

Awareness on various retention aids used for complete dentures among dental practitioners

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ABSTRACT

Introduction: Complete dentures are removable devices that are used to replace missing teeth. There are several difficulties associated with denture retention. This survey assesses how aware current dental practitioners are, regarding these problems associated with retention of complete dentures and what kinds of retention aids are used for the same. **Aim:** The study aims to assess the level of awareness regarding the denture retention aids used for complete denture retention, among dental practitioners. **Materials and Methods:** A questionnaire was prepared and distributed to 100 dental practitioners in Saveetha Dental College. The resulting data were analyzed using statistical software, to estimate the awareness levels and further promote the use of retention aids for complete dentures. **Results:** Regarding factors that affect denture retention, 55% of respondents opined that undercuts reduced the quality of denture retention over reduced bone height, reduced bone width, and bony protrusions. **Conclusion:** There is a significant level of awareness on the various retention aids used for complete dentures among dental practitioners.

KEY WORDS: Awareness, Complete dentures, Retention

INTRODUCTION

Complete dentures are removable devices that are used to replace missing teeth and restore one's appearance and function. How adequately, a suitable denture has been fabricated, depends on several factors among which denture retention is important. Besides, there are several difficulties associated with denture retention, where the denture must resist any movement from the supporting tissues.^[1]

High surface tension, gravity (for the maxillary denture), and increased viscosity of saliva are some physiological and physical factors, while undercuts, reduced bone height, and width, undercut, and bony protrusions are some mechanical features that deter denture retention.^[2] A common issue related to unsuccessful denture retention is bone resorption, due to delayed denture replacement, after patients lose their teeth. This alveolar resorption, which occurs at an accelerated rate in an osteoporotic population, effaces

the anatomical landmarks which are essential for the border seal that ensures effective denture retention.^[3]

A range of denture retention aids are currently in use for enhanced complete denture retention. Denture adhesives are commercially available non-toxic soluble substances that are applied to the tissue-denture interface to improve denture retention. Implants, placed in the upper and lower jaws, help secure overdentures which rest directly on the gums. Magnetic retention of dentures is also used.

MATERIALS AND METHODS

A questionnaire-based study was conducted to assess the subject related practical knowledge among the practicing dentists in Saveetha Dental College.

The questionnaire started with an enquiry about basic data regarding the respondents. Then it moved on to enquiring about their attitude, knowledge, and awareness regarding the use of denture retention aids.

Inclusion Criteria

The questionnaire was distributed to 100 subjects, including interns, postgraduates, and staffs.

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Exclusion Criteria

Students from the 1st to the 4th year were not included in the study.

The survey thus comprised 20 objectives regarding retention of dentures covering aspects including factors affecting the quality of denture retention, recommended denture retention aids and gold standard of denture therapy, retention for dentures in case of grossly decayed teeth, use of implants for denture retention, use of radicular attachments for denture therapy, and processing methods for denture retention. The results obtained were statistically analyzed and tabulated to assess the percentile of responses for each question, from all the 100 responses that were received.

The main attempt of the study was to identify if there is a need to take measures that would increase the awareness related to the use of retention aids for complete dentures.

The present study was thus conducted to assess the awareness of complete denture retention aids used by dental practitioners, where this assessment would hint at the extent to which patients can be successfully treated with complete dentures. At the same time, a result indicating a lack of general awareness on retention aids used for complete dentures would cue at what measures should be taken to improve the same.

RESULTS

Regarding factors that affect denture retention, 55% [Figure 1] respondents opined that undercuts reduced the quality of denture retention over reduced bone height (36%), reduced bone width (7%), and bony protrusions (2%).

The most preferred additional denture retention aid that 73% [Figure 2] respondents chose was denture adhesives. This is followed by implants (19%). The least preferred were soft liners (8%).

Tissue supported dentures have been recommended by 68% [Figure 3] as the gold standard model of denture therapy. About 17% of the respondents have stated that implant-supported dentures can be recommended while the remaining 15% have opted for adhesive aided dentures.

