

# The Dentist's Preferences on the Treatment of Missing Mandibular Incisors in Patients of Varying Ages

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## Abstract

**Introduction:** When mandibular incisor teeth are absent or lost through disease, multiple options for replacement of these teeth are available. It is possible that a patient may receive varying treatment depending on the dentist's preference for replacing missing mandibular incisors.

**Objective:** The present study was aimed to determine the dentists' preferences on treatment options to replace missing lower incisors in patients of varying ages.

**Materials and Methods:** Fifty questionnaires together with clinical photographs, a radiograph, and study casts were given to dentists working in the Glasgow Dental Hospital and School and dentists working in a dental clinic in Libya. The questions included in the questionnaire were directed towards the assessment of dentists' preferences on treatment options to restore missing lower incisors in patients of different ages.

**Results:** For the 18 year old group the most commonly used treatment options were both the use of an adhesive bridge (36%) and a fixed-fixed bridge (36%) although the overall preferred treatment option was the use of a dental implant (68%). Generally, the respondents were in agreement to use the same treatment options for the patient of 40 years old as for the 18 year old (82%). More than half (56%) of the respondents were in agreement to use the same treatment options for the 60 year old patient as for the 18 year old.

**Conclusion:** Within the limitations of this study it can be concluded that there was a difference between some of the dentists in the preferred treatment for the replacement of missing incisors in the clinical scenarios presented in this study.

**Keywords:** Lost; Lower Anterior; Available Treatment; Different Ages

**Abbreviations:** RPD: Removable Partial Denture; GDP: General Dental Practitioners; UK: United Kingdom

## Introduction

When mandibular incisor teeth are absent or lost through disease, multiple options for replacement of these teeth are available. The choice for which form of replacement will produce the best functional and aesthetic result can depend on a number of factors including the position and number of missing teeth; the amount of bone available for implant placement; the relationship of the upper and lower anterior teeth; the residual ridge shape in relation to the replacement teeth; the condition of teeth next to the edentulous area; the patients "smile line", lip support and economic status [1]. In terms of the replacement of missing mandibular incisors the options available include

the use of implant supported restorations; conventional and adhesive bridges and removable partial dentures each with their advantages and disadvantages [2], although there are few studies in the dental literature which discuss the replacement of mandibular incisors in particular [3-8]. Mandibular incisor teeth can be challenging to replace satisfactorily and as there a number of treatment options available for any clinical scenario it is possible that a patient may receive different treatment from different dentists, depending on that dentist's preference for replacing missing mandibular incisors. The aim of this study was to determine dentists' knowledge of missing mandibular incisors and their preferences on treatment options to replace these teeth

in patients of varying ages.

### Material and Methods

#### Study Design and Area

The present study was descriptive cross sectional study which carried out in United Kingdom (UK) and Libya State.

#### Study Subjects

The dentists who have work in Glasgow Dental Hospital and School (UK) or dentists working in a dental clinic in Libya State.

#### Sampling and Sample Size

Convenience sampling techniques were used; this study was involved fifty dentists.

#### Data Collection

Information related to study was collected using structural questionnaire. It was designed to investigate dentists' preferences on treatment options to replace missing lower incisors in patients of varying ages. The questionnaire was made in such way to keep the questions simple and self-explanatory, in order to obtain relevant feedback from the dentists under the study. A pilot study was carried out on dentists to check for the effectiveness of the questionnaire. The questionnaire was divided into four sections: Section one was intended to obtain information related to the dentist's experience and preferences for replacing mandibular incisors in individuals of varying ages (18, 40 and 60 years old); section two related to which age group missing mandibular incisors are commonly encountered in together with the influence of gender on the treatment option; section three focused on the factors affecting treatment options and Section four concentrated on dentists understanding of average lifespan of the treatment that they were providing.

#### Clinical Scenario

One clinical scenario (age 18) in the form of study models; clinical photographs (Figure1), a radiograph (Figure 2), and study casts (Figure 3) were sent to dentists' in order to find their preferences on the treatment options to restore missing lower incisors in this patients. Moreover the dentists were investigated regarding their preferences on the treatment options of same scenario but different ages (40 and 60 years old patients).

