



Correlation of Patient Satisfaction with Treatment Duration in Tooth Supported Full Mouth Rehabilitation Cases: A Retrospective Study

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ABSTRACT

Full mouth rehabilitation is a comprehensive treatment and hence requires a longer duration along with patient co-operation and operator skill. Data of 86000 patients between June 2019 and March 2020 was reviewed from the patient's records and analysed that was documented in Saveetha Dental College and Hospital, Chennai, India. 152 patients who underwent tooth supported full mouth rehabilitation were included in this retrospective study. The data regarding the duration of the entire treatment, patient satisfaction, type of temporary teeth and change in vertical dimension was collected from Dental Information Archiving Software (DIAS). The data censored was collected by recalling the patient and reviewing. Statistical analysis was performed using Pearson's correlation and chi square test to assess the association between patient satisfaction and increase in the vertical dimension, type of temporisation and duration of the treatment. The associations between patient satisfaction and increase in vertical dimension (Chi-square value : 8.809, df: 6, p value : 0.185), type of temporisation (Chi-square value : 8.809, df: 6, p value : 0.185) and duration of the treatment (Chi-square value : 303.548, df: 306, p value : 0.529) were statistically insignificant ($p > 0.05$). From the available data it was observed the duration of the treatment plays a secondary role in relation to patient satisfaction in the treatment of full mouth rehabilitation cases. The quality of treatment and decisiveness in providing definitive care with respect to treatment needs gives better patient satisfaction.

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INTRODUCTION

Extensive wear or destruction of the dental structure requires comprehensive restorations involv-

ing not only teeth but also the harmonious functioning of jaw musculature and positioning. Full mouth rehabilitation aims to harmonize the existing unfavourable forces on the teeth into favourable forces which enable normal function, thus preventing pathologic changes in the stomatognathic system (Turner and Missirlian, 1984; Ashok and Suvitha, 2016). These favourable forces increase tolerance of the supporting structures to masticatory pressures (Dawson, 2007; Ranganathan *et al.*, 2017). The restoration of normal healthy function of the masticating apparatus with good esthetics (Ariga *et al.*, 2018) is the ultimate aim of full mouth rehabilitation (Darraj and Mattoo, 2017; Ariga *et al.*, 2018; Ajay *et al.*, 2017). It is important to spot the factors that contribute to excessive wear and gauge alteration of the Vertical Dimension

