



Survival Rate of Tooth Supported Full Mouth Rehabilitation in Saveetha Dental College

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ABSTRACT

Full mouth rehabilitation re-establishes a state of functional as well biological efficiency where the teeth, periodontal structures, muscles of mastication, and temporomandibular joint mechanisms, all function together in a synchronous harmony. The significance of the current research is to verify the survival rates of tooth supported full mouth rehabilitation procedure in saveetha dental college. Patients who underwent tooth supported full mouth rehabilitation procedures were taken as the participants in our study. Data was retrieved from the dental review case records of Saveetha Dental College, Chennai. Case sheets were taken from June 2019 to March 2020. Data that was retrieved were evaluated by 2 reviewers. Data analysis was done using a chi-square test. This study showed that a total of 44 patients had undergone tooth supported fmr procedure and found that patients among the older age group (51 to 80 years) who had undergone this procedure were higher (54.5%) as compared to other age groups. Overall, Survival rate of this procedure was good. This study was not considered to be statistically significant while evaluating the survival rate of tooth supported full mouth rehabilitation as the (P value - > 0.05) by chi square analysis. Within the limits of the study, tooth supported FMR procedure was more common among older aged patients (51-80 years) and overall survival rate of full mouth rehabilitation was good.

ARTICLE HISTORY

Received October 17, 2020

Accepted November 01, 2020

Published December 09, 2020

KEYWORDS

Complications, Failure rate, Success rate, Survival, Tooth supported FMR

INTRODUCTION

Full mouth rehabilitation is defined as the restoration of the form and function of the masticatory apparatus as nearly as the normal condition as possible [1]. Various indications of FMR include loss of vertical dimension, severe bruxism, trauma from occlusion, unacceptable function and aesthetics, repeated fracture or failure of teeth or restoration [2] and also the presence of

temporomandibular disorders or developmental anomalies [3].

Goals for occlusal rehabilitation is to gain a stable occlusion, neuromuscular structure, Temporomandibular joints, healthy periodontium, tooth structure and optimum aesthetics. Anatomic harmony is a form of harmony of function and esthetics. Disharmony of the component results in the adaptive change of oral cavity. Hence to gain

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both functional and esthetic harmony full mouth rehabilitation is required [4].

Survival was usually defined as the reconstruction remaining with or without modification over the observation period. Various possibilities of complication may arise during this period, it mainly includes biological complications which is more frequent among patients who underwent tooth supported reconstructions as it may lead to loss of abutment vitality.

Second most common complication was considered to be dental caries and the loss of reconstruction may also occur due to recurrent periodontitis. Technical complications by tooth supported reconstructions includes loss of retention which is caused mainly due to the fracture of luting cement, framework and abutment teeth [5].

Therefore, it is important to assess the survival rates of FMR, which especially helps in the prevention and failure of full mouth rehabilitation procedure and leads to a successful outcome. Previously we have focused our research on various invitro and invivo studies [6–21] We have currently shifted our focus to this retrospective analysis. The main objective of the study was to evaluate the survival rate of tooth supported full mouth rehabilitation in Saveetha Dental College, Chennai.

MATERIALS AND METHODS

Study setting was planned among the patients who had undergone tooth supported full mouth rehabilitation procedure in Saveetha Dental College. Before scheduling the study, official permission was obtained from the institutional ethical committee (ethical approval number - SDC/SIHEC/2020/DIASDATA/0619-0320).

Data collection

A Total of 44 patients who had undergone tooth supported full mouth rehabilitation procedure had been taken into the study. Parameters that were assessed included age group (25-30 yrs, 31-50yrs, 51-80yrs) of the participants, survival rate of tooth supported FMR [good (or) Satisfactory] and time period of tooth supported FMR [exactly 5 months, more than 5 months or less than 5 months] which was retrieved from the dental review reports of patients who underwent tooth supported FMR which was present in the patient management software. Data of all the cases that were completed between June 2019 to March 2020 were retrieved from the archives of Saveetha Dental College, Chennai.

