ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF RESEARCH IN PHARMACEUTICAL SCIENCES

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

An assessment of various factors in patients who underwent full mouth rehabilitation in a university hospital set up

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Article History:

Received on: 25 Jul 2020
Revised on: 20 Aug 2020
Accepted on: 11 Sep 2020

Keywords:

Attrition,
Full mouth rehabilitation,
Gender,
Sex predilection,
tooth wear

ABSTRACT

The best treatment option available for treating any generalised tooth structure loss is to undergo full mouth rehabilitation. Full mouth rehabilitation aims at restoration of form and function of masticatory apparatus to nearly as normal condition as possible. The aim of the study was to report on the gender distribution and most common cause for full mouth rehabilitation among patients with FMR in a private dental college over six months of period. A retrospective study was done using the case records of patients visiting University hospital from June 2019 - March 2020. Case sheets with information on full mouth rehabilitation were retrieved and analysed using SPSS 20.0 software. Descriptive statistics and chi-square tests were performed. The results reported that there were no particular differences in gender distribution. Both females and males had equal predilection(50 % - males, 50 % - Females). Majority of the males who are diagnosed with FMR were in the age group 59 to 68 years whereas females diagnosed with FMR were in the age group 49 to 58 years which was found to be statistically significant as determined by chi-square tests(p value< 0.05). The most common reason in males for full mouth rehabilitation was attrition whereas in females multiple missing teeth, however, there was no significant association between the genders and cause of full mouth rehabilitation as determined by Pearson's chi-square test (p value> 0.05). Within the limits of the study, it can be concluded that Full mouth rehabilitation was done in both genders equally and females underwent FMR at a much younger age than males.

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ISSN: 0975-7538

DOI: https://doi.org/10.26452/ijrps.v11iSPL3.3008

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IJRPS | https://ijrps.com

INTRODUCTION

Tooth Wear can be defined as the loss of dental hard tissues (Litonjua, 2003) and the surfaces of teeth by factors other than dental caries (Venugopalan, 2014). The most common causes of tooth wear can also be by developmental disorders or trauma to the teeth. The most common tooth surface loss can be caused by either of the following - Attrition, abrasion, erosion, abfraction (Litonjua, 2003).

Attrition is the most common and is predominantly seen in people of old age due to excessive

wear and tear during mastication throughout their lifetime (Shafer *et al.*, 1983; Regezi *et al.*, 2016). Whereas the other causes such as abrasion and erosion are less commonly observed (Goldstein, 2018). Tooth surface loss can also be attributed to developmental anomalies such as amelogenesis or dentinogenesis Imperfecta which has malformed teeth naturally and is more susceptible to tooth loss.

The best treatment option available for treating any generalised tooth structure loss could be to undergo full mouth rehabilitation. Full mouth rehabilitation aims at restoration of form and function of masticatory apparatus to nearly as normal condition as possible with the help of combinations of fixed partial dentures, overdentures and even implants (Ashok *et al.*, 2014; Selvan and Ganapathy, 2016; Ajay *et al.*, 2017; Duraisamy *et al.*, 2019). It involves judicious involvement of different disciplines to formulate a treatment plan the best suitable to confirm with the patient's needs and expectations, at the same time maintaining the integrity and harmony of associated hard and soft tissues (Rajesh *et al.*, 2014; Jain, 2018).

The prevalence of tooth structure loss varies according to age, gender, occupation and among different areas and cultures (Taiwo, 2005; Saerah, 2006; Wetselaar *et al.*, 2016). It has been reported that tooth wear is more common among males than females in communities with similar socio-demographic factors. So if this were the case, then FHR (full mouth rehabilitation) would also be in general greater in males than in females. Thus, this research study aims to further investigate this hypothesis.

Tooth wear lesions most oftenly lead to complications and loss of enamel dentin which ultimately results in dentin hypersensitivity, which further can lead to pulpitis and pulpal necrosis. Thus, it is important to create a clear understanding and increase awareness about preventive and comprehensive treatment (Ganapathy, 2016; Ganapathy *et al.*, 2017; Kannan and Venugopalan, 2018) options.

Most of the previous research has been focused on tooth wear patterns among different age groups. Still, very little attention on different treatment options for these types of generalised tooth loss cause for tooth surface loss, thus this study will focus on this to create awareness about the condition and availability of better treatment options (Jain *et al.*, 2017).

The aim of the study was to report on gender distribution and the most common reasons for FMR in patients who underwent Full mouth Rehabilitation in Saveetha dental college and hospitals over a period of six months.

MATERIALS AND METHODS

The study was carried out in an institutional setting with the advantage of being a large data availability and the disadvantage of being an assessment of patients belonging to a similar geographic location. A retrospective study was done using the 86,000 case records of patients visiting University hospital from June 2019 - March 2020. Prior permission to use the data for the study was obtained from the Institutional Review Board of the University (SDC/SIHEC/2020/DIASDATA/0619-0320).