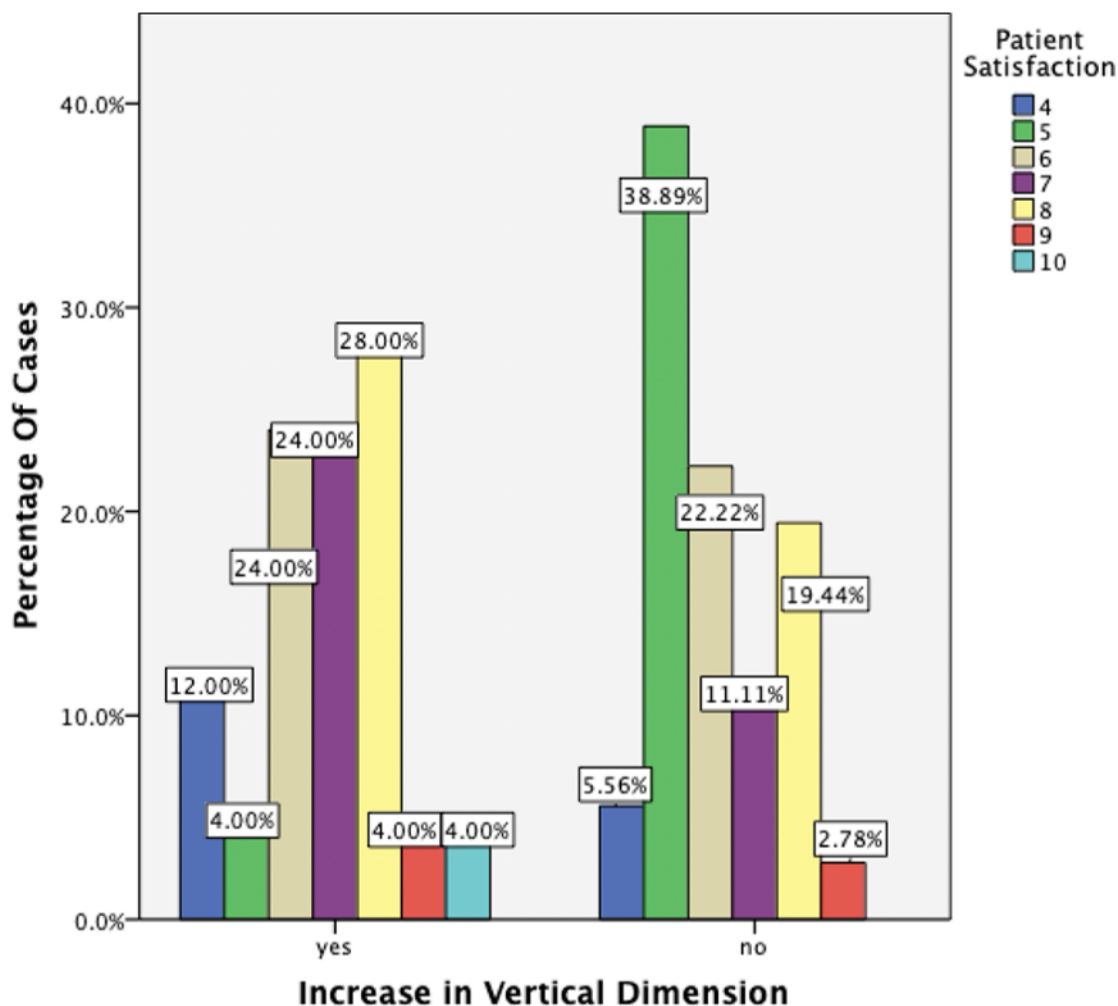


Figure 1: Association of patient satisfaction and an increase in vertical dimension in full mouth rehabilitation cases

at Occlusion (VDO) caused by the worn dentition.

In many cases, the vertical dimension of occlusion is maintained by tooth eruption and alveolar bone growth (Jahangiri and Jang, 2002; Jyothi et al., 2017). As teeth are worn, the alveolar bone undergoes an adaptive process and compensates for the loss of tooth structure to maintain the VDO (Prasad et al., 2008; Jagtap et al., 2014).

Therefore, VDO should be conservative and will not be changed without a careful approach. In patients with parafunctional habits like bruxism, increasing the VDO puts a severe overload on the teeth and often results in the destruction of the restorations or teeth themselves (Dahl et al., 1975; Binkley and Binkley, 1987).

Comprehensive treatment planning for a full mouth rehabilitation involves assessment of vertical dimension followed by an articulation of study casts and diagnostic wax up. This provides an insight into various treatment alternatives that could be employed to reestablish the occlusion. The changes

due to the vertical dimension of occlusion are assessed and confirmed with the clinical evaluation of the patient having a diagnostic splint or provisional prosthesis (Hemmings et al., 2000; Prasad et al., 2008).

Comprehensive therapy for all the associated structures of the stomatognathic system requires an extensive duration of treatment in order to provide the optimum level of care as well as patient comfort to tissue changes that occur during treatment (Vijayalakshmi and Ganapathy, 2016). Hence, there was an underlying assumption that such extended durations result in low satisfaction levels. Patient satisfaction may also be dependent on the type of temporary teeth given.

Full mouth rehabilitation is an extensive therapy and usually requires longer appointments and a longer duration of the treatment if the vertical dimension needs to be raised Darraj and Mattoo (2017). Various studies (Darraj and Mattoo, 2017; Agrawat et al., 2018) have correlated patient satis-

