



RESEARCH ARTICLE

KNOWLEDGE, AWARENESS AND PRACTICE REGARDING THE USE OF FLEXIBLE DENTURES  
AMONG DENTAL PRACTITIONERS

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ABSTRACT

**Aim:** The aim of this study was to assess the knowledge, attitudes and awareness of the use of flexible dentures among dental practitioners.

**Material and Methods:** This descriptive cross-sectional study was conducted at Saveetha Dental College and hospitals, Chennai. The study instrument was a structured, self administrable questionnaire consisting of eight multiple choice questions (MCQs), encompassing major aspects of flexible dentures conducted through an online survey.

**Results:** The survey was conducted among 100 dental practitioners. The study included participants of which 93% were female and 7% were male. 49% of the respondents have clinical experience less than 5 years. In regard to the choice of the RPD types to be used, 48% of the respondents chose metallic framework, followed by acrylic and flexible. 61% of the respondents had knowledge on the use of flexible denture. 52% of the population was aware of the commercial name of the product flexible dentures. 35% of population has never provided flexible dentures. 63% of the population chose flexible dentures, for patient comfort. 39% of the population planned to choose flexible dentures for both temporary and permanent solutions.

**Conclusion:** Although the awareness among the dental practitioners is satisfactory, the use of flexible dentures should be reinforced and followed on a regular basis in the curriculum.

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INTRODUCTION

Functional and esthetic rehabilitation of a completely or partially edentulous patient includes a battery of treatment modalities varying in the degree of invasiveness and reversibility along with the risks and benefits (Hill, 2014). Thermoplastic RPDs have been mostly known as flexible dentures but other commonly used terms are non-clasp dentures, metal-free dentures, clasp free dentures and non-metal clasp dentures. Dentures made of these materials should show some advantages over the conventional acrylic ones (Fueki, 2014). Particularly for the patients facing partial edentulism, the metal clasps of removable partial denture prostheses (RPDPs) in the esthetic area seem to be undesirable for both esthetic and psychological reasons with an increasing number of them avoiding and disliking their use (Ardelean, 2007). Since the materials are flexible, undercuts of the alveolar ridges can be engaged for improved retention and insertion in the mouth is much easier, which is especially

important in cases of microstomia (e.g. scleroderma) (Negrutiu, 2005). Since the materials are resistant to plastic deformation and fracture, the denture base may be thinner than in classic acrylic dentures (Singh, 2013). Also, there is no risk of any allergic reaction (no residual monomer) with improved esthetics due to the transparency of the material that reflects the shade of the mucosa and the absence of metal clasps which makes dentures almost invisible in the oral cavity (Kalaskar, 2013). From the 1950s thermoplastic resins have been available and can be used to fabricate RPDs or removable completed denture prostheses (RCDs) (Tannamala, 2012). Flexible RPDs typically do not contain any metal elements (unless a metal structure is combined with thermoplastic retentive elements) and tooth colored clasps are an esthetic option (Fueki, 2014). Even though flexible RPDs have been available to the dental profession for almost 65 years and have received much attention in the dental advertisements over the past two decades there is almost no evidence-based information in the relevant literature concerning clinical performance, follow-up or incidence data for these prostheses (Takabayashi, 2010). Many types of thermoplastic materials like nylon (polyamides), polyesters (polyethylene

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terephthalate), polycarbonates, acrylics (polymethyl methacrylate), polypropylenes and acetal resin (polyoxymethylene) can be used to fabricate flexible RPDs. From the above mentioned, the lack of data in the relevant literature is obvious and information on attitudes, knowledge and awareness of dentists towards flexible RPDs. The purpose of this study was to assess the knowledge, attitudes and possible differences in the use of flexible RPDs among dentists in Saveetha dental college and other private organizations in Chennai.

## MATERIALS AND METHODS

This descriptive cross-sectional study was conducted at Saveetha Dental college and hospitals, Chennai. The sample size was 100 which had participants such as the interns, post graduates and clinical staffs. The study instrument was a structured, self administrable questionnaire consisting of eight multiple choice questions (MCQs), encompassing major aspects of flexible dentures such as the definition, diagnostic modalities, knowledge and attitude about the same. An online survey was conducted and they were asked to fill the questionnaire for which ample time was provided. The statistical analysis on the gathered data was carried out and the data was expressed as mean or percentage of participants correctly responding to each question.

## RESULTS

The survey was conducted among 100 dental practitioners. The area of specialty of the practitioners varied from general dentists to prosthodontist. This sample size of this study is sufficient to give an idea of the current practice of management of flexible dentures.

