

The Evaluation of Knowledge of Undergraduate Dental Students Regarding the Preference for Complete Denture Characterization.

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Abstract: Patients with completely edentulous upper and lower arches require more attention to fulfill their requirements regarding aesthetics and the natural appearance of a denture. However, the undergraduate dental students have limited or no knowledge about the characterization of complete denture. This cross-sectional study aimed to assess dental students' knowledge and education regarding their preference for denture characterization. The majority of undergraduate dental students from second-to-fourth year registered at ABSMIDS dental college from 2016 to 2018 at Nitte University were invited to participate in this study. A structured questionnaire, which included ten basic questions about denture characterization, was prepared each question provided with four different options. The Questionnaire was given to 100 undergraduate dental students and data was obtained. The questionnaire findings were formulated in pie charts and graphical representations. The findings indicate that students care for gingival appearance, to follow the patient's preference regarding denture appearance, for marginal gingival contouring are generally favorable. Students understood the importance of aesthetics and the natural appearance of a denture. It is necessary to gain more knowledge at an undergraduate level about denture characterization which, is an important step that enhances the aesthetics in a complete denture. These findings are important for institutions to implement or refine in the undergraduate dental curriculum.

Keywords: Characterization, Denture Esthetics, Questionnaire, Dental Students.

INTRODUCTION

Partial or total loss of teeth is a major public health problem. The number of edentulous patients increased day by day because of the loss of teeth due to caries, trauma, periodontitis, attrition, abrasion, etc. The loss of dentition has a major psychological impact on many patients as their aesthetics are compromised. oral health plays a major role in a subject's socializing and dentofacial self-pride. Patients with completely edentulous upper and lower arches require more attention to fulfill their requirements regarding aesthetics and the natural appearance of the denture. Hence characterization of the denture is done to accomplish this harmony. Characterization of the denture base is a denture base colored in such a way that it imitates the appearance of natural oral tissues concerning color and shade.¹ Various methods have been implemented for the reproduction of gingival characterization in artificial dentures.^{2,3} Altering the position and size of teeth, according to the patient's age, creates harmony and natural appearance in the complete denture. Whereas soft tissue characterization involves altering the contour of gingival level, creating root morphology, providing gingival pigmentation, etc. However, due to an abundant number of completely edentulous arch patients, with their increased demand for a natural appearance, it is necessary for a dentist who graduates from the dental school to be trained in the theory and the practice of teeth setting successfully along with the knowledge of denture characterization procedure.⁴⁻⁶ Most of the times the dentist may be able to give almost identical and satisfying complete dentures to their patients. The level of education, age and sex are known to have an effect on the person's satisfaction with his or her oral appearance.⁴ It is the responsibility of the dentist to inform the patient that his or her complete dentures can be characterized to suit better appearance.⁷⁻¹⁰ An operator can take the liberty to arrange the teeth in an esthetic and acceptable form this will have a positive effect on the patients' self-esteem. Since esthetics is an essential aspect in dental practice, the aim of the present survey is to evaluate knowledge of undergraduate students regarding their preference for complete denture characterization.

MATERIALS AND METHODS

Participants

This was a cross-sectional study that involved a combination of knowledge and awareness of undergraduate students during their training period at the university of Nitte, A. B. Shetty dental college in 2017/2018 towards denture characterization. Dental students from the first year to the final year were invited to participate in the study. This analysis used a 10-item questionnaire distributed to 100 undergraduate students of the above dental school. The questions focused on different

esthetic factors involving the characterization of complete denture. The questionnaire consisted of four measures to pool the questions.

