DENTAL RESTORATIONS – REASONS FOR PLACEMENT AND REPLACEMENT

MOEEN UD DIN AHMAD, BDS, MCPS
SHAHID MEHMOOD, BDS, MDS
AMIR IMDAD ALI, BDS, MSc
SAJID NAEEM, BDS, FCPS

ABSTRACT

The objective of the present study was to determine the clinical reasons leading to the decision of dental restoration placement and replacement. It was a descriptive case series study and was carried out from October 2010 to July, 2011.

Sampling: Non-probability convenience sampling.

From the city of Lahore, 30 dental clinics were selected randomly, after dividing the metropolis into six administrative zones with 5 dentists from each zone. All the thirty dentists from six zones were asked to register 100 consecutive direct restorations. The standard criteria proposed by Wilson et al was used to record the reasons for placement and replacement of the restorations. The response from the private practitioners for data collection was 70%. The remaining data was collected from the department of Operative Dentistry, Lahore Medical & Dental College, Lahore.

The results of the present study revealed that the primary caries was the major reason (84.3%) for the placement of the initial restoration and secondary caries accounted for the majority (7.1%) of the replacement restoration in the Lahore city.

It was concluded that the major reason for restoration placement and replacement was caries therefore there is a need for finding the factors that are responsible for high caries incidence in Lahore and efforts should be made to prevent the caries.

Key words: Caries, Dental restoration, Placement, Replacement

INTRODUCTION

Dental restoration is an art of reforming the contours of parts of teeth destroyed by lesions or injury, thereby restoring their functional properties. Studies to determine reasons for the initial placement and replacement of dental restorations are an important means for the understanding of dental disease in a population. These studies could also be helpful in developing cost-effective treatment modalities suitable for the local conditions. There are only a few studies available on the reasons for restorative treatments provided in developing countries including Pakistan, although many such studies have been reported in developed countries.
Dental restorations – reasons for placement and replacement

The need for such studies is enhanced because of a reported higher prevalence of dental diseases in recent years in Pakistan which should lead to more dental restorations. This would obviously result in a higher load on the national exchequer.

The purpose of the present study was to determine the reasons leading to the dental restoration placement and replacement in Lahore. This would be helpful in devising preventive and curative strategies to reduce the burden of dental diseases requiring restorative work.

METHODOLOGY

From the city of Lahore, 30 dental clinics were selected after dividing the metropolis into six administrative zones with 5 dentists from each zone. This was done to avoid over- to under-representation from one part of the city or other. The thirty qualified and recognized dental surgeons with more than three years of clinical experience were selected randomly. The selection was carried out from a list of dentists who were interested to participate in the survey. They were asked to take the informed consent from the patients to register 100 consecutive direct restorations. So a total of 3000 restorations were considered in the present study. The demographic information like age and sex were recorded. The dental restorations placed with the direct restorative materials in permanent teeth were included. All those patients having temporary fillings were excluded from the study. Wilson et al standard criteria was used to record the reasons for placement and replacement of the restorations on a proforma. The response from the private practitioners for data collection was 70%. The remaining data were collected from the department of Operative Dentistry, Lahore Medical & Dental College, Lahore. To record the data, permission was obtained from the research and ethical committee of the Lahore Medical & Dental College, Lahore.

The data were entered and analyzed in statistical software (SPSS version 10) a computer based software program. The quantitative variable like age was presented as mean and ± standard deviation. The qualitative variable like sex, the reason for placement and replacement were presented as frequency and percentages.

RESULTS

The sample population comprised of 1313 males and 1687 females, with male to female ratio was 0.8:1 (Table 1). The number of the restorations received by the females (56.2%) was more than those received by the males (43.8%) Table 1. The mean age of the total sample was 32.11±12.74 falling in range 7-75 years. The majority of the sample population fell in the age groups <30 years and 31-60 years (Table 2).

Reasons for placement and replacement can be seen in Table 3. The major reason for placement of new restoration was primary caries (84.3%) followed by tooth fracture (2.3%) and non-carious defect (1.1%) respectively. However, for the replacement of restoration, secondary caries (7.1%) was the most common reason followed by restoration fracture (2.9%) in total restorations.

DISCUSSION

The purpose of the present study was to determine the reason for placement and replacement of the restorations in the population of Lahore.

Caries (91.4%) has been found to be the most common reason for placement and replacement of restoration. This trend is also seen in most of the other studies. This is followed by restoration fracture (2.8%), tooth fracture (2.7%) and non-caries cervicle lesions (1.1%). Mehmood S et al have reported the primary caries as a major reason for the initial resto-
Dental restorations – reasons for placement and replacement

The early diagnosis of caries guarantees the treatment efficiency, the sooner the better.

The higher percentage of initial restorations (84.3%) may indicate either success of the existing restorations or a large number of untreated lesions. In an oral health survey in Pakistan, it was found that between ages of 12-15 years, 97% of all carious lesions were untreated which indicate large number of untreated lesions. This trend was also shown in several epidemiological studies in Saudi Arabia.13, 14

Secondary caries was the commonest reason for restoration replacement. This finding was similar to the most other studies.5, 15, 16 However, it must be remembered that several authors17, 18 have shown that secondary caries may not be correctly diagnosed or be over diagnosed. Less experienced dentist may advise restoration replacement more often than those with more experience.19 The size of the restoration changes considerably with removal and replacement.20, 21 No doubt after several replacements, the affected tooth will become weakened and may require full coverage.

The second major cause for replacement of restoration was the restoration fracture which may reflect a short life span of the restoration.22 Failure and longevity of restorations have been attributed to the material used, the technical quality of the restoration, clinical judgment of the clinician and the degree of patient’s compliance.5, 23 Minimal invasive dentistry procedures including restoration repair has extended the longevity of dental restorations.24

Such surveys suffer various limitations especially in relation to the clinical diagnosis of caries. The limitations must, however, be viewed against the need to obtain data base on “real world” decisions, highlighting trends in the provision of routine dental care.5 The dentists in this study were recruited by personal approach. All the participants were qualified and had more than 3 years of clinical experience. Second limitation was poor response for data collection from private practitioners. So some record was taken from Operative Dentistry Department of Lahore Medical and Dental College, Lahore. Whether this has resulted in bias and affected the validity of the results is unknown. However, the findings of this study may be considered an important insight on reasons for placement and replacement of restorations in clinical practice.

REFERENCES

<table>
<thead>
<tr>
<th>Reason</th>
<th>Initial restoration</th>
<th>Replacement restoration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Primary caries</td>
<td>2530</td>
<td>84.3</td>
</tr>
<tr>
<td>Secondary caries</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Restoration fracture</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Tooth fracture</td>
<td>68</td>
<td>2.3</td>
</tr>
<tr>
<td>Non-carious defects</td>
<td>33</td>
<td>1.1</td>
</tr>
<tr>
<td>Poor anatomic form</td>
<td>12</td>
<td>0.4</td>
</tr>
<tr>
<td>Marginal discoloration</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Bulk discoloration</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Pain/Sensitivity</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Change of material</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>
Dental restorations – reasons for placement and replacement