#### Method of Data Analysis

The data was analyzed using PASW software (SPSS), version 18. Data are presented in descriptive and figures forms.

#### Results

The present study was included fifty dentists; 25 dentists (50%) reported to be in restorative dentistry, 14 (28%) were general dental practitioners (GDP), 10 (20%) were specialists in

prosthodontics and 1 (2%) was specialist in restorative dentistry, prosthodontics, periodontics and endodontics. For the 18 year old patient, 49 out of 50 (98%) of the respondents suggested the use of dental implants, 43 (86%) a conventional fixed prosthesis, 42 (84%) an adhesive bridge, 50 (100%) a removable partial denture (RPD) and 28 (56%) reported no treatment for replacement of the missing lower incisors. One respondent (2%) reported that they would suggest orthodontics as a possible treatment option to close the space. For 40 year old patient, 41 (82%) dentists would use the same treatment options while for 60 years old, (28) 56% dentists would use the same treatment options. For the same patient (18 year old) (36%) commonly used a conventional fixed prosthesis, 18 (36%) an adhesive bridge, 7 (14%) a dental implant, 6 (12%) an RPD, and 1 (2%) commonly used either an RPD, or a dental implant, or a conventional fixed bridge as a treatment option to replace missing lower incisors (Figure 4). For the preferred treatment option 34 (68%) selected the dental implant, 12 (24%) the adhesive bridge, 2 (4%) the conventional fixed prosthesis, and 2 (4%) the RPD (Figure 5). In terms of the potential lifespan of a prosthesis used to replace missing lower incisors, for a conventional fixed prosthesis, 42 (84%) selected >5 years and 8 (16%) selected 1-5 years. For an adhesive bridge, 39 (78%) selected 1-5 years and 11 (22%) selected >5 years. For a dental implant, 47 (94%) selected >5 years and 3 (6%) selected 1-5 years. For an RPD, 35 (70%) selected 1-5 years and 15 (30%) selected >5 years as the lifespan. The most common age group in which missing mandibular incisors were encountered, 14 (28%) selected the (51-60) age group, 10 (20%) the (11-21) age group and 10 (20%) the (21-30) age group. 8 (16%) selected the (>60) age group, 3 (6%) selected (41-50), 3 (6%) selected all of the age groups, and 2 (4%) selected the (31-40) age group. Twenty-two (44%) reported that males and females were equally susceptible to missing mandibular incisors, 19 (38%) selected males and 9 (18%) selected females. In terms of factors which would affect the treatment choice, 34 (68%) reported that gender did not influence their treatment choice for the replacement of missing mandibular incisors. All respondents (100%) reported that the level of oral hygiene of the patient would influence their treatment choice. 31 (62%) reported that the age of the patient, 41 (82%) patient medical history and 49 (98%) abutment teeth would influence their treatment choice. 30 (60%) reported that no other factors would influence their treatment choice whereas 20 (40%) reported that other factors would affect their choice (e.g. smoking). Of interest only 46 (92%) reported that they would follow up their patients after the treatment.

#### Discussion

There are a wide range of options for replacement of teeth lost through dental disease, trauma or other causes such as developmental anomalies. Any treatment choice should be based on a detailed clinical examination of the individual including any

special investigations where appropriate. The aim of the present study was to determine dentists' preferences on treatment options to replace missing mandibular incisors in patients of varying ages and to see if there would be a difference in the preferences for treatment options between dentists for patients of varying ages. A small number of questions were included in the questionnaire in order to keep it simple. One limitation of the study was that only one clinical scenario (age 18,) in the form of study models, photographs, and a radiograph was used. It may have been better to have three clinical scenarios representing each age group (18, 40, and 60 years). The respondents however did not report any difficulty in considering the same scenario for each age group.