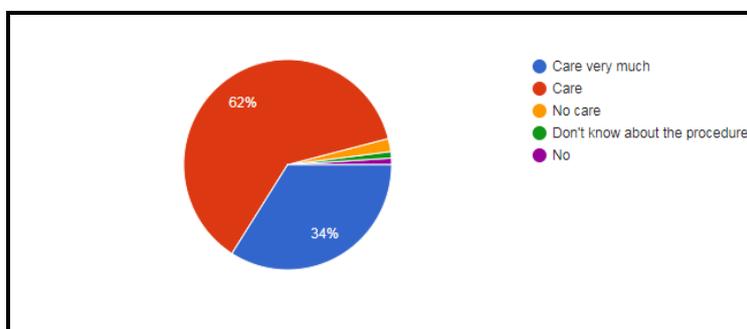
1. Care very much
2. Care
3. No care
4. Don't know about the procedure

The student was made aware of the purpose of the study in advance and were asked to complete the questionnaire, they were questioned on the importance of gingival appearance, marginal gingival contouring, appearance of the roots, gingival stippling, gingival zenith level, carving of the palatal rugae in waxed complete denture and patient's preference regarding denture appearance, tooth characterization according to the personality of the patient and the necessity for gingival pigmentation for more natural appearance of the denture. The data obtained from these questionnaires were assimilated and studied. Data analysis was conducted using SPSS software.

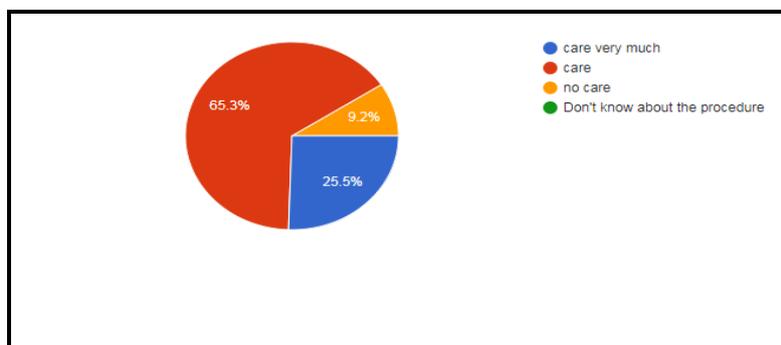
RESULTS

The questionnaires were completed by all the 100 students. The results of the present study were formulated using pie charts and graphical presentations in Microsoft excel sheet, using the acquired data as follows-

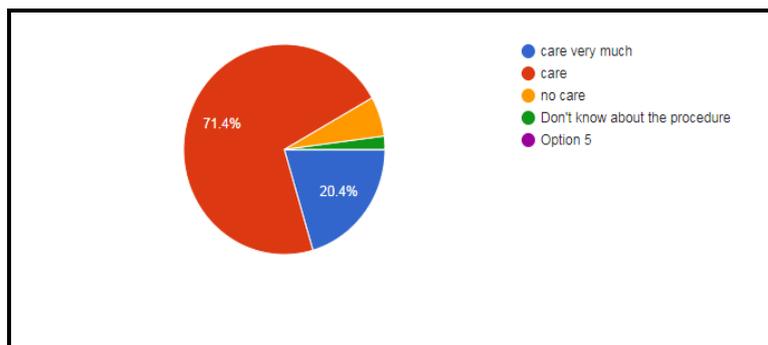
1) Do you care about gingival appearance in complete denture? Figure 1



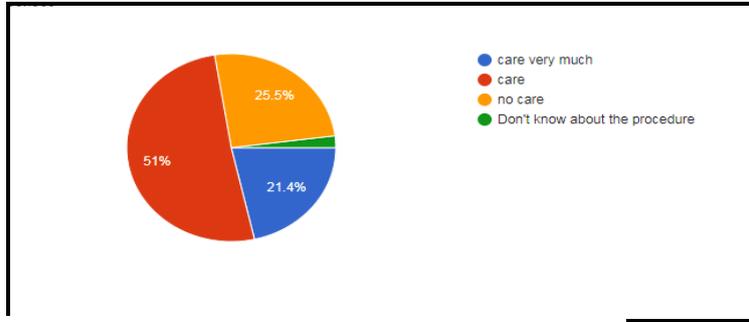
2) Do you care to follow patient's preference regarding denture appearance? Figure 2.