A total of 58 case sheets with information on full mouth rehabilitation were filtered and the most common causes for Full mouth rehabilitation and the demographics of the data studied. The collected data were subjected to photographic cross verification. The data collected were statistically analysed using SPSS Version 20.0. Descriptive statistics and chi-square tests were performed. A p-value of less than 0.05 was considered to be statistically significant.

RESULTS AND DISCUSSION

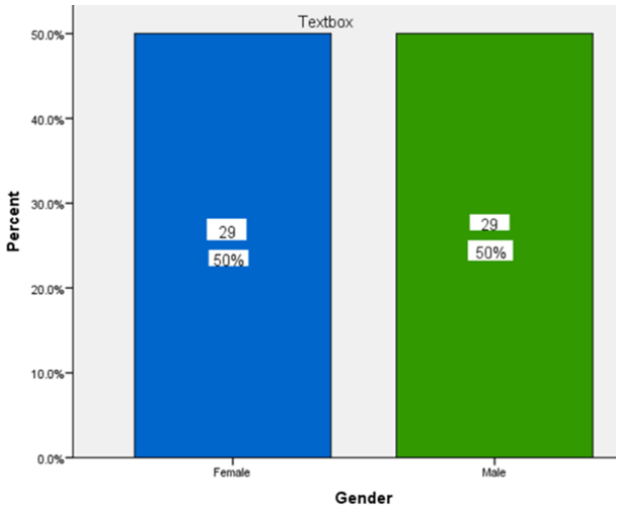

Figure 1: The bar graph shows the frequency of males and females with full mouth rehabilitation

The results reported that there were no particular differences in gender distribution. Out of the 58 case sheets retrieved, Full mouth rehabilitation was done in both genders equally (50 % - males, 50 % - Females).

(Figure 1) Majority of the males who were diagnosed with FMR were in the age group 59 to 68 years, whereas females diagnosed with FMR were in the age group 49 to 58 years. The X-axis represents the genders and Y-axis represents the number of participants in each category with the blue bars rep-

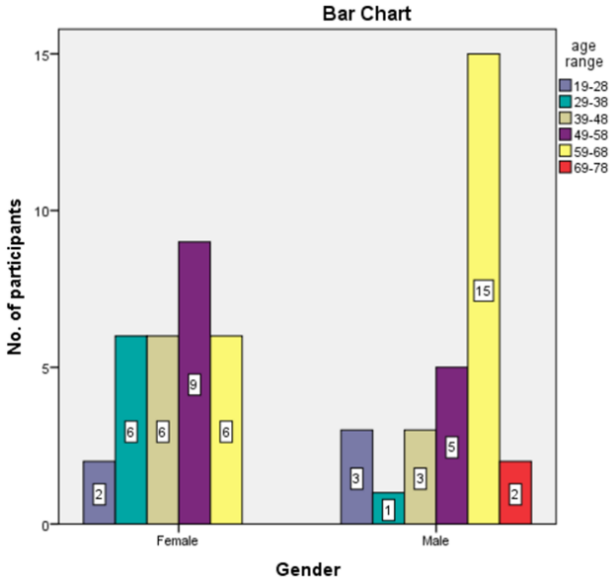

Figure 2: Bar graph represents the association between gender and different age groups in which Full mouth rehabilitation was done

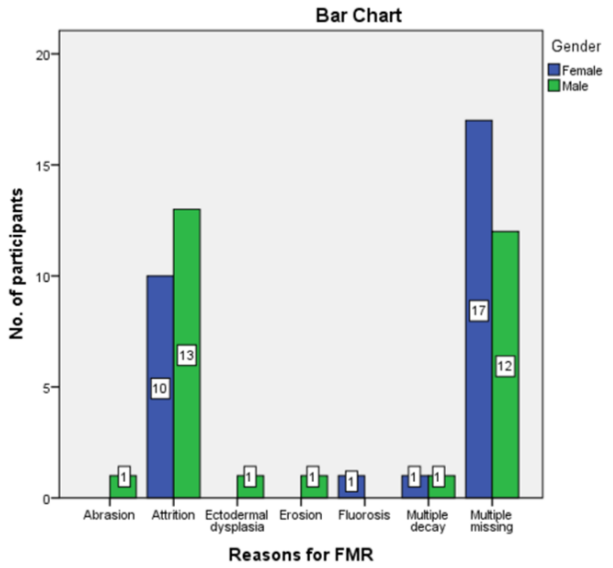

Figure 3: Bar graph represents the association between the most common cause for FMR

resenting female and green bars representing males. Full mouth rehabilitation was done equally in males and females. (50 % - Males, 50 % - Females).