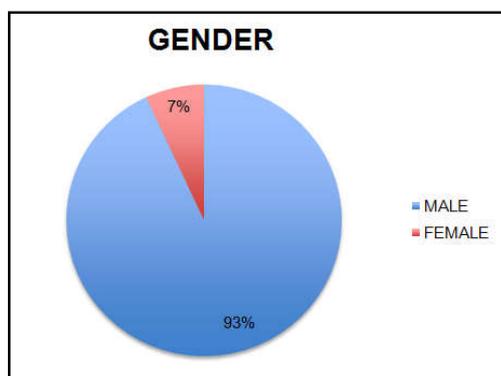


Figure 1. Shows the gender participation in the study

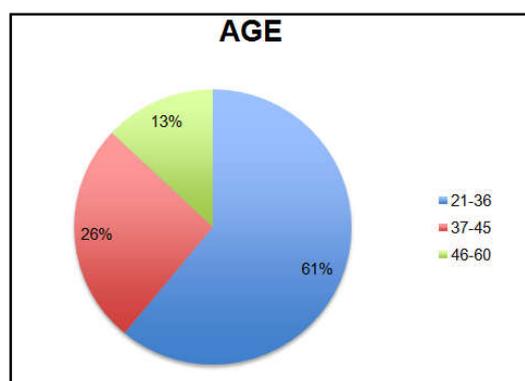


Figure 2. This chart shows the age distribution among the respondents in this study

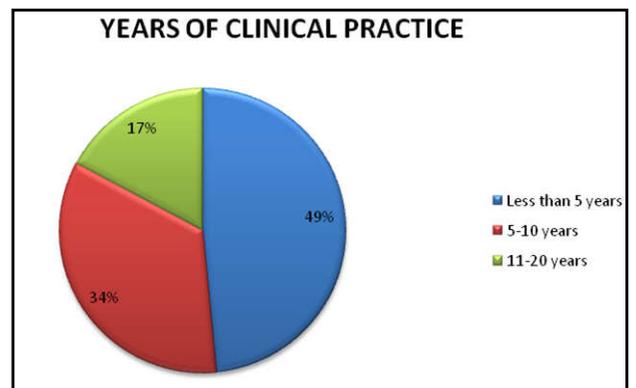


Figure 3. The years of clinical practice and experience has been shown in the above figure

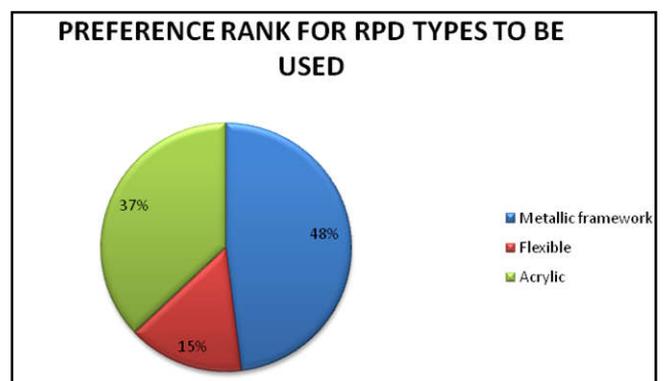


Figure 4. The preference rank for the type to be used is shown in the above chart

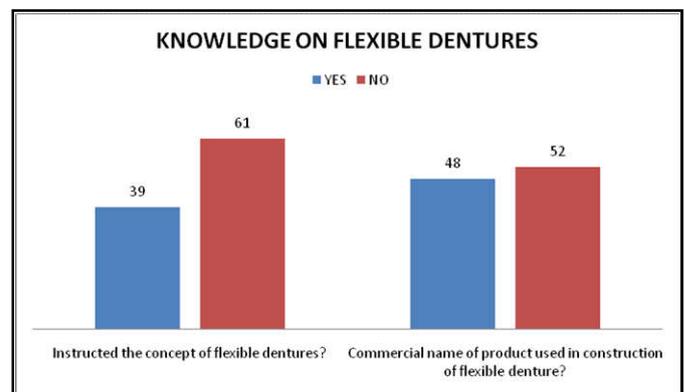


Figure 5. Shows the distribution of knowledge among the practitioners about the use of flexible dentures

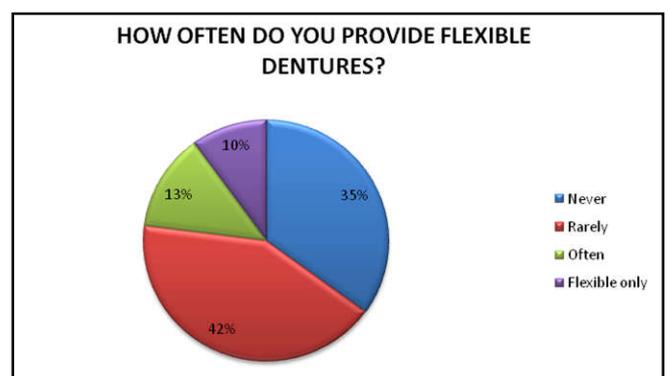


Figure 6. The frequency of using flexible dentures has been shown in the above figure

