



## **To Evaluate the Practices and Attitude Regarding the Material of Choice and Method amongst Dentist for Repair of Defective Restoration of Tooth in Vidarbha: A Cross Sectional Study**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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**Study Protocol**

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## **ABSTRACT**

**Background:** The findings of this study will help dental care professionals reach out to the material of choice in more meaningful ways by catering to a list of potential reasons that will determine the selection of material for repair restorations based on its longevity, strength and knowledge of dental professionals of Vidarbha.

**Objective:** 1. To evaluate the practices regarding material of choice and method amongst dentist for repair of defective restoration of tooth.

2. To evaluate the attitude regarding material of choice and method amongst dentist for repair of defective restoration of tooth.

3. To correlate the practices and attitude regarding material of choice and method amongst dentist for repair of defective restoration of tooth.

**Methodology:** An online based cross sectional questionnaire study will be conducted by assessing the responses to 15 selected questions regarding carried assessment of the practice and attitude about reparative restorations among dental professionals of Vidarbha Region. The aspect on which

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results will be analyzed is the preferred material by dentists for reparative restoration. The questionnaire will be distributed amongst dental health professionals and their responses will be recorded along with validation of questionnaire. A convenient sampling method has been applied in the cross-sectional study depending upon the responses received after the survey. The results will be determined based on response on material selection and its longevity.

**Survey Procedure:** questions will be asked by online platform to dental health professionals with explanation of purpose of the study. The questions will be both open and close end type.

**Expected Results:** The expected result of the study will determine preferred material of choice and method for repair of defective restoration amongst dental health professionals of Vidarbha.

**Conclusion:** There are many key factors that affect the regarding material of choice and method amongst dentist for repair of defective restoration of tooth. Hence this study will evaluate material of choice and method amongst dentist for repair of defective restoration of tooth.

*Keywords: Dental material; material of choice; practice; repair of defective restorations.*

## 1. INTRODUCTION

Approximately half of all restorations placed in general dental practice are done to replace a defective or failed restoration. The reasons that restorations are replaced may be divided into three major categories: clinician factors, material properties, and patient factors [1]. Rebuilding of the faulty restoration should always be considered when considering treatment choices, according to modern dentistry [2]. In the past two decades, the idea of minimal involvement dentistry has become entrenched in the dental practice. The MID line of definition, resin-based composite would also be the initial choice of restorative material for restoration of posterior teeth. One benefit of using RC materials over using the amalgam is that RC materials can be repaired. According to several authors, repairing, refurbishing, and tracking restoration defects greatly improves the restoration's survival period. In a newer publication titled "Consensus Recommendations on Carious Tissue Removal," Schwendicke et al recommended the following:

Wherever possible, restorations should be repaired by re-establishment, reinstatement, refurbishment or repolishing and reimposition, with replacement as a last resort [3]. In a recent Cochrane study, Sharif et al. concluded that there is no clear proof to say that RC repair has any benefit over replacement. The lack of randomization of clinical trials was the most serious flaw listed here. This poses an existential question to the dental clinician: "repair or replacement?" Frequently, little details about the age and brand of the composite restoration in question is available. It has been shown that newer composites have a higher repair success rate than older composites. There are some

benefits of not replacing an whole restoration due to defects, including the preservation of structure of tooth and the strength. Additionally, there may be a lower chance of unintended pulpal damage and unnecessary damage to the adjacent teeth, not to mention the "period of re-restoration," which refers to prolonged tooth care as a path to tooth destruction. Patients have budgetary concerns; repairs can be completed faster and at a cheap cost, and the need for local anaesthetic is minimised. When finalizing to restore RC restorations, it's important to consider pre-treatment techniques for the restorations to be repaired [4]. Bond strength has been shown to increase when different additives to bonding processes, such as salinizing materials and phosphates, are used. However, it is unclear how widely dentists use these items. Mjor et al data 's from 1989 is frequently used as a benchmark on how much time is spent on operative procedures in dental offices [5]. It has been estimated that about 60% of all operative work is devoted to restoration replacement. As a result, the aim of this study to evaluate the practices and attitude regarding material of choice and method amongst dentist for repair of defective restoration of tooth and to correlate the practices and attitude regarding material of choice and method amongst dentist for repair of defective restoration of tooth [6].