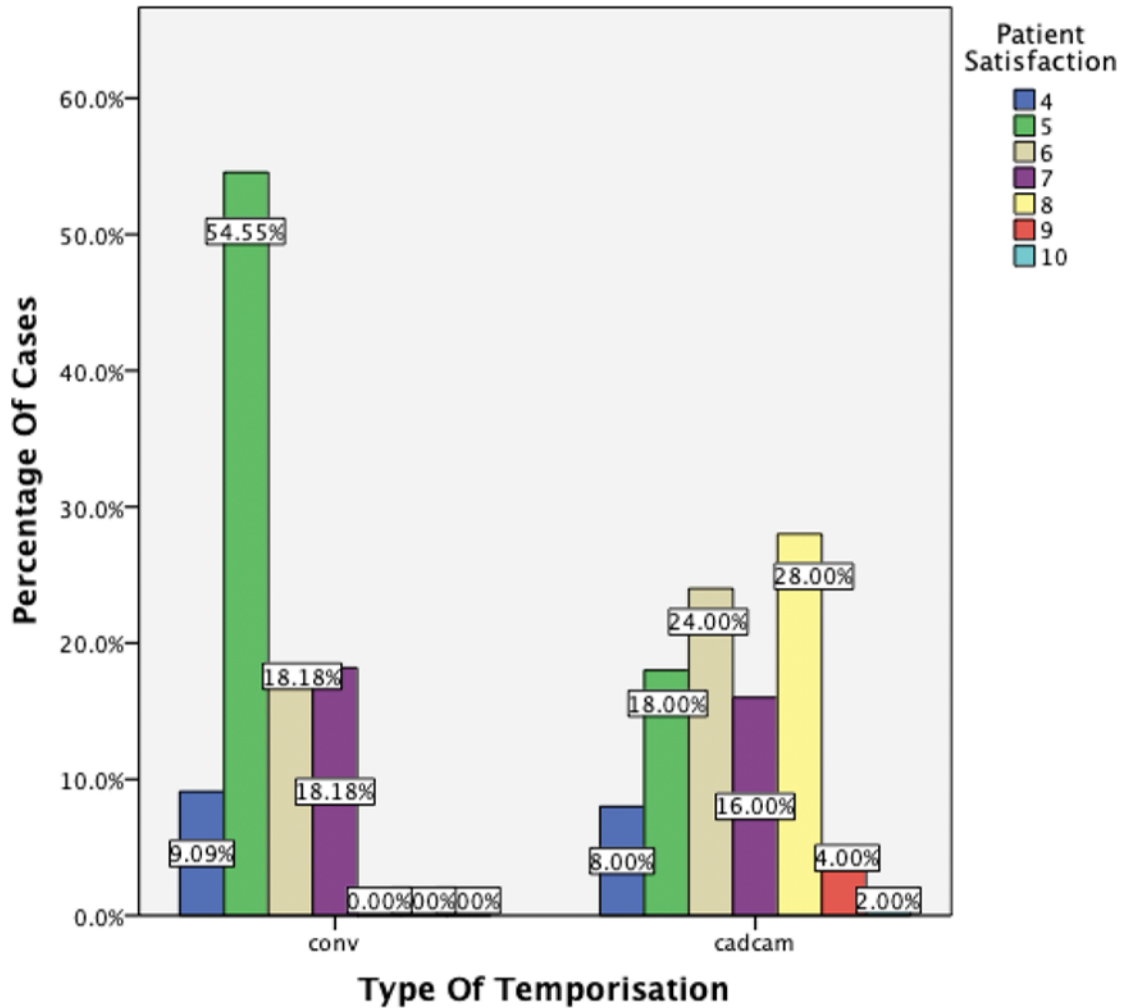


Figure 2: Association of patient satisfaction and type of temporisation in full mouth rehabilitation cases

faction with occlusal stability in full mouth rehabilitation cases. But none have evaluated the correlation of the treatment with the duration of the procedure.

Patient satisfaction is the key to the maintenance of the prosthesis and hence overall oral health (Subasree et al., 2016; Agrawat et al., 2018). The follow up also depends on patient satisfaction. Hence, this study aims to correlate patient satisfaction with treatment duration in tooth supported full mouth rehabilitation cases.

MATERIALS AND METHODS

A retrospective study was done in a university based setting in Saveetha Dental College and Hospital, Chennai, India. Ethical clearance was obtained from SRB Saveetha Dental College, Chennai, India. The data collection was done from the Dental Information Archiving System (DIAS). It is a recording system of all the data related to the medical and

dental history of patients and the treatment done in Saveetha Dental College and Hospital, Chennai, India. All the cases that fulfilled at least 3 inclusion criteria were considered in this study in this time period were considered in this study. Data of 86000 patients between June 2019 and March 2020 was reviewed from the patient’s records and analysed that was documented in Saveetha Dental College and Hospital, Chennai, India. 152 patients who underwent tooth supported full mouth rehabilitation were included in this retrospective study. The data regarding the duration of the entire treatment, patient satisfaction, type of temporary teeth and change in vertical dimension was collected from Dental Information Archiving Software (DIAS).

Inclusion Criteria

Tooth supported full mouth rehabilitation cases, age-any group, gender- both males and females.