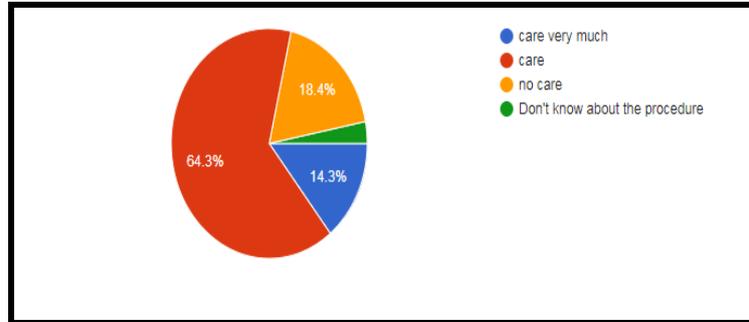
3) Do you care about marginal gingival contouring in waxed complete denture? Figure 3



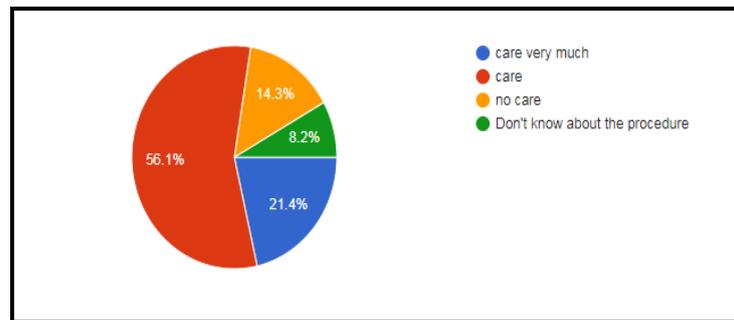
4) Do you care about carving the appearance of roots in waxed complete denture? Figure 4



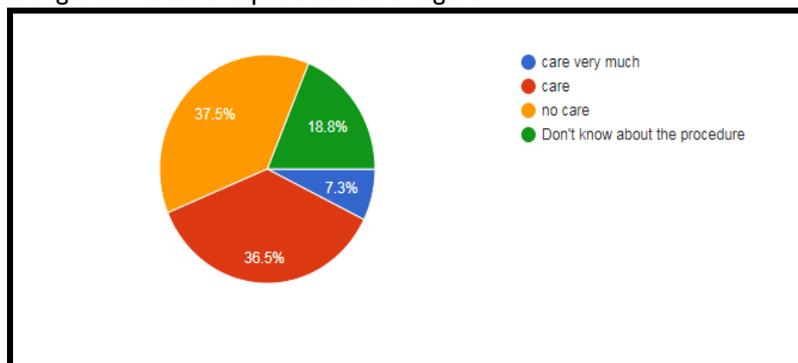
5) Do you care to give gingival stippled appearance in waxed complete denture? Figure 5



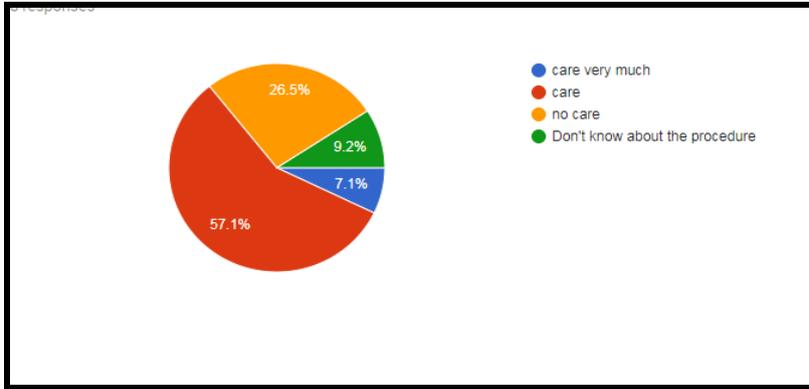
6) Do you care about gingival zenith level while carving the waxed complete denture? Figure 6