About 89% of the subjects have reported the use of four implants for effective denture retention [Figure 4], while 7% opted for three implants while 4% opted for two implants. None have opted for the use one implant.

Radicular attachments for denture retention are preferred by 56% as effective denture retention aids [Figure 5], while 21% has stated it to be very effective, 14% somewhat effective, and 9% not effective.

About 69% of the respondents have affirmed that grossly decayed teeth with a healthy periodontium can aid denture retention while the remaining 31% have denied that denture retention is possible in this case [Figure 6].

According to 89% of the respondents, processing methods can affect denture retention while the remaining have responded on the negative.

DISCUSSION

At present, with an increased worldwide population of older people due to longer life expectancy rates of today, there is an increased need and use of complete

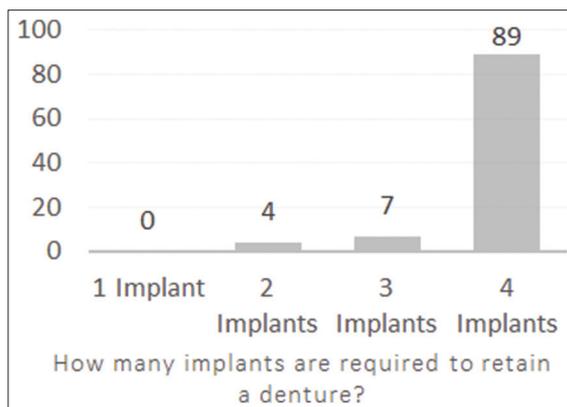


Figure 1: Implants required to retain denture

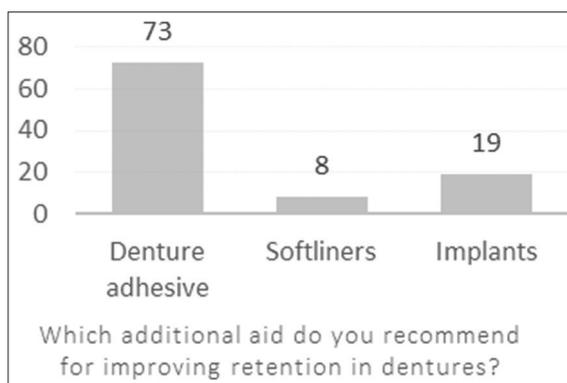


Figure 2: Additional retentive aid

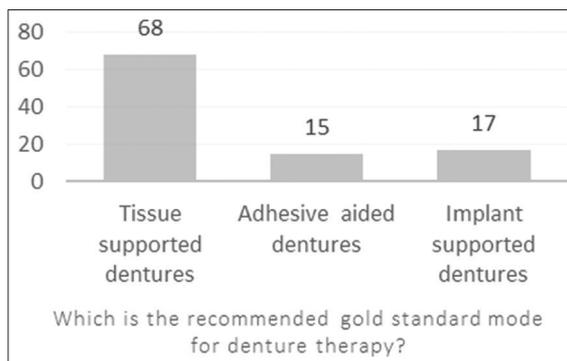


Figure 3: Gold standard therapy for treatment

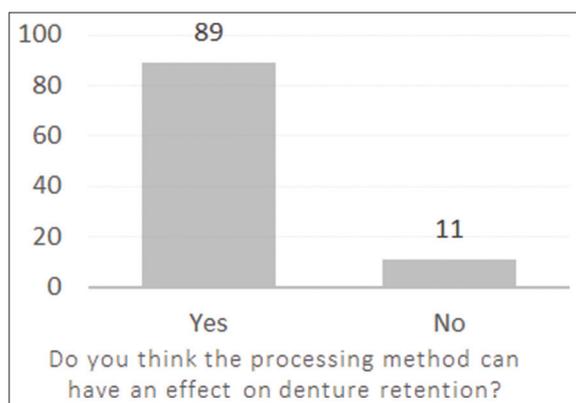


Figure 4: Processing method

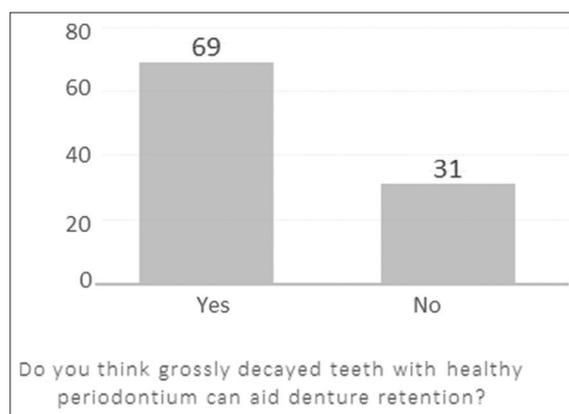


Figure 6: Grossly decayed teeth providing retention

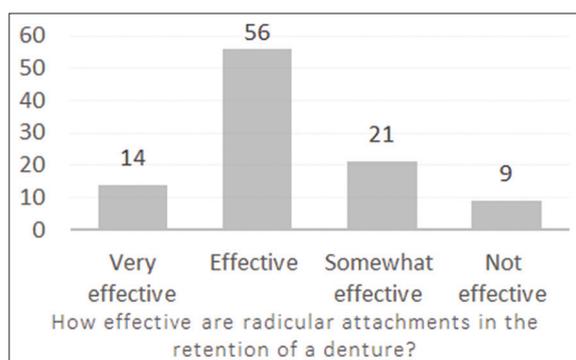


Figure 5: Radicular attachments

dentures, for the old. Specifically, a well-formed mandibular ridge and accuracy of jaw relations are positive indicators for a successful denture therapy.^[4] Besides, with developed and novel solutions for providing effective dentures for missing teeth, there is an increased incidence of this being practiced by many who are not thoroughly knowledgeable about the same.

Some common factors affecting denture retention include physiological factors such as ridge characteristics and condition of mucosa and submucosa, mechanical factors such as undercut, balanced occlusion, denture adhesives, magnets, and springs, surgical factors such as implants, ridge augmentation procedure, and vestibuloplasty, and some psychological factors.^[5]

A cross-sectional study conducted to compare how effective three different processing methods were, validates that the processing technique does affect denture retention.^[6] In a similar study, the accuracy of processing techniques through number of occlusal interferences and increase in vertical dimension after denture processing was assessed, which gave results similar to the former.^[7]

