ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF RESEARCH IN PHARMACEUTICAL SCIENCES

Published by JK Welfare & Pharmascope Foundation Journal Home Page: https://ijrps.com

Multidisciplinary approach in full mouth rehabilitation treatments in university based setting- A retrospective study

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Article History:

Received on: 20 Jul 2020
Revised on: 10 Aug 2020
Accepted on: 20 Aug 2020

Keywords:

rehabilitation,
multidisciplinary,
multicentre,
diagnosis,
systemic health issue

ABSTRACT

Full mouth rehabilitation seeks to convert all unfavourable force to induce normal oral health. The restoration of normal shape, form, the function should always remain the prime goal in such an approach. The main aim of the study is to evaluate the role of multidisciplinary- approach in the treatment of full mouth rehabilitations. A retrospective data collection was done by analysing and reviewing the patient records from total 86000 case sheets from Saveetha dental college with the period between June 2019-march 2020. Inclusion criteria & exclusion criteria were available. Parameters were tabulated and analysed using SPSS software. There were totally 66 patients treated for full mouth rehabilitation in the study period. Among these, 22 were males and 44 were females .66% of both the population irrespective of age and gender had been treated with the involvement of 4 departments which includes periodontics, endodontics, oral surgery and prosthodontics. Chi-square t-test was performed, and the p-value was found to be 0.018 and the results show a significant relationship between age and the multidisciplinary treatment as p-value is <0.05. This study is in consensus with existing literature that full mouth rehabilitation treatment is to be done by a multidisciplinary approach rather than a single approach. Whether systemic health issues or socioeconomic reasons played a role in the acceptance of choice of treatment needs to be further evaluated with larger sample size and multicentre studies among our population.

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ISSN: 0975-7538

DOI: https://doi.org/10.26452/ijrps.v11iSPL3.3006

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IJRPS | https://ijrps.com

INTRODUCTION

Mouth rehabilitation seeks to convert all unfavourable forces on teeth and induce a normal healthy oral condition (Goldman, 1952). The restoration of normal shape, form, the function should always remain the prime aim of treatment. The restoration of aesthetics and functions can be accomplished by accurate diagnosis, proper treatment planning and execution through a multidisciplinary approach. Multifactorial dental diseases like periodontitis, dental caries, malocclusions, pericoronitis, missing tooth etc. need to be addressed and treated by specialists of individual disciplines (Ahmad, 1998). The main aim should be restoring function and smile designing. The smile designing can be a challenging task as it cannot be done by a single individual as it may require a variety of specialists for appropriate treatment (Aljeaidi, 2016). This includes treatment from departments like oral and maxillofacial

surgery wherein people are advised for serial extractions followed by alveoplasty or orthognathic jaw surgeries in case of malocclusions, osteotomies in craniofacial anomalies etc., followed by operative dentistry and endodontics where in they would be under root canal treatments with post and core, composite restorations, bleaching etc., followed by periodontics where in they will be undergoing subgingival scaling, curettage, flap surgeries, bone grafting, crown lengthening etc. (Ganapathy, 2016).

Some cases may also require orthodontic correction of skeletal malocclusions and finally into prosthetic treatment like fixed partial dentures, complete dentures, implants, cast partial dentures etc. Wagle et al. stated that the prime objective of should be delivering optimum oral health (Wagle, 2018). In such an approach, the minute details like height, width and breadth of teeth should be precisely noted and taken into account, especially the anteriors. This can be done by using anthropometric measurements (Ariga, 2018). Periodontal assessment with plaque score(PLS), bleeding on probing(BOP), probing pocket depth(PPD), loss of attachment(LOA), furcation and mobility should be carried out to check for the need for treatment of the specific teeth (Jyothi, 2017). This gives clarity regarding the abutment strength, bone density etc. to plan for prosthetic treatment. In treatment with implants, there should be a proper evaluation for microgaps (Selvan and Ganapathy, 2016; Duraisamy, 2019).