Inclusion criteria

Case records based on the evaluation of occlusion, aesthetics and periodontium which was done during the time period of patient's review were retrieved. Survival rate of the procedure was

evaluated based on the time of cementation, materials used during the procedure and the follow up time.

Exclusion criteria

Incomplete data and case records were excluded from the study.

Statistical analysis

Data retrieved were tabulated in Microsoft Excel sheets and were imported to the statistical software known as SPSS (version 26.0). Variables such as age group of patients, survival rate and time period of tooth supported FMR which was evaluated from the time of cementation till the current status were verified and included in the study. Correlation between the variables was done using chi square test and frequency distribution tabulations based on the survival rate of FMR was also prepared.

RESULTS AND DISCUSSION

In this study, the parameters that were assessed included age group (25-30 yrs, 31-50yrs, 51-80yrs) of the participants, survival rate of tooth supported FMR [good (or) Satisfactory] and time period of tooth supported FMR [exactly 5 months, more than 5 months or less than 5 months] which was retrieved from the dental review reports of patients who underwent tooth supported FMR which was present in the patient management software. Data of all the cases that were completed between June 2019 to March 2020 were retrieved from the archives of Saveetha Dental College, Chennai. The Data retrieved had 44 cases of tooth supported FMR. Correlation was done between the age group and the survival rate of tooth supported FMR (Graph 1 and Table 1) and the time period of tooth supported FMR with the age group (Figure 2 and Table 2) was done.

While correlating the age group and survival rate of tooth supported FMR (Graph 1 and Table 1) Patients undergone tooth supported FMR treatment was most common among the age group of 51-80 years (54.5%) and the survival rate of the procedure among this age group was (75%) good and (25%) satisfactory among the patients evaluated. Survival rate of tooth supported FMR in the age group of 31-50 years was good (80%) and satisfactory (20%) Patients who had undergone tooth supported FMR treatment among this age group were about (11.3%). Survival rate of tooth supported FMR procedure among the age group of 10-30 years was good(66%) and satisfactory for about (35%) of the patients evaluated. This age group is considered to be the second most prevalent age group of people who had undergone tooth supported FMR procedure (34%).

Correlation between age group and time period of tooth supported FMR was done (Graph 2, Table - 2). Time period of tooth supported FMR which was evaluated from the time of cementation till the current status, has been more than 5 months for about (33%) of the patients, less than 5 months for about (56%) of the patients and for about 9% of the patients it had been exactly 5 months of time period.

(Graph - 3, Table - 3) - interprets that the frequency distribution of survival rate of tooth supported FMR which was considered to be overall good for (73%) of the patients and satisfying for about (27%) of the patients who had undergone the treatment. Therefore, the P value was >0.05 in this study and the chi square test was not considered to be significant, while evaluating the survival rate of tooth supported FMR procedures.

There are several studies in which researchers have attempted various clinical trials for advanced prosthodontic diagnosis, treatment planning [22],[23],[24],[25],[26],[27] and in vitro studies were done and assessed based on various recent advances in prosthodontic management [28],[29],[30],[31],[32],[33]. Whereas, this study compared the age group and the survival rate of tooth supported FMR (Graph - 1, Table - 1). There are similar studies which state that the age is the risk factor which acts as a discrepancy for the survival rate of tooth supported prosthesis [34].

Evaluation of survival rate of tooth supported FMR was done by evaluating the dental case records of the patients who underwent tooth supported FMR procedure in Saveetha dental college in our study. There are no similar studies stated in the literature. In this study correlation of different age groups with survival rate of tooth supported FMR prosthesis was done which showed that 51-80 years of age (54.5%) was the most Common age group who had undergone tooth supported FMR. Whereas, Petridis HP et al stated that the patients over sixty years of age were at high risk of failure of FMR [35],[36].