Exclusion Criteria

Implant supported full mouth rehabilitation cases,

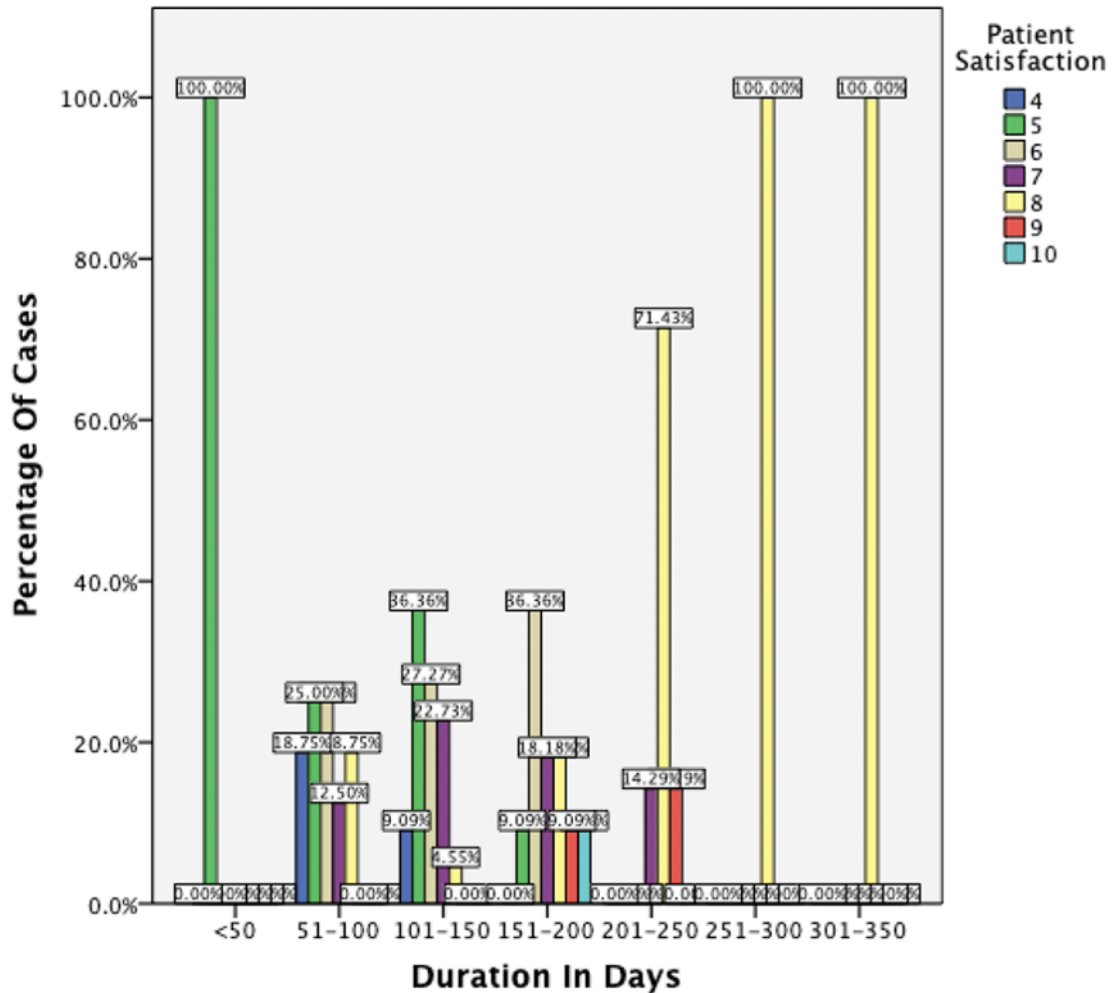


Figure 3: Association of patient satisfaction and duration of treatment in full mouth rehabilitation cases

removable or cast partial denture full mouth rehabilitation cases.

The data entered was tabulated and analysed for the comparison of duration of the treatment with the patient satisfaction recorded on Vas (Visual Analog Scale) 1-10 scoring. Statistical analysis was done using SPSS Software for Windows, version 20.0. Pearson correlation and chi square tests were used to evaluate the association between patient satisfaction and increase in the vertical dimension, type of temporisation and duration of the treatment.

RESULTS AND DISCUSSION

Out of the 152 patients, 56% were females, whereas 44% were males. The mean age group of the patients was 41-60 years. The association between patient satisfaction and increase in vertical dimension was found to be statistically insignificant; Chi-square value: 11.544, df:6, p value: 0.073, however, the overall patient satisfaction was higher in the patients in whom VD had been raised compared

to those in whom VD was not raised (Figure 1).