There may be reduced oral hygiene in patients requiring full mouth rehabilitation and so in preparing teeth for fixed partial dentures or for crowns, the incisal and cervical marginal discrepancies to be checked also care must be taken not to damage any tissues leading to infections like cellulitis etc. which may require additional antibiotic coverage (Subasree *et al.*, 2016; Vijayalakshmi and Ganapathy, 2016). Most common prosthetic replacements were fixed partial dentures or crowns in case of full mouth rehabilitation followed by implants (Ganapathy *et al.*, 2017; Jain *et al.*, 2017). The fixed partial dentures are being preferred by many because of low cost and time efficiency (Ashok and Suvitha, 2016).

The role of prosthodontics in full mouth rehabilitation is not restricted only to the replacement of teeth (Ashok, 2014; Venugopalan, 2014). Care must be taken for geriartic, lactating, pregnant and patients with systemic illness as they may pose hypertension or cardiac problems and so the use of impregnated retraction cords in tooth preparations should be avoided. Also, pregnant women may have periodontal problems due to imbalances in the hormones during this period and so care must be taken before providing medical or surgical treatment (Basha *et al.*, 2018; Kannan and Venugopalan, 2018). Most common treatments preferred in full mouth rehabilitations include scaling and curettage, root canal treatments, serial extractions alveoloplasty, overdentures or complete dentures, implants or fixed dental prosthesis. The advantages and disadvantages of restoring by dental implants with the fixed prosthesis are documented vividly in the dental literatures and are preferred based on the need of patient (Ajay, 2017). The main aim of the study is to evaluate the role of the multidisciplinary approach in the successful outcome of full mouth rehabilitation.

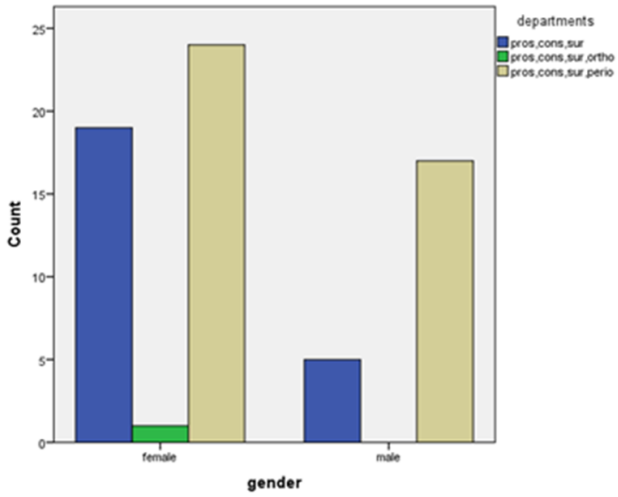

Figure 1: Bar chart representing the association between gender of patients and departments involved in treating Full Mouth Rehabilitation patients

MATERIALS AND METHODS

Study type and setting

This is a retrospective study and all data were collected by reviewing 86000 case sheets of outpatients department of Saveetha Dental College and Hospitals over a period of 10 months from June 2019-March 2020.

Participants

Patients who were treated for full mouth rehabilitations were included and it accounted for around 66 patients where 22 were male and 44 were female.

Sampling and verification

All data were obtained and are approved by the Institutional Ethical Committee and cross-verified by two reviewers. The external and internal validity were applicable.

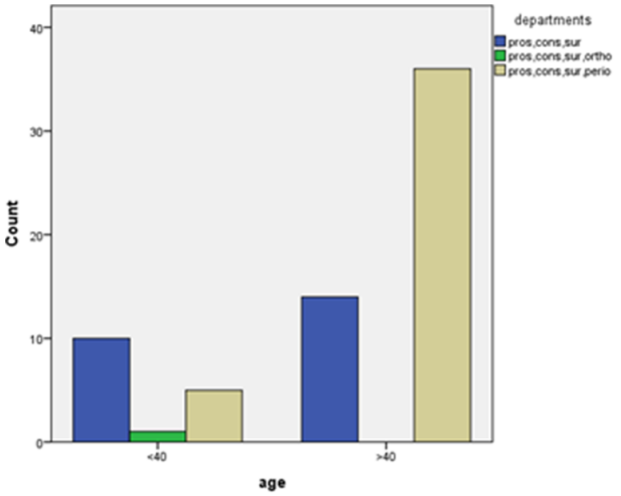

Figure 2: Bar chart representing the association between age of the patients and the departments involved in treating Full Mouth Rehabilitation patients

Data analysis

All data retrieved were compiled in an excel sheet and imported to SPSS by IBM for statistical analysis. Chi-square statistical analysis was performed. The independent and dependent variables include age, gender and treatment, respectively.