Yet another study conducted describes the use of radicular stud attachments as an alternative method to

obtain improved retention and aesthetics.^[8] Denture retention in grossly decayed teeth with healthy periodontium is also feasible with combined implant and tooth support.^[9]

Another study conducted to assess the effectiveness of the use of implants on denture retention concludes that planned maxillary overdentures supported by implants are a successful treatment model.^[10] A similar study has established that the stability and retention of implant overdentures are affected by implant number, distribution, and abutment type.^[11]

The present study hints at the fact that as there are more and more patients who require denture therapy, practicing dentists are also expanding their knowledge base to be up to date with the currently available and upcoming advancements related to providing denture therapy.^[12] Related problems faced in the process like denture retention are also addressed currently in several ways (which was included in the present study). In the constantly evolving field of prosthodontics, it is essential that practitioners make sure to update themselves regarding novel advancements^[13] in the field. In fact, the same traditional denture preparation techniques are revamped to introduce conventional ways, in modern-day practice,^[14] for increasing the standards of their own treatment patterns to provide nothing but the best from their side, for their patients. Especially for the older population, a holistic improved denture therapy improves their overall nutritional status as well, which is a much-needed benefit today.^[15]

CONCLUSION

The study is concluded with the observation that there is a significant level of awareness related to the use of dentures, and retention aids used for the same, among dental practitioners, in Saveetha Dental College. The subjects also show a willingness to improve their knowledge on some gray areas, which many have admitted to be working at. Besides, to further increase

their knowledge base, and to aid them in doing so, they should be encouraged to conduct and attend more hands-on workshops and seminars on the topic of interest here. However, the study was conducted on a limited population, that too, with a questionnaire, that could be too narrow to assess the wide extent of knowledge and experience of the practitioners. For more widespread results, it will be necessary to expand the study to a global level.

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