough appearance. However, it is interesting to note that a normal look was preferred for an old aged male patient probably to soften the facial features keeping the age in mind²⁰.

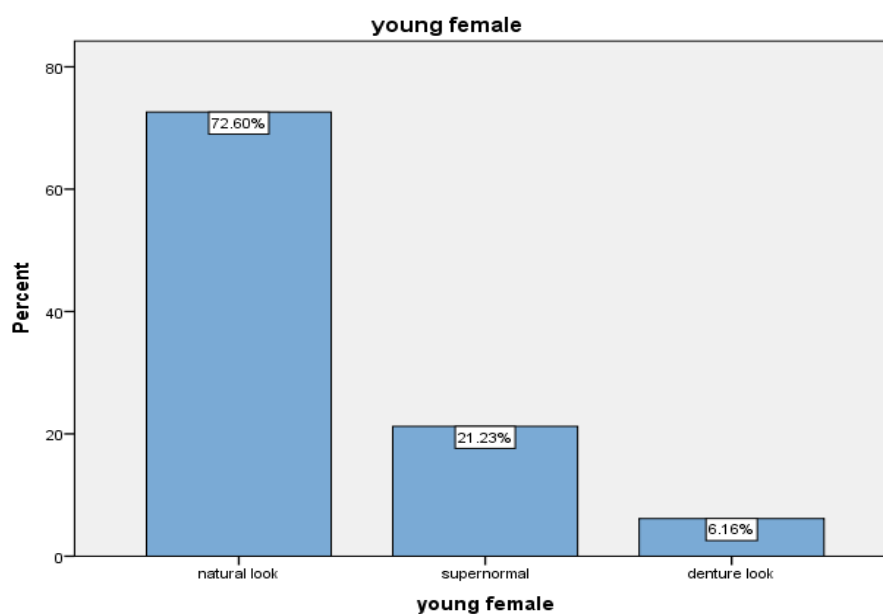
A normal look was more preferred for a young and old aged female. This could be because the denture look didn't provide satisfactory teeth exposure, and the supernormal teeth gave a very rough instead of a delicate appearance to the female patients²¹. However, it is interesting to note that the most participants believed that the denture look suited the middle aged female the most. This could be because of the facial features and smile line of that particular middle aged female patient. It is important to keep in mind that the denture aesthetics in the present study are tested on a single patient of each age-gender category.

The three smile esthetic concepts used in this investigation were previously explained by ²². The preferences of dentist's regarding an exclusively edentulous population were investigated in this study. However, the findings cannot be blindly applied to the general population of that age-gender group. The motto of this study was to emphasise that with the advent of fixed prosthodontics teeth arrangement style, needs to shift from the conventional denture look to other styles such as the supernormal and natural look keeping the patient's age, gender and facial features in mind. A clear preference for a particular concept of aesthetics in theory, would provide dentists with a good starting point for aesthetic evaluation²³. This could help cut down on miscommunication along with chair side time. This study, however, suggests that there is no clear preference. Hence the importance of treatment time along with patient involvement is essential for the success of the treatment^{23,24}.

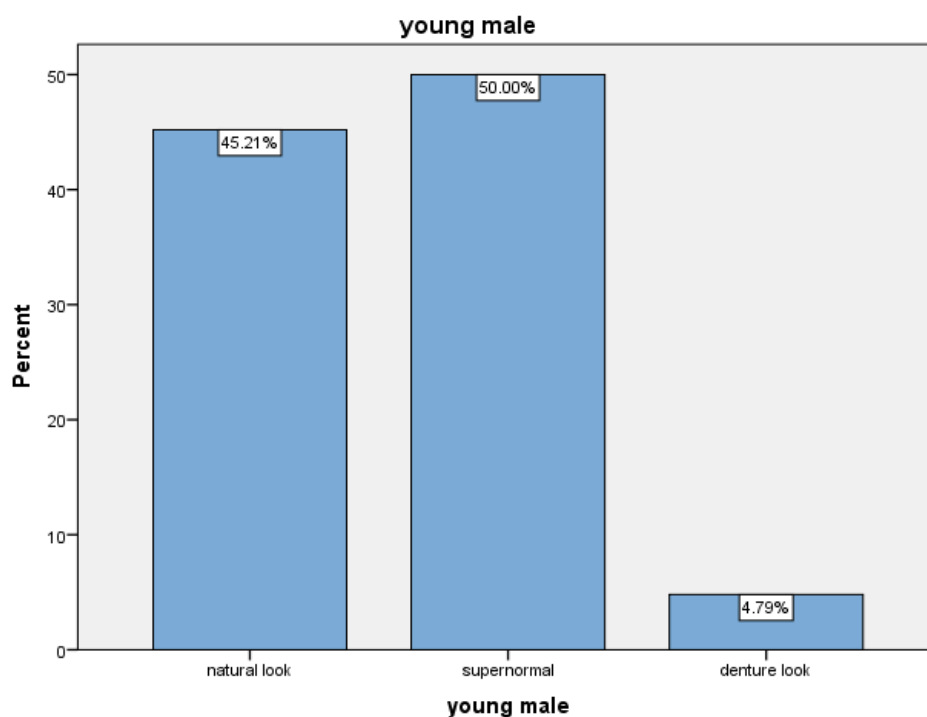
CONCLUSION

Within the limitations of this study, the following conclusions were made:

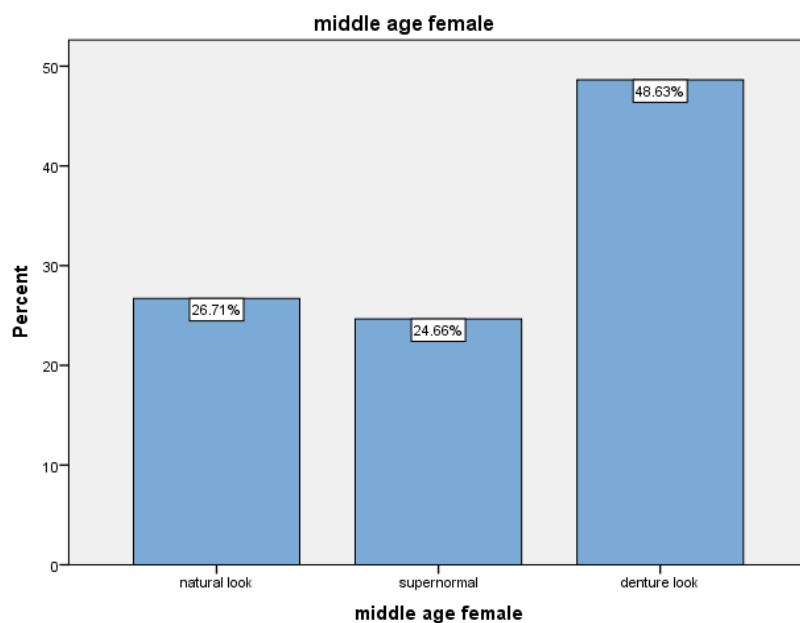
- 1) The age and gender of the patient played a crucial role in the teeth arrangement style of the patient.
- 2) The findings from this study can be used as a baseline to decide the denture aesthetics, however modifications need to be made according to the patient's facial features irrespective of the age-gender group they fall in.
- 3) With the advent of fixed prosthodontics, it is important to move ahead from the conventional denture style of teeth arrangement.



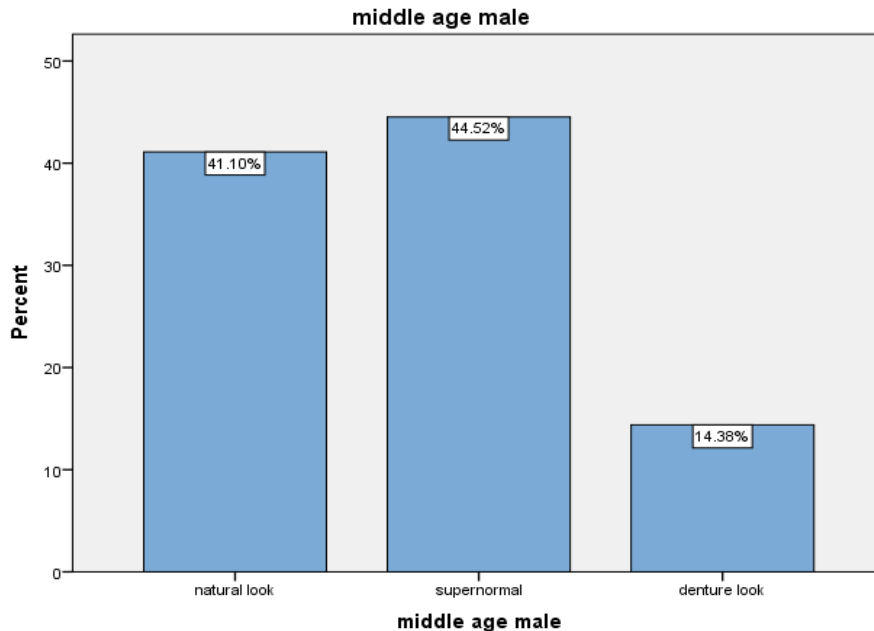
Graph 1 - The graph depicts the esthetic smile type most preferred for a young female. The x-axis represents the percentage of patients while the y-axis depicts the preference of simple type.