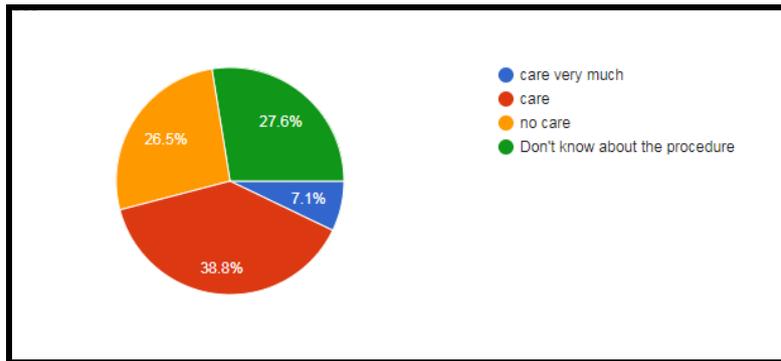
7) Do you care to carve palatal rugae in waxed complete denture? Figure 7



8) Do you care to give gingival contouring according to the age of patient? Figure 8



9) Do you care to give tooth characterization according to personality of the patient?
Figure 9



10) Do you care to give gingival pigmentation for natural appearance of complete denture? Figure 10

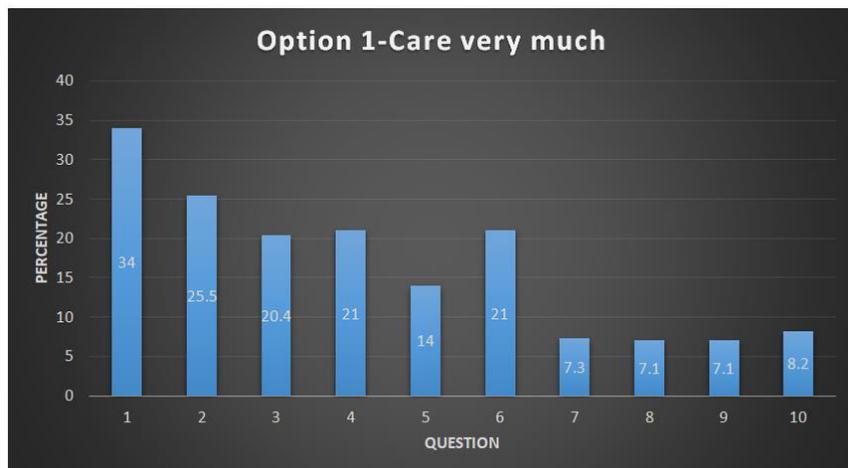
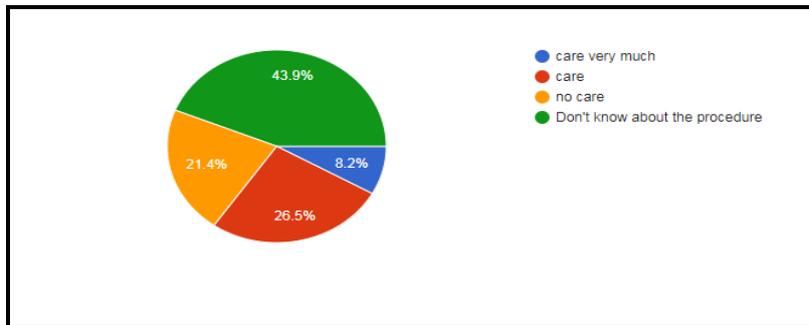


