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Knowledge attitude and practice of resin-based sealers among dental practitioners and specialists

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ABSTRACT
Introduction: Endodontic sealers are used to attain a fluid-proof seal throughout the root canal system. An ideal root canal sealer should offer an excellent seal when set, dimensional stability, a sufficient setting time to ensure working time, insolubility against tissue fluids, proper adhesion with canal walls, and biocompatibility, we aim to assess the knowledge of resin-based sealers among dental practitioners and specialists.
Material and methods: A cross-sectional survey was conducted among dental students on the Knowledge attitude and practice of resin-based sealers among dental practitioners and specialists. This was a questionnaire-based survey study. The questionnaire included around 10 questions which consisted of demographic details also. The questionnaire was circulated through an online platform Google forms survey link. The data was collected from the Google docs forms.
Results: According to our study almost 68% of the respondents were aware of the Knowledge attitude and practice of resin-based sealers. The level of significance was found to be, p value 0.001(p value < 0.05) which was statistically significant
Conclusion: From this study it is concluded that the dental practitioners and specialists are well aware of the uses of resin-based sealers. Knowledge on resin-based sealers could be increased among dental practitioners and specialists.

Keywords: Awareness; eco friendly; Endodontic sealers; root canal; resin based sealers; innovative method.

INTRODUCTION

The idea of organic compound bonding in odontology was introduced within the mid-1950s by Buono-core,who advocated the utilization of AN acid to take away enamel. Skepticism slowly gave thanks to general acceptance(1). However, bonding materials and techniques have utterly modified over the course of fifty years. (2)Throughout the initial development solely hydrophobic resins were available; these are replaced by deliquescent resins over time. (3)What is more, regarding thirty years of analysis resulted in an exceedingly modification from exploitation of eighty fifth oxygen acid liquid for sixty seconds to print enamel to thirty fifth oxygen acid gels for fifteen seconds to print dentin and enamel. Though early attempts were strictly targeted on preventive and restorative odontology, it had been solely a matter of time before dental orthopedics and so dental medicine embraced this idea.(3,4)
One of the factors that was instrumental within the development of resin-based sealers was the popularity that gum doesn't bond to dentin or to any conventionally used sealer, like metal oxide-eugenol (ZOE)-based cements and epoxy resins like AH-26 or AH and. Although these materials are getting used with success, a perfect passage sealer ought to be capable of bonding to passage dentin and to gutta-per- cha, therefore preventing microleakage. (5)
Recent advances in adhesive technology have crystal rectifier to the introduction of a brand new generation of odontology sealers and filling materials, that support adhesive properties and compound organic compound technology. These materials are capable of forming a hybrid layer and penetrating deep into dentinal tubules by virtue of their hydrophilic properties. Complete obturation of the basis canal system with associate acid-fast, biocompatible and dimensionally stable filling material is important for prospering passageway treatment. (6)However, it's been rumored that a whole seal of the basis canal system is sort of not possible with presently accepted materials and obturation techniques employing a combination of gutta-percha and passageway sealer.

Several passageway sealers are developed to fill residual gaps between the individual gutta-percha points and between the gutta-percha and therefore the canal wall. At present, sealers supported epoxy resins afford excellent physical properties and guarantee adequate biological performance.(7) wonderful top protection has been found with epoxy resin-based sealers. (8)
Previous studies showed that the epoxy resin-based passageway sealer AH and is cytocompatible , biocompatible and has smart tissue tolerance , long-term dimensional stability and smart protection ability.(9). Our team has extensive knowledge and research experience that has translated into high quality publications(10–19),(20–23),(24–28) (29)The main aim of this study is to analyse the awareness of resin-based sealers among dental practitioners and specialists. (30)

MATERIALS AND METHODS

A cross-sectional survey was conducted among the dental practitioners on the Knowledge attitude and practice of resin-based sealers among .This was a questionnaire-based survey study.The study protocol was approved by the institutional review board. The sample size of the study was 100 participants. The study had self administered open and closed ended questions. The questionnaire included around 15 questions which consisted of demographic details also. The questionnaire was circulated through an online platform Google forms survey link. The data was collected from the Google docs forms. The data was later analysed and the results were tabulated in excel sheets using SPSS software.