Survival rate of tooth supported FMR was good and high in the age group between (31-50 years) (80%) than other age group in this study (Graph -1, Table - 1) whereas Malament Ka et al revealed and stated that middle aged people (30-51 years) showed higher failure rate of tooth supported fixed dental prosthesis [37] which was a contradiction to our study.

Overall, survival rate of the procedure done was good for (7.3%) of the patients and satisfactory for about (27 %) who had undergone the above treatment in saveetha dental college. There are no similar studies stated in the literature (Graph - 3, Table-3)

In this study (56%) of the patients had the prosthesis from the time period of placement of the

prosthesis from the time period of placement of the prosthesis till (>5) months, (33%) of patients more than 5 months and (9%) of them had exactly for about 8 months (Graph 2, Table- 2). Similar to this study, Bjarmi et al stated the estimation of 5 and 10 year survival time period proportions [38],[39]. Numerous studies had estimated the clinical performance and trials to determine the survival rate of tooth supported FMR [40],[41]. This study failed to evaluate the survival rate of tooth supported FMR clinically and this study is also limited to a smaller study sample which is restricted only to an institutional set up. Therefore, it should be evaluated among a larger study population and clinical trials to be done to gain more accurate results.

CONCLUSION

The outcome of the study demonstrated that, within the limits of the study, tooth supported FMR procedure was more common among older aged patients (51-80 years), (56%) of the patients had a time period of tooth supported FMR which was about less than 5 months.

Therefore, the overall survival rate of the tooth supported FMR placed was considered to be good among all the age group. Awareness of the survival rate of tooth supported FMR procedure may help in rectification of the factors which influence and leads to failure of this procedure and eliminates of this procedure and eliminates it for a successful outcome.

ACKNOWLEDGEMENT

The authors would like to thank the study participants for their participation and Saveetha Dental College for providing a platform to express our knowledge.

CONFLICT OF INTEREST

The authors declare that there were no conflicts of interest in the present study

FUNDING

Self

ETHICAL CLEARANCE

It is taken from "Saveetha Institute Human Ethical Committee" (Ethical Approval Number-SDC/SIHEC/2020/DIASDATA/0619-0320)