Figure 11

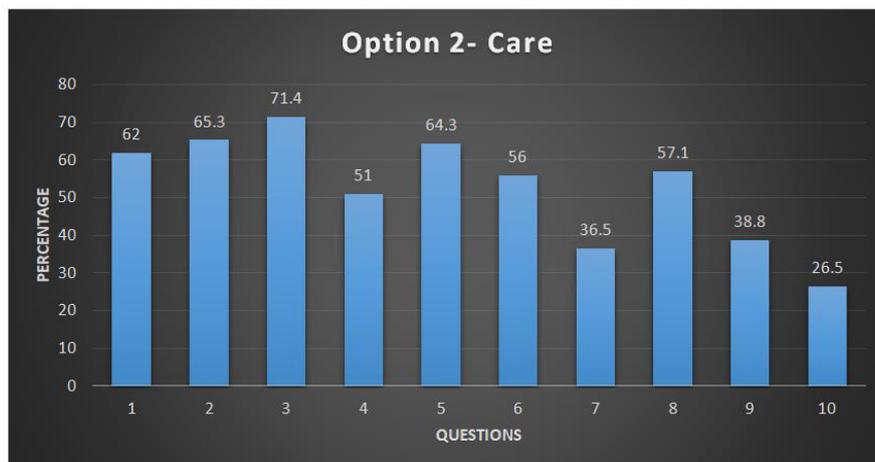


Figure 12

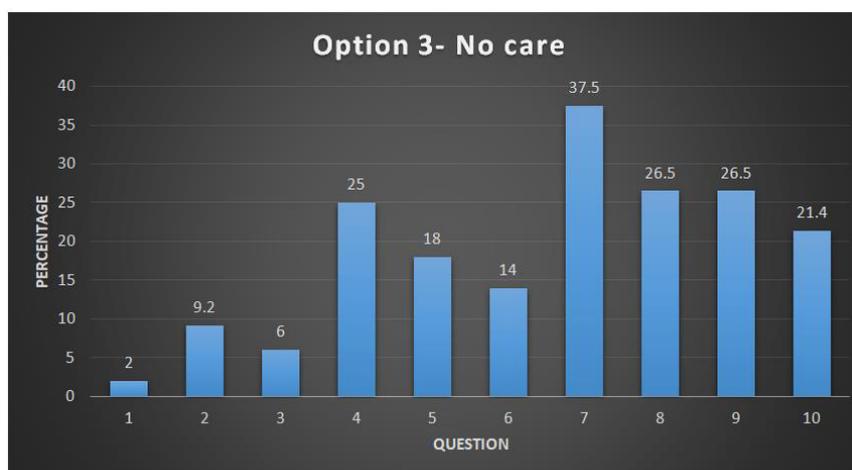


Figure 13

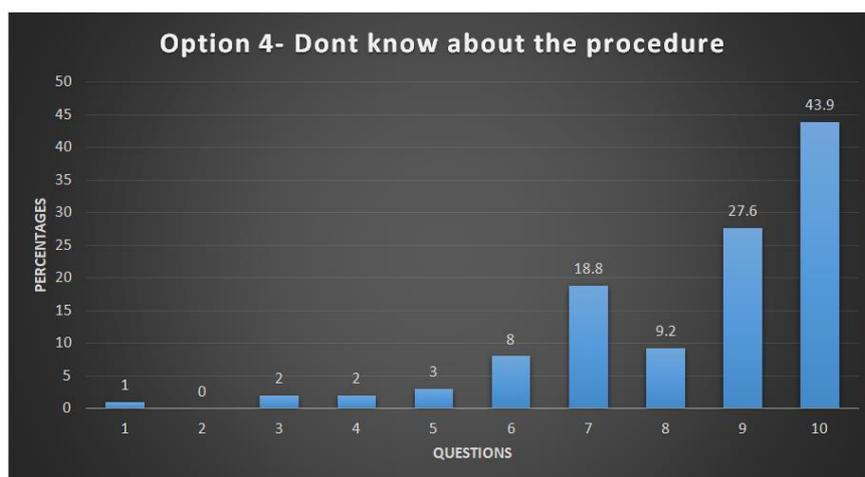


Figure 14

DISCUSSION

Denture esthetics is a combination of art and science in prosthodontics. It is the effect produced by a denture that improves the looks of the patient. Attitudes and perceptions toward dental appearance differ among populations and among individuals in a population.^{5,6} The present study includes data submitted by 100 undergraduates who completed a questionnaire consisting of different factors for the characterization of complete denture. From the study, it was identified that 62% of the students care for gingival appearance in complete denture whereas 34% of students have given extra attention to gingival appearance. As in the edentulous patients, denture characterization is the only way to represent the aesthetics of gingiva and teeth. This extra