RESULTS

The survey was conducted among 100 dental practitioners and specialists in Chennai. The questionnaire was prepared and circulated online and the data was collected and graphically represented using SPSS. On studying the graphical data the following results were obtained, 60% of the participants were aware of resin based sealers in dental procedures whereas 32% of the participants were unaware.(figure1)
69% of the participants use resin based sealers and 31% of the participants do not use (figure2). 51% of the participants agreed that resin based sealers form a bacterial tight seal and 49% of them said no (figure3). 50% of the participants said that resin based sealers prevent pathologies like periradicular pathosis and 50% of them disagreed (figure4). 46% of the participants said that resin based sealers have cytotoxic effect and 54% of them disagreed (figure5).

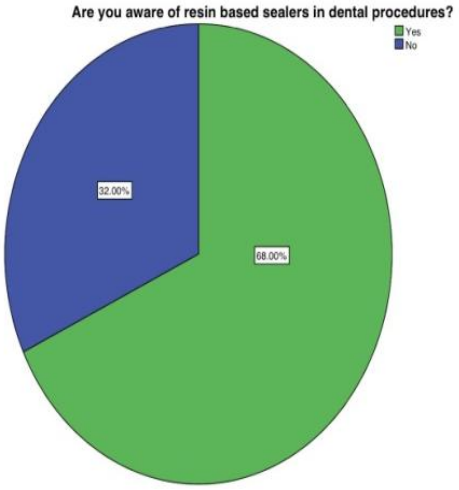

Figure 1: pie chart representing the frequency of distribution of awareness on the awareness of resin-based sailors in dental procedures. Where green represence yes And blue represents no. Majority of 68% of the participants are aware

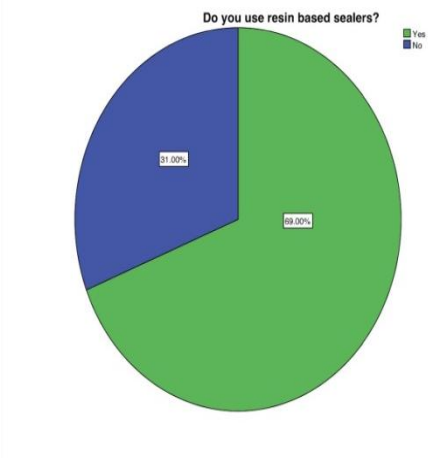

Figure 2 :pie chart representing the percentage of dental practitioners who use resin-based sealers. Where green represents yes and blue represents no. Majority of 69% are aware

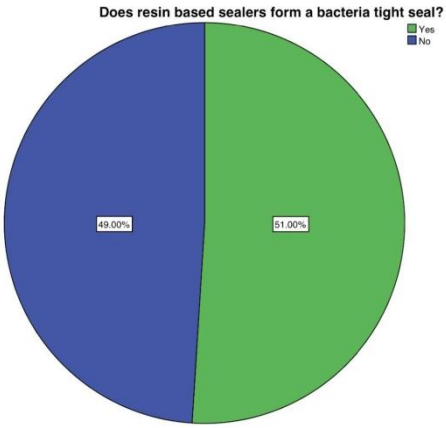

Figure 3: pie chart representing the frequency distribution of awareness on bacterial tight seals found by resin based sealers. Where green represents yes and blue represents no. Majority of 51% of the population are aware.

