

A Survey on Knowledge, Attitude, and Practice on the Fixed Prosthodontics for General Dentists in South India

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Abstract

Background: The current study was conducted to evaluate the knowledge, attitude, and practice of fixed prosthodontics among dental practitioners (DPs) in South Indian population.

Materials and Methods: This was a cross-sectional web-based questionnaire survey conducted among general dentist in South India, over 3 months from March to May 2021. The pilot study was conducted to estimate the sample size. The predesigned and validated, self-administered, structured 10 questions related to knowledge, attitude, and practice of fixed prosthodontics among DPs in South Indian population were used for data collection. Total sample size was 500 subjects. The statistical analysis was done using Statistical Package for the Social Sciences SPSS (V 22.0) (SPSS Inc., Chicago, Illinois, USA). The frequency distribution was computed.

Results: In the present study, 285 (57%) of the 500 study participants were female, whereas 215 (43%) were male. A total of 182 (36.4%) of the 500 study participants had 0–10 years of experience. Putty and Wash treatments were used the most by dentists who used elastomeric impression material 270 (54%). A total of 396 (79.2%) of respondents disinfected the final impression chemically before manufacturing the cast and sending it to the lab.

Conclusion: The current study showed that vast majority of dentist were aware about treatment protocol regarding fixed prosthodontics. Furthermore, efforts should be made to encourage practitioners to be aware of improvements in fixed prosthodontics technique through state-of-the-art continuous training programs to enhance competence.

Keywords: Bridge, Crown, Fixed prosthodontics, General dentist

INTRODUCTION

The term prosthodontics may be primarily regarded as the discipline of dentistry concerned with the replacement of missing teeth. It is commonly subdivided into fixed and removable prosthodontics. Removable prosthodontics, as the name implies, refers to treatment modalities that use prosthetic devices that can be removed from the mouth for cleaning and maintenance. Fixed prosthodontics refers to dental procedures in which substitute teeth are permanently implanted in the mouth. Tooth loss is not a disease in and of itself. Nonetheless, it frequently results in varying degrees of disability. As a result, those who are damaged should be deemed disabled people who seek the assistance of a prosthodontist to restore their dentition's original morphology and functional capabilities.

Fixed prosthetic tooth replacement and restoration replace the damaged or missing dentition's shape, function, and appearance.^[1] It has the ability to change an unhealthy,

unsightly dentition with poor function into a comfortable, healthy occlusion capable of providing years of service while considerably improving looks.^[2] The clinician's ability to complete a thorough diagnosis, develop the most appropriate treatment plan, communicate realistic expectations to patients, and plan the time intervals needed for post-treatment care is enhanced when they are aware of the clinical complications that can occur in fixed prosthodontics.

The integrity of a fixed prosthesis' fabrication has a direct impact on its long-term durability. For the therapy to last as

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long as possible, the dental practitioner (DP) must follow all of the basic clinical requirements. Hence, the current study was conducted to evaluate the knowledge, attitude, and practice of fixed prosthodontics among DPs in South Indian population.

MATERIALS AND METHODS

Using an online questionnaire form, a cross-sectional descriptive questionnaire survey was done among practicing general dentists in Tamil Nadu. With the help of Google Forms from the Google site, a web-based questionnaire form was created. The questionnaire was pretested on 10 general dentists. After removing ambiguous and inappropriate items, the questionnaire was completed. To estimate the sample size, a pilot research was done. After conducting a pilot study, the final sample size was determined to be 500 people. The primary sample size did not include the pretesting and pilot research samples. A structured questionnaire was framed which contained 10 questions knowledge, attitude, and practice of fixed prosthodontics among DPs in South Indians and then online questionnaire link was forwarded to 500 general dentist. A convenient sampling technique was used. All participants completed questionnaires with the duration of 3 months from March to May 2021. After a brief introduction on the purpose and intent of the study, an informed consent form was obtained from every participants involved in the survey. Confidentiality of the information provided was assured and participation was purely voluntary.