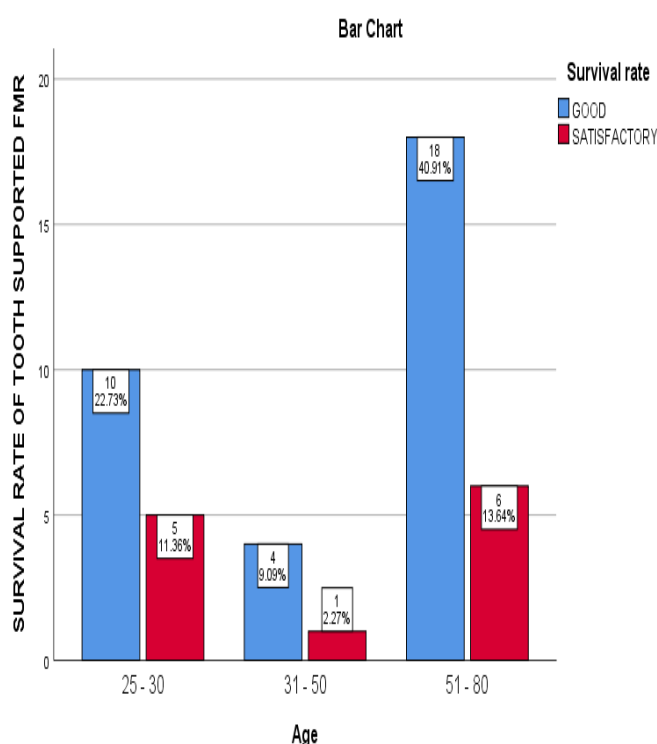
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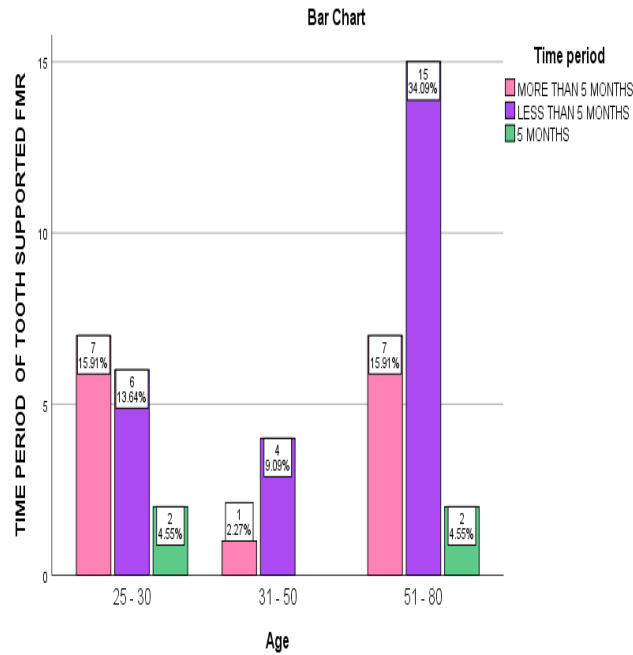
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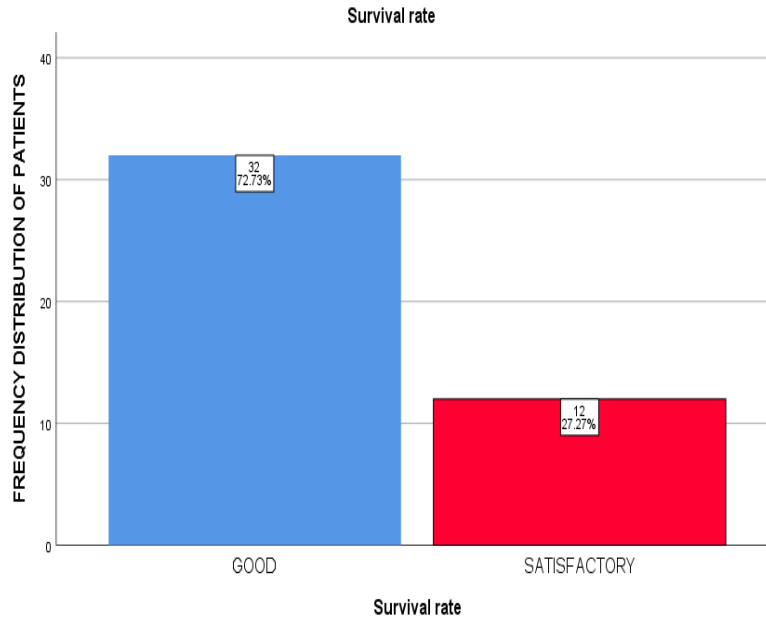
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Graph 1: Bar graph showing the association between age and survival rate of tooth supported FMR. X axis represents age distribution .Y axis represents the survival rate of tooth supported fmr among the participants. Chi-square test was done and was found to be statistically not significant [chi square value - 0.474; P value = 0.789]. Therefore, the patients undergoing tooth supported FMR treatment were most common among the age group of 51-80 years than the other age groups and the overall survival rate of the procedure was good (Blue) than satisfactory(Red).



Graph 2 : Bar graph showing the association between age distribution and Time period of tooth supported FMR . X axis represents age distribution .Y axis represents the Time period of tooth supported fmr among the participants. Chi square test was done and was found to be statistically not significant [chi square value - 3.280; P value = 0.512]. Therefore, the patients undergoing tooth supported FMR treatment most commonly had the time period of less than 5 months (Purple) as compared to other time periods such as more than 5 months (Pink) and exactly 5 months (Light green).



Graph 3 : Bar graph showing the frequency distribution of survival rate of tooth supported FMR . X axis represents the survival rate of tooth supported FMR and Y axis denotes the patients who underwent tooth supported FMR . Therefore, the survival rate of tooth supported FMR was overall good (Blue) than satisfactory (Red) among the patients who had undergone the treatment.