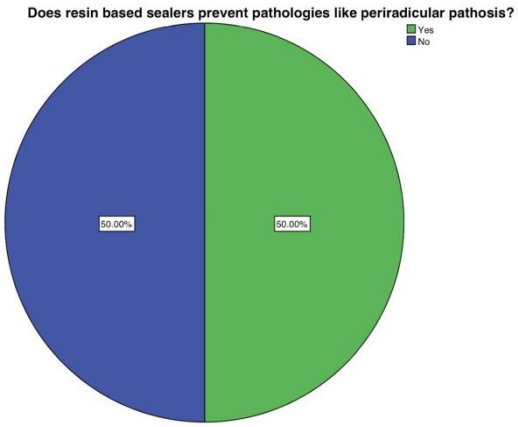

Figure 4:pie chart representing the frequency distribution of awareness on resin based sealers which can prevent pathology like periradicular pathosis. Where green represents yes and blue represents no. Where 50% are aware.

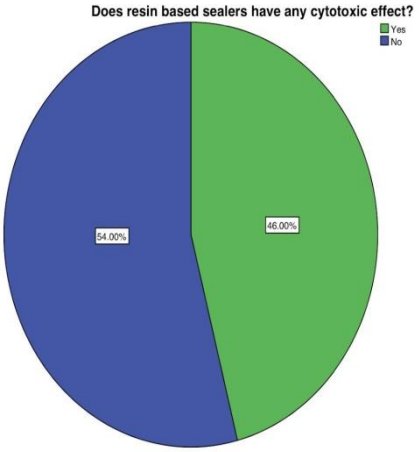

Figure 5:pie chart representing the frequency distribution of awareness on resin based sealers if they have any cytotoxic effect. Where green represents yes and blue represents no. Where a majority of 54% are not aware.

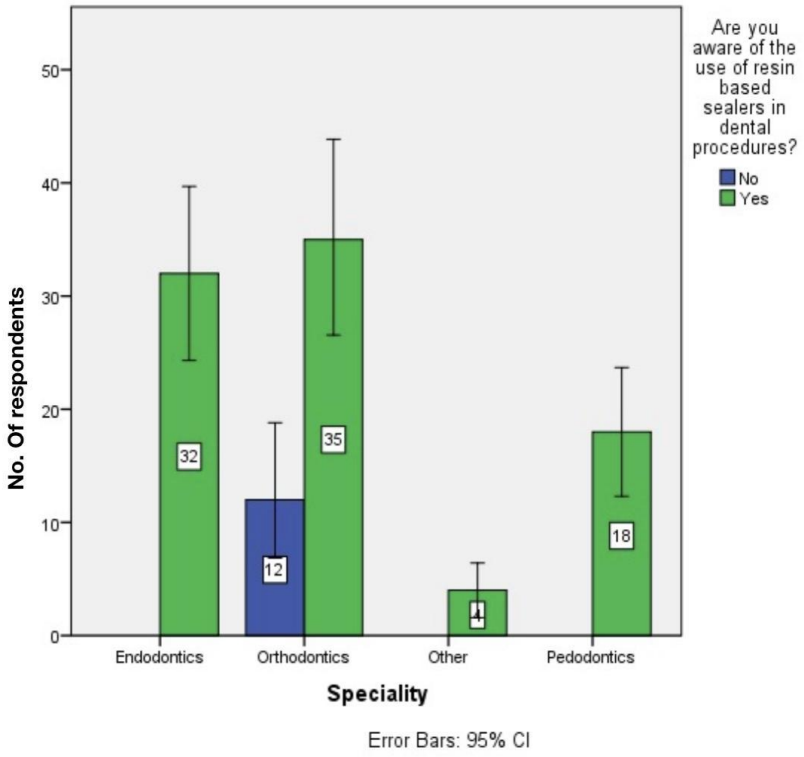

Figure 6: The bar chart represents the awareness of resin based sealers in dental procedures. X axis represents the speciality of the participants, Y axis represents the number of respondents obtained for yes(green), no(blue). The practitioners are aware of the use of resin based sealers in dental procedures. Pearson chi square test value 0.001(p value < 0.05) which is statistically significant.

