

## Original ARTICLE

### Knowledge on impression techniques and materials used in fixed partial dentures

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#### ABSTRACT:

**Background:** Prosthodontics, as a speciality, has evolved abundantly in past few years. Materials and technological advances keep changing the face of every field every day. The main objective of impression techniques has been to attain better retention of the denture. Hence; the present study was undertaken for assessing the knowledge on impression techniques and materials used in fixed partial dentures. **Materials & methods:** A total of 20 practitioners were enrolled in the present study. Complete demographic details of all the participants were obtained. A questionnaire was framed and was given to all the participants for obtained data in relation to their knowledge on impression techniques and materials used in fixed partial dentures. Questions included data in relation to type of impression material do you routinely employ to make diagnostic impressions before tooth preparation, practice of gingival retraction, technique of using gingival retraction cord, type of material used for pouring casts etc. The range of possible scores for knowledge was 0 to 6. Correct answers for knowledge questions were given a score of “1” and wrong answers were given a score of “0”. **Results:** Poor knowledge was found to be present in 15 percent of the practitioners, while fair knowledge was found to be present in 40 percent of the participants. Good knowledge was found to be present in 45 percent of the patients. Significant correlation was observed while correlating the knowledge score with educational qualification and years of experience. **Conclusion:** Significant good knowledge is lacking between dental practitioners in relation to impression techniques and materials used in fixed partial dentures.

**Key words:** Knowledge, Impression, Dental materials

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**This article may be cited as:** Bharti G. Knowledge on impression techniques and materials used in fixed partial dentures. HECS Int J Comm Health Med Res 2020; 6(1):7 -9.

#### INTRODUCTION

The increase in life expectancy in both high-income and low-income countries could result in the global population over 60 years of age surpassing two billion by 2050. Edentulism is among the 50 most common diseases, affecting 2.3% of the total global population in 2010. The prevalence of partially and completely edentulous people is likely to increase, as the risk of tooth loss increases with age.<sup>1</sup>

Prosthodontics, as a speciality, has evolved abundantly in past few years. Materials and technological advances keep changing the face of every field every day. Twentieth century witnessed remarkable changes with regard to human longevity worldwide, and the twenty-first century is set to carry forward the gains in longevity further, both in the developing world and the developed world. Various impression materials and techniques came into use since times earlier till today for fixed partial dentures, and all of them have some advantages and disadvantages and are suitable

for specific conditions.<sup>2-4</sup> The main objective of of impression techniques has been to attain better retention of the denture. The advocates have worked towards that end by incorporating a variety of mechanical measures in their procedures without much regard to the biological aspect.<sup>5-7</sup> Hence; the present study was undertaken for assessing the knowledge on impression techniques and materials used in fixed partial dentures.

#### MATERIALS & METHODS

The present study was conducted with the aim of assessing the knowledge on impression techniques and materials used in fixed partial dentures. A total of 20 practitioners were enrolled in the present study. Complete demographic details of all the participants were obtained. A questionnaire was framed and was given to all the participants for obtained data in relation to their knowledge on impression techniques and materials used in fixed

partial dentures. Questions included data in relation to type of impression material do you routinely employ to make diagnostic impressions before tooth preparation, practice of gingival retraction, technique of using gingival retraction cord, type of material used for pouring casts etc. The range of possible scores for knowledge was 0 to 6. Correct answers for knowledge questions were given a score of “1” and wrong answers were given a score of “0”. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi- square test was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

**RESULTS**

In the present study, a total of 20 dental practitioners were enrolled. Mean age of the participants was found to be 35.7 years. Majority of the participants of the present study were males while the remaining were females. Poor knowledge was found to be present in 15 percent of the practitioners, while fair knowledge was found to be present in 40 percent of the participants. Good knowledge was found to be present in 45 percent of the patients. In the present study, significant correlation was observed while correlating the knowledge score with educational qualification and years of experience.

**Table 1:** Knowledge on impression techniques and materials used in fixed partial dentures

Score		Number of participants	Percentage of patients
Knowledge	Poor (0 to 1)	3	15
	Fair (2 to 4)	8	40
	Good (5 to 6)	9	45

**Table 2:** Correlation of knowledge score on impression techniques and materials used in fixed partial dentures with demographic and other parameters

Parameter	χ <sup>2</sup>	p- value
Age group	0.885	0.338
Gender	0.145	0.428
Educational qualification	1.962	0.000 (Significant)
Specialty	0.338	0.155
Years of experience	3.112	0.001(Significant)

**DISCUSSION**

The success of fixed prosthodontics treatment is dependent on many factors such as selection of patients, diagnosis and treatment planning, impression making, cementation of prosthesis, communication with the dental laboratory, satisfaction of the patients, and proper follow-up. As in general, most of the dental practitioners pay more attention to patient’s flow, cost, and treatment time.<sup>7-9</sup> Hence; the present study was undertaken for assessing the knowledge on impression techniques and materials used in fixed partial dentures.

In the present study, a total of 20 dental practitioners were enrolled. Mean age of the participants was found to be 35.7 years. Majority of the participants of the present study were males while the remaining were females. Poor knowledge was found to be present in 15 percent of the practitioners, while fair knowledge was found to be present in 40 percent of the participants. Good knowledge was found to be present in 45 percent of the patients. Keerthna M et al evaluated the knowledge on impression techniques and materials used in fixed partial dentures among

dental practitioners. A total of 150 questionnaires each consisting of 21 questions were sent to various practitioners, out of which 100 questionnaires were filled. The results showed that 93% dental practitioners use irreversible hydrocolloid for diagnostic impression and 7% use other materials with 90.7% using gingival retraction cord plainly and 9.3% using other methods like electrocautery, laser methods to accurately record the final impression followed by which is 88% addition silicone in 66% putty reline/dual mix technique without spacer followed by 14% using monophasic technique with 86% providing provisional prosthesis before the final prosthesis. Furthermore, the reason of shortcomings was noted as 73% for laboratory error, clinical error, patients’ mental attitude, and oral hygiene practice were also noted. 93% of dental practitioners use irreversible hydrocolloid, 88% of them use addition silicone for final impressions in 66% putty reline/dual mix technique without spacer with almost 86% providing the provisional prosthesis. Thus, the appropriate technique, material, and armamentarium are required for long-term success for fixed partial denture.<sup>10</sup>

In the present study, significant correlation was observed while correlating the knowledge score with educational qualification and years of experience. Moldi A et al conducted a survey of impression Materials and Techniques in Fixed Partial Dentures among the Practitioners in India. A total of 1000 questionnaires were sent to various practitioners in India, out of which 807 questionnaires were filled. The results showed that 84.8% of prosthodontists (65.56%, urban areas) use elastomeric impression materials as well as irreversible hydrocolloids and 15.2% use irreversible hydrocolloid only. Amongst other practitioners, 55.46% use irreversible hydrocolloid (45%, rural and semiurban areas) and 44.54% use elastomeric impression materials. Elastomeric impression technique practiced most commonly is putty reline with/without spacer (77.2%); other techniques are multiple-mix and monophasic techniques. The ideal materials, technique, and armamentarium are required for the long-term success of the treatment for fixed partial denture. Also, if the ideal procedure is not followed, it will lead to a compromised fit of the final prosthesis and failure of the treatment.<sup>11</sup>

**CONCLUSION**

From the above results, the authors concluded that significant good knowledge is lacking between dental practitioners in relation to impression techniques and materials used in fixed partial dentures.

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