### 1.1 Rationale

The findings of this study will help dental care professionals reach out to the material of choice in more meaningful ways by catering to a list of potential reasons that will determine the selection of material for repair restorations based on its longevity, strength and knowledge of dental professionals of Vidarbha.

## 1.2 Objective

1. To evaluate the practices regarding material of choice and method amongst dentist for repair of defective restoration of tooth.
2. To evaluate the attitude regarding material of choice and method amongst dentist for repair of defective restoration of tooth.
3. To correlate the practices and attitude regarding material of choice and method amongst dentist for repair of defective restoration of tooth.

## 2. METHODS

### 2.1 Sample Selection

Sample size is determined using the given formula

$$\sqrt{n} = \frac{Z_{\alpha/2} \times \sigma}{E}$$

where,

$\sigma$  = previous expected values=20

E =desired Margin of error = 5

$Z_{\alpha/2}$  , confidence interval of 90%,  $z = 1.65$

n = sample size estimated 350

### 2.2 Inclusion Criteria

Dental professionals of Vidarbha region.

### 2.3 Measurement

The questionnaire is arranged according to examine respondents' socio-demographic characteristics, dental service specifics, and a self-assessment of service quality. The items used in the self-assessment of service quality will be graded using a five-point Likert Scale [7] Participants will be asked to complete a questionnaire in a particular period and demographic information was included at the start of the survey.

**Bias:** All the potential sources of bias has been removed.

**Quantitative variables:** all the demographic details and the questions in relation to the questionnaire will be recorded with the help of electronic forms and record in the excel sheet.

**Statistical methods:** statistical software of SPSS version 22 has been used for the analysis.

Descriptive statistics and frequency distribution will be done for recording the demographic details and responses of the questionnaire. Pearsons correlation and chi- square analysis is done to evaluate the association between age, gender and socioeconomic scale with the perception of the patients towards the selection of dentist.

## 3. EXPECTED RESULTS

The expected result of the study will determine preferred material of choice and method for repair of defective restoration amongst dental health professionals of Vidarbha.

**Key results:** Dental professionals, Dental ethics, Dental material, material of choice, practice, repair restorations.

**Generalizability:** The study has a good external and internal validity.

## 4. DISCUSSION

A number of related studies are available on different restorative materials [7-9]. According to study among the dentist of Canton of Zurich, Switzerland the repair of partially deficient restorations is an traditional dental therapeutic concept though composite and ceramic restorations are repaired far more often than crowns, indirect metallic restorations, and amalgam fillings.

On the one hand, according to Gordan ET AL'2014 dentists' apprehension about repairing indirect metallic restorations and amalgam fillings can be explained by the fact that these are more visible than tooth-colored restorations, so a complete replacement of the partially insufficient restoration may be indicated for aesthetic reasons as well. Concerns about the health complications associated with amalgam fillings may also lead to the decision to replace all problematic amalgam fillings.

However Kanzow ET AL 2016 states Restorations with secondary caries are usually treated less frequently than restorations with fractures of the restorative material or the surrounding dental hard substance, also there is a concern that if parts of the restoration are left in situ, the caries would spread uncontrollably. As an outcome, it's likely that damaged restorations

like potential secondary caries will be totally replaced more frequently.

The facts from prior study and surveys are in close line when it comes to the essential surface conditioning for an appropriate attachment between composite and repair material. In addition to the processes that allow for mechanical conditioning of the healed surface and the use of an adhesive system, dentists in the Canton of Zurich (Switzerland) frequently use a silane. Hickel et cetera 's therapy guidelines are completely followed in this technique.

## 5. CONCLUSION

There are many key factors that affect the regarding material of choice and method amongst dentist for repair of defective restoration of tooth. Hence this study will evaluate material of choice and method amongst dentist for repair of defective restoration of tooth.

## CONSENT

As per international standard or university standard, respondents' written consent will be collected and preserved by the author(s).

## ETHICAL APPROVAL

As per international standard or university standard ethical approval will be collected and preserved by the authors.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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