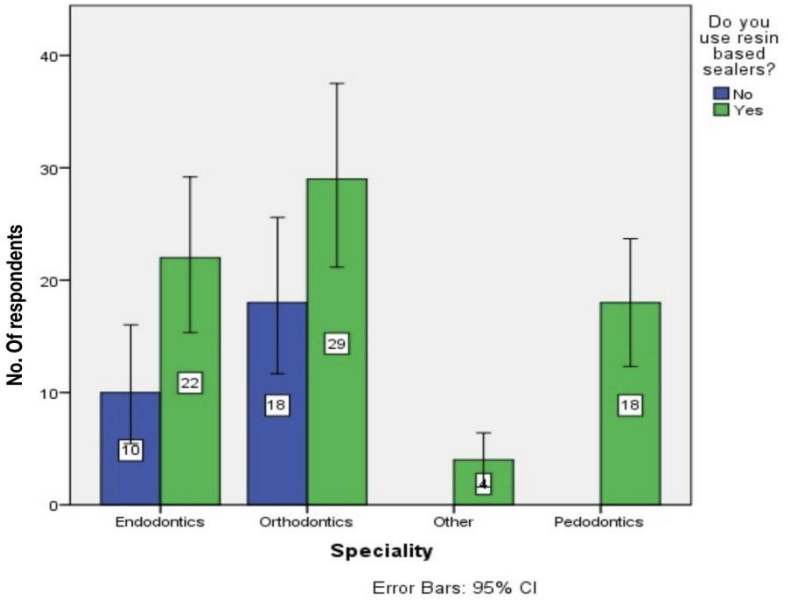

Figure 7: The bar chart represents the practitioners who use resin based sealers in dental procedures. X axis represents the speciality of the participants, Y axis represents the number of respondents obtained for yes(green), no(blue). Majority of respondents use resin based sealers in dental procedures. Pearson chi square test value 0.001(p value < 0.05) which is statistically significant.

DISCUSSION

Among the clinically offered passageway sealers, epoxy resin-based sealers are widely used for passageway filling thanks to their reabsorption resistance and dimensional stability. The last introduced bioceramic-based materials have enticing physical, chemical, mechanical, and biological properties. Therefore, the representative three epoxy resin-based sealers and three bioceramic-based sealers were compared for physical and chemical properties, during this study.The flow of dental medicine sealers could have an impression on obturation of accent canals and micro spaces between master and accent cones . varied factors like composition, shear rate, particle size, temperature, and time from combination are associated with the flowability of sealers. MTA Fillapex sealer had the very best flow and BC Sealer conferred rock bottom flow during this study.

The flow price of MTA Fillapex was just like the worth obtained by woodland et al. A high resin/MTA quantitative relation could also be one in every of the explanations why a high flow happens.Setting time is additionally necessary to produce adequate operating time and correct consistency enough to fill the basic canal system utterly. Setting times of evaluated sealers during this study were totally different from that given by the manufacturer. solely AH-Plus was in agreement with the ISO standards and it showed a big higher mean setting continuance, virtually eight times bigger than the opposite epoxy resin-based passageway sealers.The resin based sealers with ideal properties has inspired the event of an outsized variety of materials, as well as those with improved adhesion like the epoxy resin–based sealer AH and and materials that commit to cash in of the biological and protection properties of mineral oxide mixture, like Endo-CPM sealer and MTA Fillapex. Recently, these MTA-based materials have modified the MTA original formulations to boost the characteristics like flow, setting time, and adhesion, permitting their use as dental medicine sealers. Endo-CPM could be a powder/liquid sealer and presents primarily an equivalent composition of MTA, aside from the addition of barium sulphate and salt.

CONCLUSION

The present survey within the limitations concludes that there is adequate knowledge and awareness regarding the benefits of use of resin based sealers in dental procedures. From the current survey it is observed that in an average 68% of the study population are aware of resin based sealers.

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Conflict of interest
Nil.

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Author contribution
All authors have equal contributions in conducting the survey and drafting the manuscript.

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