The data collected were entered into Microsoft Office Excel and analyzed using the Statistical Package for the Social Sciences SPSS (V 22.0) (SPSS Inc., Chicago, Illinois, USA). The frequency distribution was computed.

RESULTS

In the current study, 285 (57%) of the 500 study participants were female, whereas 215 (43%) were male. A total of 182 (36.4%) of the 500 study participants had 0–10 years of experience, 216 (43.2%) had 10–20 years of experience, and 102 (20.4%) had 20–30 years of experience in dental clinic (Table 1).

The majority of the 280 responders (56%) worked in private clinics. While 120 (24%) of respondents worked in academic institutions, 100 (20%) of dentists worked in government hospitals. In regard to evaluation of radiograph for abutment, 250 (50%) of the 500 respondents said that they always used radiography to evaluate abutment teeth. Two hundred and forty-seven (49.4%) of them used it frequently, while 3 (0.6%) never make use of a radiograph before beginning treatment.

Impression technique varies for all respondents. Dentists who used elastomeric impression material adopted the most Putty and Wash procedures 270 (54%) followed by single step 132 (26.4%). The monophase technique was only implemented in a few cases 98 (19.6%) (Graph 1).

On considering the usage of bur, 320 (64%) of respondents said that they used high-speed handpieces during preparation,

while 180 (36%) said that they used both high and low speed. Most dentists used three or more burs when preparing teeth for dental prosthesis, with 318 (63.6%) using three or more burs, 102 (20.4%) using three burs, and 80 (16%) using one bur.

In view of bite registration, 20 (4%) of respondents never used and 180 (36%) of respondents occasionally used bite registration, while 300 (60%) of respondents always used bite registration for multiple tooth replacements. Participants used wax for bite registration in 268 (53.6%) cases, wax and silicon in 116 (23.2%) cases, and silicone alone in 116 (23.2%) cases (Table 2). There is different of opinion regarding the usage of retraction cord, before making a final impression, consult with practitioners on the use of retraction cords. Four hundred and fifty-six (91.2%) of respondents always make use of retraction cords, whereas 44 (8.8%) never used them.

Among 500 subjects, 396 (79.2%) of respondents disinfected the final impression chemically before manufacturing the cast and sending it to the laboratory, whereas 104 (20.8%) did not (Graph 2).

DISCUSSION

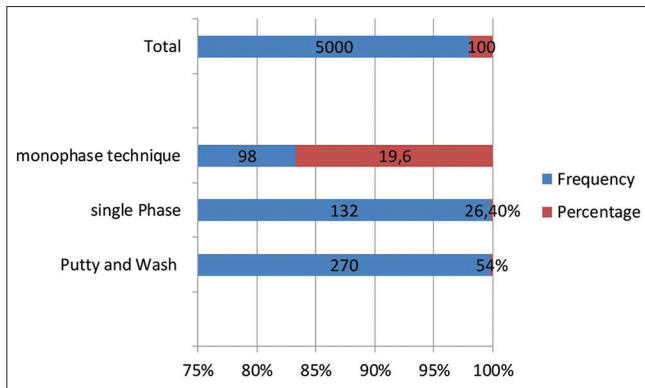
A cross-sectional questionnaire survey was conducted regarding knowledge, attitude, and practice of fixed prosthodontics among DPs in South Indians. For proper diagnosis and treatment planning, study models are required.^[3] In the current study, most of the participants 285 (57%) of the 500 study participants were female and 216 (43.2%) had 10–20 years of experience among the 500 participants. In this study, the viewpoint of a dentist in the manufacture of fixed partial denture (FPD) is taken into account. The goal of this study is to measure dentists' understanding of FPD fabrication technology, their attitudes about it, and how far theoretical knowledge needs to be implemented in clinical practice to provide a satisfactory clinical outcome. Various factors used to predict the prognosis of FPD, such as crown-root ratio, mobility, gingival recession, root surface area,