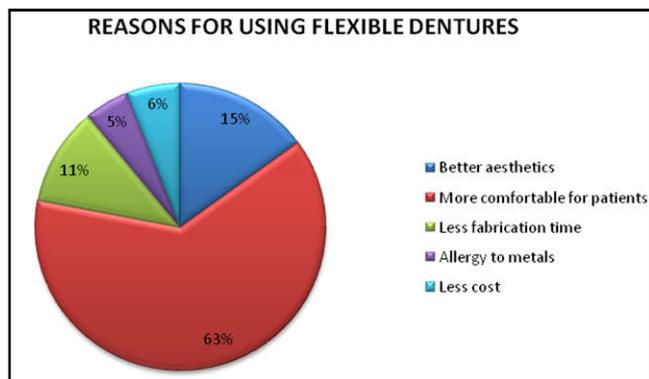


Figure 7. The reasons for using this type of denture has been illustrated in the above figure

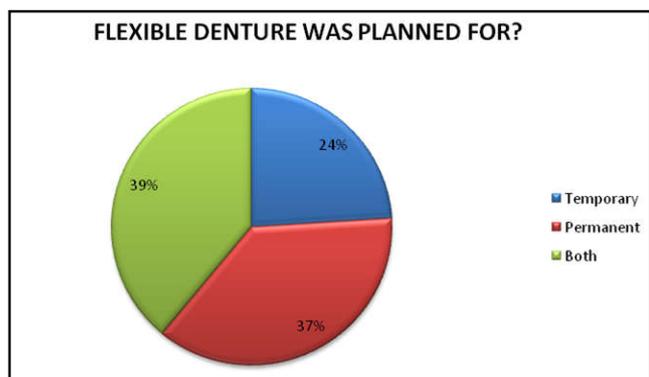


Figure 8. The planned use of the flexible denture is shown in figure 8

The study included participants in which 93% were female and 7% were male. 49% of the respondents have clinical experience of less than 5 years. In regard to the preference of the RPD types to be used, 48% of the respondents chose metallic framework, followed by acrylic and flexible. 61% of the respondents were instructed about the concept of flexible denture. 52% of the population were aware of the commercial name of the product flexible dentures. 35% of population have never provided flexible dentures. 63% of the population chose flexible dentures, for patient comfort. 39% of the population planned to choose flexible dentures for both temporary and permanent solutions.

## DISCUSSION

This study assessed the attitudes and knowledge about flexible RPDs among dentists in two European countries, namely Greece and Croatia. The study included participants in which 93% were female and 7% were male. 49% of the respondents have clinical experience of less than 5 years. In regard to the preference of the RPD types to be used, 48% of the respondents chose metallic framework, followed by acrylic and flexible. 61% of the respondents were instructed about the concept of flexible denture. 52% of the population was aware of the commercial name of the product flexible dentures. 35% of population has never provided flexible dentures in their practice. 63% of the population chose flexible dentures, for patient comfort. 39% of the population planned to choose flexible dentures for both temporary and permanent solutions. Older practitioners provide flexible dentures in higher percent, meaning that younger practitioners are more reluctant to adopt new techniques. If years in practice mean more experience for the respondents, then practitioners with more experience seem

to provide flexible prostheses more easily than the less experienced. Specialization was found to play a negative role in the provision of flexible dentures since more general practitioners provided flexible dentures to their patients than specialists. Because there is still not enough clinical evidence for the use of flexible dentures, promotional literature may affect more general practitioners to adopt this treatment method, as Hill et al. noted (Hill, 2014). Awareness plays a significant role in the provision to flexible dentures, as is discussed below. In general, 1 out of 3 respondents prefer flexible dentures and acrylic prostheses in place of metallic ones and this is in agreement with the results of Pun et al. (Pun, 2011). The decision in Greece was made mostly by the dentists, whereas in Croatia the patients seemed to affect the decision equally to dentists. This is probably due to some differences in the provision of dental care between the two countries. Flexible dentures planned to be used primarily as provisional prostheses in Greece and as permanent in Croatia, although in total, permanent and provisional use was found equal. The main reasons for providing flexible prostheses were comfort for the patient, esthetics and cost. The problems related to the flexible dentures were discoloration of the base, fracture of clasps and debonding of teeth. The reasons for replacing flexible prostheses were reported to be related in a decreasing order with problems in abutment teeth, denture base material and finally the supporting tissues. Instructions for their use are given by manufacturing companies, dental laboratories and not by academic institutions. That could be the reason why younger, less experienced dentists do not recommend flexible prostheses. Also, little evidence exists on their clinical usage, performance and duration. For these reasons, clinical studies are needed to assess their value in long term performance and patients' satisfaction along with techniques and to overcome material inherited problems.

## Conclusion

Although the awareness among the dental practitioners is satisfactory, the knowledge, attitude and awareness on the use of flexible dentures provide a need to educate and motivate them for the management of the same on a regular basis in the academical curriculum. Further, seminars and workshops should be held to train dentist to improve their skills on flexible dentures.

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