RESULTS AND DISCUSSION

Figure 1 shows that X axis represents the gender of the patients and Y-axis represents the departments involved and represents the gender of patients undergoing treatment in the department. It can be clearly seen that 54% of females (24/44) and 77% of males (17/22) have undergone treatment from departments of oral surgery, endodontics, periodontics and prosthodontics. Chi-square test was performed and the p-value was found to be 0.214 and the results are not significant as p-value is >0.05

Figure 2 shows that The X-axis represents the age of the patient and the Y-axis represents the departments involved in treatment and representing the age of patients undergoing treatment in department states that 63% of patients who were of age < 40 have undergone treatment from departments of oral surgery, prosthodontics and endodontics, whereas 72% of participants above 40 years of age have undergone treatment from the department of oral surgery, prosthodontics, periodontics and endodontics. Chi-square t-test was performed and the p-value was found to be 0.018 and the results show a significant relationship between age and the multidisciplinary treatment as p-value is <0.05. Thus, it can be seen that irrespective of age & gender multidisciplinary approach involving four departments are being suggested for full mouth rehabilitation rather than treatment by 1 or 2 departments.

In this study, we can see the preference of multidisciplinary approach for full mouth rehabilitation. The comparison over gender and the treatment by departments was established as males were comparatively at higher risk of oral diseases.

Morita et al. also stated that males would have more oral health problems (Morita *et al.*, 2014). Therefore, in this study, a comparison was made to check the treatment approach for women, but it was majorly a multidisciplinary approach as like for men. Salazar et al. established a relation between gingival complications and age and stated that people over 50 were to be treated for periodontal problems alongside with other problems (Salazar, 2013). Hence, a study comparing the age and disciplines was established to find the difference in treatment plan.

Full mouth rehabilitation is not always complex involving multiple teeth problems; it can range anywhere between completely edentulous mouth with bone loss to patients with overdentures, chronic periodontitis, multiple cervical abrasions etc.

Ashish et al. had recorded a similar kind of case report from Saveetha dental college wherein a patient was treated for multiple worn teeth and occlusal discrepancy at the same time (Jain, 2013). Numerous challenges have been stated by many dentists regarding the perfect outcome of full mouth rehabilitations (Brown, 1980). In the case of full mouth, rehabilitations emphasis must be made on the complete understanding of the problems and providing treatment (Agrawat *et al.*, 2018). Severe wear cases produce severe challenges for long term success (Beyth *et al.*, 2006; Shellis and Addy, 2014).

Evidence-based of use of techniques like post and core following root canal treatments, implants, crown lengthening has been found giving satisfying results (Subait, 2016). Khodaeian et al. reported that a combination of orthodontic, endodontic, periodontic and prosthodontic treatment is required for successful full mouth rehabilitations, but also this should take in consideration the factors like age, socioeconomic status of patients before initiation of treatment (Khodaeian *et al.*, 2012).

From all the previous literatures, it can be seen that there is a global consensus with the results of this study and it can be taken as evidence to practice. Certain limitations were observed in the study which includes controlled population, neglection of socioeconomic status etc. All these can be minimized by taking into account all details regarding

patients and including larger and multiple groups. The future scope is to estimate the efficiency and need and contributions of different disciplines to the success of full mouth rehabilitation.

CONCLUSION

Full mouth rehabilitation involves restoring the teeth, jaw muscles and self-esteem back to a natural-looking condition. Optimum oral health should be the prime objective of all rehabilitation procedures. Within the limitations of the study, it can be said that the multidisciplinary approach was necessary for the success of full mouth rehabilitations as they give the most optimal result than any other kind of approach.

ACKNOWLEDGEMENT

The author, thanks to the information technology department of Saveetha dental college for assisting in data retrieval for the study.

Conflict of Interest

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

Funding Support

The authors declare that they have no funding support for this study.

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