

Estimation Of Knowledge And Awareness Of Dental Professionals Regarding Impression Materials And Techniques- Questionnaire Based Survey

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INTRODUCTION

In dentistry, impression materials are inevitable to make the impression of teeth and other associated structures. Rapid evolution of impression materials makes more predictable outcome of different prosthesis options. Now a days different types of impression materials are used by the dental practioners varies from irreversible hydrocolloid to rubber base impression materials. These are used in different clinical conditions with different methods. This survey-based study focused to assess the knowledge level, training needs, clinical applications of impression materials among different demographic dental practioners. This will help to promote the best practices and also guides the future research.

The main objective of impressions in prosthetic dentistry is to capture the details of oral structures which will be used to restore the of missing teeth and associated intraoral structures. The ultimate aim of the prosthetics is to provide speech, mastication and aesthetics for the patient. The basic needs of impression materials mainly depend on working time, setting time, dimensional stability and excellent of surface reproduction detail. In clinical dentistry, irreversible hydrocolloid, addition silicone, condensation silicone, polyether, polysulfides are used. So, its necessary to observe the knowledge and awareness of each impression material among the dental practioners.

AIM: To estimate the knowledge and awareness of dental professionals regarding impression materials and techniques.

OBJECTIVES: To estimate the knowledge of existing impression materials and techniques used by dental professionals

To estimate the knowledge about any particular innovations and improvements of impression materials and recent advances of digital impression techniques

METHODOLOGY

The questionnaire study is to estimate the knowledge and awareness among dental professionals in demographic area of Erode and Namakkal. This study comprises of 14 open ended, mixed multiform choices about the impression material and techniques and properties. This was distributed among the dental students and professionals through online goggle form. The responses are obtained from 178 dental professionals for this study . . The participants were easily accessed and the survey was completed in time period of 1 month. This study includes both advantages and disadvantages of impression materials. The advantages like handling properties, accuracy and reliability, whereas disadvantages like fast setting ,temperature modification , air bubbles , patient discomfort , patient cooperation and gag reflex. This study also includes evaluation of the awareness of recent advances like digital impressions , new innovations and improvements of impression material in future . This questionnaire creates various intramural and extramural impacts. Intramural impacts about knowledge, awareness , study of materials , handling properties whereas extramural impacts about patient discomfort , challenges , awareness of digital impressions . The data was collected and given to statistical analysis. The results were obtained and level of significance set as $P < 0.005$.

RESULTS

This questionnaire based study obtained responses from 178 dental professionals categorized by role and year

of experience . The majority are dental practioners followed by dental specialists (11.2%) and dental hygienists(1.7%). In terms of experience 41.6% have 1-5 years , 21.9% have 6-10 years , 13.5% have 11-15 years and 23% have more than 15 years of experience.

In this alginate hydrocolloid is the most commonly used impression material , accounting for 77.5% of usage, followed by addition silicones at 12.9%. The primary factors influencing the choice of impression materials are accuracy (36%) ,ease of use (35.4%), patient comfort (12.4%) and cost (14.6%) also being considered. Most practioners use impression materials 5- 10 times per week (36%), with fewer using them less than 5 times (29.8%) or more than 20 times (10%)

The single- step technique is the most commonly used (51.1%) followed by the putty wash technique (15.8%) with 11% stainless steel are the frequently used (48.9%) for making impressions, with combinations of multiple tray types, such as custom , stock,acrylic and stainless steel trays, being used by 15.8%. Custom trays alone are used by only 2.6% of respondents.

Most respondents (61.9%) consider all handling properties such as viscosity , working time Setting time , strength,dimensional stability,elasticity,flow,and biocompatibility are important when selecting impression materials. Addition silicones are regarded as the most accurate and reliable material with 65.7% of respondents choosing them, The most common challenges with impression materials are gag reflex(41.0%),air bubbles(27.7%),and patient cooperation (17.4%).

Most respondents(65.8%) rate their knowledge of impression materials as good, while 12.4% rate as very good. A majority (64%) have not received any specific training related to impression materials, while 19.1% have most common response regarding satisfaction with currently available impression materials.

Most of the clinical practioners (61.8%) are concerning about the patient discomfort during the conventional impression procedures and other issues related(61.8%) with the materials. Digital impression technique using intra oral scanner is the most preferable choice among practioners because of patient comfort and easy to store digital files and ease of laboratory communication etc. But cost is considered moderately significant by 545 of respondents, while 25.85% find it highly significant . The majority (73.6%) have considered or implemented digital impressions , appreciating the speed, ease, accuracy ,and reduced manual work. An overwhelming 85.4% express a desire to implement digital impression by intra oral scanners in their practice instead of regular impression materials like alginate and other impression materials.

SUMMARY

Most of the dental professionals (77.5%) have experienced all types of impression materials in their clinical practice . Alginate hydrocolloid is the most commonly used impression material in daily usage . This material is easy use , single step ,most easily available in market . The primary reason of handling property , accuracy , viscosity , working time , setting time , and strength is the most consideration in the alginate hydrocolloids. The Polyether's and polyvinyl siloxanes are also currently available and readily used impression material . This materials mainly used for cast partial denture impressions, fixed partial dentures and implant prosthesis. 65.7% of dental professionals agree with the dimensional stability and accuracy of silicones and polysulfides when compare to the alginate hydrocolloids . Some of them of them (64%) professionals needs training regarding handling of impression materials. Some professionals of 73.6% move forward to recent advancement of digital impression techniques due to its easy use and accuracy , but some of them not used due to its cost effective and 85.4 % need particular innovations and improvements in both impression materials and digital impressions

CONCLUSION

Among the limitations of this research , the results concluded that dental professioanls in Erode and Namakkal demographic area have more usages of impression materials like alginate hydrocolloid because of their ease use and single step technique . The large majority of 91.5 % of dental professionals are satisfied with currently available impression materials in market. 73.5% of dental professionals have experienced the digital impression techniques compared to the traditional methods.

This conclusion reveals that dental professionals have used different types of impression materials and also have experienced digital impression technique like scanners. This result shows that there is improved awareness about digital methods among dental professionals . Even though digital methods are not in curriculum , evolving of

digital impression techniques is very significant for dental practice ..