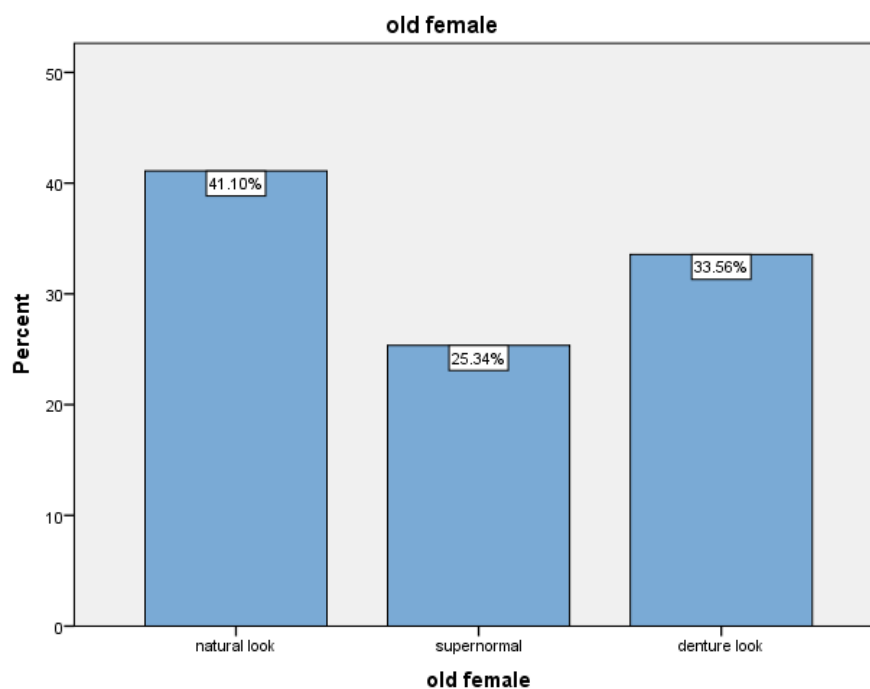
Graph 2 - The graph depicts the esthetic smile type most preferred for a young male. The x-axis represents the percentage of patients while the y-axis depicts the preference of simple type.



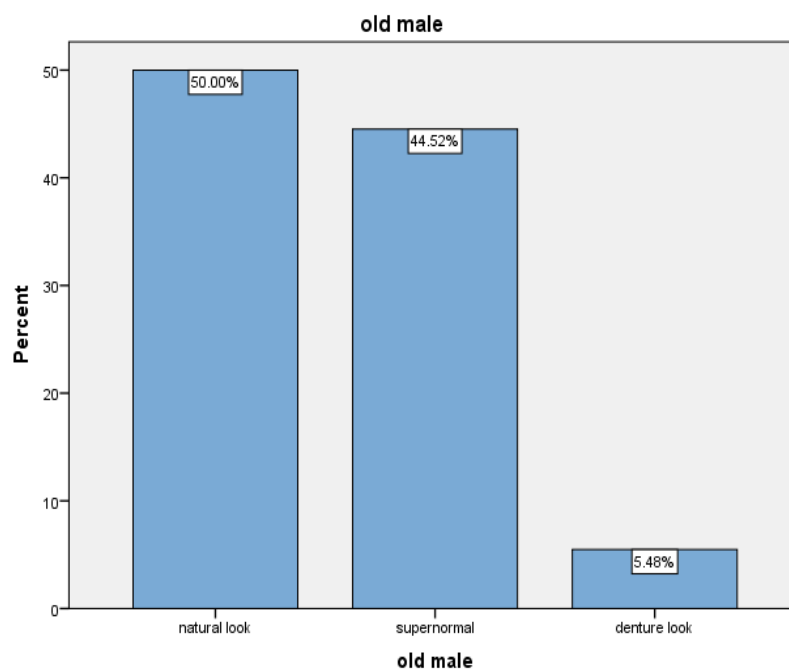
Graph 3 - The graph depicts the esthetic smile type most preferred for a mid age female. The x-axis represents the percentage of patients while the y-axis depicts the preference of simple type.



Graph 4 - The graph depicts the esthetic smile type most preferred for a mid age male. The x-axis represents the percentage of patients while the y-axis depicts the preference of simple type.



Graph 5 - The graph depicts the esthetic smile type most preferred for an old age female. The x-axis represents the percentage of patients while the y-axis depicts the preference of simple type.



Graph 6 - The graph depicts the esthetic smile type most preferred for an old age male. The x-axis represents the percentage of patients while the y-axis depicts the preference of simple type.

Statistics

		young female	young male		middle age female	middle age male	old female	old male
N	Valid	146	146	146	146	146	146	146
	Missing	0	0	0	0	0	0	0
Mean		1.3356	1.5959	2.2192	1.7329	1.9247	1.5548	
Median		1.0000	2.0000	2.0000	2.0000	2.0000	1.5000	
Mode		1.00	2.00	3.00	2.00	1.00	1.00	
Std. Deviation		.59047	.58225	.84276	.69769	.86372	.59920	

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