In this study, the most commonly used treatment options for the patient who was 18 years old were both the use of an adhesive bridge (36%) and a fixed-fixed bridge (36%). The reasons for choosing the adhesive bridge option included that it is a conservative option, which involves a simple clinical procedure which is generally well tolerated by patients, and is cost effective. Reasons for choosing the fixed-fixed bridge as an option included that it was a recognized well tolerated and accepted treatment together with it being more cost effective than the provision of a dental implant. When compared with the commonly used treatment options, the overall preferred treatment option for a patient who is 18 years old was the use of a dental implant (68%). For those individuals who selected a dental implant as the preferred option, approximately 18 respondents out of 25 were specialists in Restorative Dentistry, 6 respondents out of 10 were specialists in prosthodontics, 9 respondents out of 14 were general dental practitioners, and 1 respondent was a specialist in endodontics, restorative dentistry, periodontics and prosthodontics. When looking at the 40 year old patient in the clinical scenario, the results of this study showed that, generally the respondents were in agreement to use the same treatment options as for the patient who is 18 years old. Reasons given included that the patient was still young and that age should make no difference to patient care. Some of respondents (14%) did not agree to use the same treatment options for reasons which included that some of patients may have increased levels of periodontal disease, bone loss, and poor oral hygiene at this age. The result of this study showed that, more than half (56%) of the respondents were in agreement to use the same treatment options for a patient who is 60 years old as for a patient who is 18 years old. Reasons for this included that patients at this age usually have periodontal disease that could compromise the use of a fixed prosthesis, aesthetics is probably not a priority for this age group and that implants may not be suitable in this age group. In terms of the expected lifespan of the bridge option, most of respondents (78%) selected the 1-5 years as the lifespan of an adhesive bridge instead of more than 5 years. It is interesting therefore that the adhesive bridge was the common option selected although the lifespan was only expected to be 1-5 years. Some of respondents (32%) reported that the

gender would have an influence on their treatment choice for the replacement of missing mandibular incisors. Reasons given included that females are more concerned about aesthetics than males and those females generally dislike removable prostheses more than males.

The study was of interest in showing that there can be several different treatment options for one particular clinical scenario. It is not possible to compare the results of this study with those of other studies as no similar studies have been undertaken. The results are of interest in that they demonstrate that for one clinical scenario a group of dentists did not all agree on the preferred treatment option. It suggests that a patient may possibly have received different treatment, depending on which dentist performed the treatment. It highlights and reinforced how important it is for dentists to clearly explain all treatment options and for patients to make an informed decision having been given all the treatment options available.

### Conclusion

Within the limitations of this study it can be concluded that there was a difference between some of the dentists in the treatment for the replacement of missing incisors in the clinical scenarios presented in this study.

### References

1. Chee WW, Cho GC, Donovan TE (1997) Restoration of an anterior edentulous space. *J Calif Dent Assoc* 25(5): 381-385.
2. Komine F, Tomic M (2005) A single-retainer zirconium dioxide ceramic resin-bonded fixed partial denture for single tooth replacement: a clinical report. *J Oral Sci* 47(3): 139-142.
3. Hussey DL, Pagni C, Linden GJ (1991) Performance of 400 adhesive bridges fitted in a restorative dentistry department. *J Dent* 19(4): 221-225.
4. Kern M, Glaser R (1997) Cantilevered all-ceramic, resin-bonded fixed partial dentures: a new treatment modality. *J Esthet Dent* 9(5): 255-264.
5. Kern M (2005) Clinical long-term survival of two-retainer and single-retainer all-ceramic resin-bonded fixed partial dentures. *Quintessence Int* 36(2): 141-147.
6. Koutayas SO, Kern M, Ferrareso F, Strub JR (2002) Influence of framework design on fracture strength of mandibular anterior all-ceramic resin bonded fixed partial dentures. *Int J Prosthodont* 15(3): 223-229.
7. Magne P, Magne M, Jovanovic SA (2008) An esthetic solution for single-implant restorations-type III porcelain veneer bonded to a screw-retained custom abutment: a clinical report. *J Prosthet Dent* 99(1): 2-7.
8. Suh JS, Billy EJ (2008) Rotational path removable partial

denture (RPD): conservative aesthetic treatment option for the edentulous mandibular anterior region: a case report. J Esthet

Restor Dent 20(2): 98-105.