attention would help in enhancing the personality of the patient (fig 1). Understanding the patient's perspective about denture appearance helps in fulfilling his or her needs regarding appearance. Incorporating such a few suggestions in the trial stage helps to boost the patient's confidence. 65.5% of students care to follow a patient's preference regarding denture appearance, 25.5% of students give extra attention to follow the patient's preference regarding complete denture appearance. 9.2% of students did not care about the patient's preference (fig 2). The reflection of inflamed or bulbous gingiva can also be reproduced by leaving more interdental and marginal wax. This creates a more natural appearance in the complete denture. 71.4% of students care for marginal gingival contouring and 20.4% care very much. 6% of students did not care about marginal gingival contouring (fig 3). Carving the appearance of roots in waxed complete denture creates a more natural-looking denture rather than the flat labial surface of the denture. In maxillary denture, the canine eminence is most marked. Lateral incisor eminence is small. According to the present study, 51% of the students care for the appearance of the roots and 21.4% of students care very much about root appearance. 2% of students did not know about the procedure (fig 4). According to Suresh Nayar and Nicholas et al gingival stippling is a characteristic feature of the healthy attached gingiva.⁷ Copying gingival texture contributes to the natural appearance of labial flanges in the complete denture. 14.3% of the population care very much about stippling, 64.3% of students care to give the appearance of stippling and 18.4% of students did not care about gingival stippling in the complete denture (fig 5). Gingival zenith level of an individual tooth plays an important role in appearance in the complete denture. Each tooth zenith level is different from others. This harmonious arrangement of zenith creates a more natural appearance in the complete denture. In the present study 21.4% students care very much to follow gingival zenith level in the waxed complete denture, 14.3% of students did not care to follow gingival zenith level (fig 6). According to Frush and Fisher's age, gender and personality can be used as a guideline for tooth selection and characterization to enhance the natural appearance of the individual. As age advances, more amount of gingival recession can be seen in patients. 51% of students care to follow age criteria to give the natural appearance in patients, whereas 26.5% of students did not care to follow gingival contouring according to the age of the patient (fig 8). Tooth characterization can be achieved in a waxed complete denture according to the personality of the patient. Prominent line angles denote aggressive personality whereas rounded line angles denote mild personality of the patients. 38% of the study students care to follow tooth characterization whereas 26.5% of students did not care to follow this criterion. 27.6% of the students do not know about the procedure of tooth characterization (fig 9). Gingival pigmentation also plays a major role in denture appearance. To achieve the maximum desired result, these criteria can be followed. 43.9% of students did not know about the procedure which is carried out to reproduce gingival pigmentation. 26.5% of students care to follow this criterion. 21% of study students did not care about gingival pigmentation (fig 10). In the present survey study the frequency of usage of option "care" in all the questions than the option "care very much" (fig 11 and 12). The option "don't know about the procedure" was least frequently selected by the participants (fig 14).

CONCLUSION

Denture characterization is the most important step, which enhances the aesthetics and fulfills the expectations of the patient. Hence it is absolutely necessary to gain more knowledge at an undergraduate level about both tooth characterization and soft tissue characterization to fulfill patient's requirements about natural denture appearance.

From the conducted survey, the following conclusions can be drawn-

1. 65% of students care to follow a patient's preference for denture esthetics whereas 9% of students did not care about the patient's preference.
2. More than 50% of students care about esthetic factors such as marginal gingival contouring, the appearance of roots, gingival stippling appearance and gingival zenith level in the complete denture.
3. 27% of students did not care to give tooth characterization according to the personality of the patient.
4. 49% of students are unaware of the characterization procedure of gingival tissue whereas 21% of students did not care to follow the procedure

CONFLICT OF INTEREST

Conflict of interest declare none.

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