Table 1: Distribution of study subjects according to years of experience in dental practice

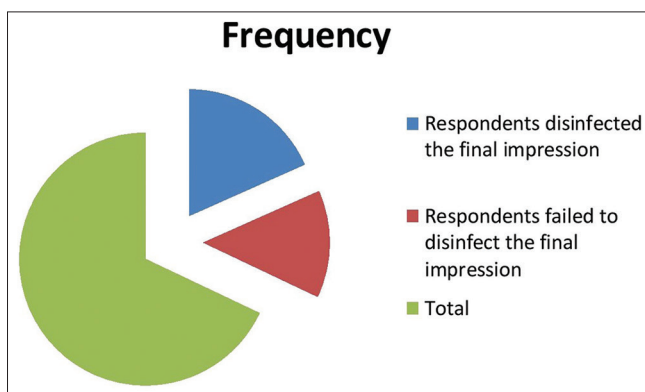
Years of experience	Frequency	Percentage
0–10 years	182	36.4
10–20 years	216	43.2
20–30 years	102	20.4
Total	500	100.0

Table 2: Distribution of study subjects according to materials for bite registration

Materials for bite registration	Frequency	Percentage
Wax	268	53.6
Combination of wax and silicon	116	23.2
Silicone	116	23.2
Total	500	100.0



Graph 1: Distribution of study subjects according to materials used for impression



Graph 2: Distribution of study subjects according to the usage of disinfectant

root morphology, and cross-section, and root convergence/divergence, have been documented in the literature.^[4-8]

In terms of final impression technique, dentists that utilized elastomeric impression material used Putty and Wash techniques the most 270 (54%) in the current study and followed by single step 132 (26.4%). The monophase technique was only implemented in a few cases 98 (19.6%). Conversely to the above finding, Moldi *et al.* Putty relined with/without spacer is the most common elastomeric imprint technique used (77.2%).^[9]

On investigating the usage of retraction cord, the current study reveals that before making a final impression, consult with practitioners on the use of retraction cords. Four hundred and fifty-six (91.2%) of respondents always make use of retraction cords. Although gingival retraction is a required isolation operation for exact recording of the prepared and unprepared surfaces of abutment teeth, many methods (mechanical, chemomechanical, rotary, and electrorotary) have been used in the past.

Gadhavi *et al.* conducted survey on the use of various gingival displacement techniques in fixed partial denture by the prosthodontists in same South India and they concluded

that 62% prefer the use of gingival displacement technique.^[10] Many studies have demonstrated concerns about the impression technique. Our study showed that impression technique varies for all respondent. Dentists who used elastomeric impression material adopted the most Putty and Wash procedures 270 (54%) followed by single step 132 (26.4%). The monophase technique was only implemented in a few cases 98 (19.6%). Putty with a light body is the material of choice for recording the preparation, which is recommended as a baseline in terms of dimensional stability, precision in recording, and reproducing.^[11-16]

Cross-infection prevention in dentist office, in general, and in the dental laboratory, in particular, should now be standard procedure. In Khartoum, 73% of the questioned DPs never disinfect the impression before sending it to the dental laboratory.^[17] Among 500 subjects, 396 (79.2%) of respondents disinfected the final impression. On supporting our findings, Alhoumaidan *et al.* conducted survey and reported that 210 (72.4%) respondents disinfected the final impression chemically before fabricating cast and sending to laboratory, while 35 (12.1%) of them did not disinfect it.^[18]

CONCLUSION

Finally, our study concluded that most of the private practitioners strictly adhere to the protocol. South Indian DPs demonstrated an appropriate level of knowledge in fixed prosthodontics. As a general dentist, we should explore long-term measure to reduce transmission and we must focus on updating current knowledge applied entirely to ensure success clinically.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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