The association between patient satisfaction and type of temporary teeth was found to be statistically insignificant; Chi-square value: 8.809, df: 6, p value: 0.185, however, the overall patient satisfaction was higher in the patients who received CAD CAM temporary teeth compared to those who received conventional temporary teeth (Figure 2).

The association between patient satisfaction and duration of the treatment was found to be statistically insignificant; Chi-square value: 303.548, df: 306, p value: 0.529, however, the overall patient satisfaction was higher in the patients in whom duration of treatment was longer compared to the others (Figure 3), (Table 1).

The patient satisfaction was overall better in those requiring a raise of vertical dimension. The Pearson chi-square value was 11.544, p value-0.073 was statistically not significant (p>0.05). This can be interpreted as even though the cases requiring a raise in VD takes time, it seems acceptable to the

Table 1: Association of patient satisfaction with duration of the treatment, increase in vertical dimension and type of temporisation in full mouth rehabilitation cases

	Patient Satisfaction								Chi square value	P value
	4	5	6	7	8	9	10			
Increase in Vertical Dimension										
Yes	12.0%	4.0%	24.0%	24.0%	28.0%	4.0%	4.0%		11.544	.073
No	5.6%	38.9%	22.2%	11.1%	19.4%	2.8%	0.0%			
Type of Temporisation										
Conventional	9.1%	54.5%	18.2%	18.2%	0.0%	0.0%	0.0%		8.809	.185
Cad cam	8.0%	18.0%	24.0%	16.0%	28.0%	4.0%	2.0%			
Duration of Treatment in days										
<50	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%		303.548	.529
51-100	18.8%	25.0%	25.0%	12.5%	18.8%	0.0%	0.0%			
101-150	9.1%	36.4%	27.3%	22.7%	4.5%	0.0%	0.0%			
151-200	0.0%	9.1%	36.4%	18.2%	18.2%	9.1%	9.1%			
201-250	0.0%	0.0%	0.0%	14.3%	71.4%	14.3%	0.0%			
251-300	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%			
301-350	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%			

*The chi-square statistic is significant at the 0.05 level

patient as they understand the complexity of the treatment (Chakalov and Ivanova, 2015). Patients also give a positive response because they comprehend the treatment and enjoy the comfort bestowed by having the optimal vertical dimension (Ganapathy et al., 2017; Basha et al., 2018).

A majority of the patients are more satisfied with the CAD CAM milled temporary teeth as the conventional ones have more changes of breakage (Ganapathy et al., 2016). The colour change in cad cam temps is gradual because it has less percolation and a high finish hence less debris accumulate on it as compared to conventional temps (Tamimi and Hirayama, 2020).

Another stipulation was that CAD CAM temporary teeth have less shrinkage as it already comes as processed blanks as compared to 6-30% volumetric shrinkage in conventional temps (Venugopalan et al., 2014; Ganapathy et al., 2017). Hence the chances of misfit are less at the margins, which reduces sensitivity and gives better patient comfort. The Pearson chi-square value was 8.809, p value-0.185 was statistically not significant (p>0.05).

It was found that duration plays only a secondary role in full mouth rehabilitation cases (Duraisamy et al., 2019).

These patients have experienced discomfort for an extended period of time prior to treatment; hence more than the time taken for the treatment, the

compassion of the operator towards the patient is more important (Selvan and Ganapathy, 2016; Venugopalan et al., 2014).

The prompt treatment of patient complaints, skill of the operator and good verbal communication in response to patient desires also affect the overall satisfaction of the patient (Selvan and Ganapathy, 2016).

More sample size, a limited cohort from single study multicentre study, more variables like satisfaction in relation to chewing In future studies, age and gender, can also be compared with treatment duration, other factors like esthetics, occlusal stability in detail can be evaluated (Boven et al., 2015).

Patient satisfaction also depends on the type of occlusal scheme given to the patient and hence should be evaluated. Awareness can be carried out among dentists to improve the skill to try and minimize the duration time in order to improve patient compliance (Kannan and Venugopalan, 2018; Abouzeid, 2018).

CONCLUSIONS

The duration of the treatment plays a secondary role in relation to patient satisfaction in the treatment of full mouth rehabilitation cases. The quality of treatment and decisiveness in providing definitive care with respect to treatment needs gives better patient

satisfaction.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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