(Figure 2) This was found to be statistically significant with a p-value < 0.05 as determined by Pearson's chi-square test, proving that females underwent FMR at a much younger age than females.X axis represents the gender and Y axis represents the number of participants in different age groups. Chi square test was done and association was found to be statistically significant. Pearson's chi square value: 11.8, DF:5, p value :0.03 (<0.05) hence statistically significant proving that females undergo full mouth rehabilitation at a much younger age (49-58 years) than males (59-68 years).

The most common reasons which were reported to cause generalised tooth surface loss which leads to full mouth rehabilitation were attrition, multiple missing teeth, multiple decays and other dental deformities such as amelogenesis imperfecta.

The most common reason in males for undergoing full mouth rehabilitation was attrition, whereas, in females, it was multiple missing teeth (Figure 3). However, there was no statistically significant (p-value > 0.05) association between gender and the cause for undergoing Full mouth rehabilitation as determined by Pearson's chi-square test. Bar graph represents the association between the most common cause for FMR and different genders in which Full mouth rehabilitation was done where blue bars represent females and green bars represent males. X axis represents the different reasons and Y axis represents the number of participants with a particular cause for FMR. Chi square test was done and association was found to be statistically not significant. Pearson's chi square value: 5.2, DF:6, p value :0.5 (>0.05) hence statistically not significant, proving there is no association between gender and causes for FMR. The most common reason in males for undergoing full mouth rehabilitation was attrition, whereas, in females, it was multiple missing teeth.

The institution study was conducted to determine the gender distribution and the most common reason for full mouth rehabilitation patients visiting a private dental college in Chennai from June 2019-February 2020.

The prevalence of tooth wear lesions vary greatly according to age, gender, occupation and geographic regions. (Saerah, 2006) reported that tooth wear lesions are higher in males compared to females when considered in communities with similar sociodemographic factors. Previous research by (Braimoh and Alade, 2018) also reports similar results. This can thus imply that males are more affected when considering full mouth rehabilitation cases, as there are no studies directly reporting the details of full mouth rehabilitation and any gender, age, predilection among the patients with full mouth rehabilitation. Most of the previous studies done in this topic are case reports (Bencharit *et al.*, 2010; Song *et al.*, 2010; Rajesh *et al.*, 2014).

The results of our study revealed that there were no particular differences in gender distribution among patients with full mouth rehabilitation. This suggests that both females and males have similar awareness and access to full mouth rehabilitation. This seems to be a good sign as there seems to be no

kind of discrimination between females and males and both have equal access to the treatment.

Our study reveals that the majority of the males who were diagnosed with FMR were in the age group 59 to 68 years, whereas females diagnosed with FMR were in the age group 49 to 58 years. This implies that the early maintenance of oral health seems to be better in males than in females, this is the reason that females tend to undergo full mouth rehabilitation at a much younger age when compared to males. This may be due to the fact that most men are working and pay more attention to their appearance due to their active interactions with others in the society, whereas females on the other hand mostly remain at home thus paying very little attention to oral health.

According to our study, the most common reason in males for undergoing full mouth rehabilitation was attrition similar to results of a study by (Jinsa *et al.*, 2017) whereas, in females, it was multiple missing teeth. This is due to the excessive masticational force during their lifetime in males. In females, the most common cause was found to be missing teeth as usually females are dependent on others for their expenses as well as to travel outside, they prefer extracting their teeth which is so much faster and less expensive when compared to complicated, time-consuming treatment such as root canal treatment to save the teeth. The other causes due to which patients, in general, opt for full mouth rehabilitation would be abrasion, multiple decays, fluorosis, ectodermal dysplasia and amelogenesis imperfecta (Rajesh *et al.*, 2014).

However, no studies were found to report the age, gender distribution in patients with full mouth rehabilitation diagnosis, nor the most common causes of full mouth rehabilitation among males and females. This further strengthens the need for this research and shows a void in this field. This encourages us to probe further into this area.

This study even though first in its topic, had not escaped from having few limitations. Only a small sample size over a short duration (6 months) was considered. Full mouth rehabilitation is an expensive treatment and thus a lot of patient factors like economic status, willingness to pay for the expense, availability of such treatment options all seem to play a role in the results.

Old age consists of a prominent portion of our population thus their needs and requirements also need to be catered by society (Ashok and Suvitha, 2016; Vijayalakshmi and Ganapathy, 2016; Jyothi, 2017). In fact, dental health (Subasree *et al.*, 2016; Basha *et al.*, 2018) in them must be good in order to replenish their nutritional requirements. Thus, this study will throw some light on their dental health and how it can be managed early and in a better manner.

CONCLUSION

The current study focussed on gender distribution and the most common cause of tooth surface loss among patients with full mouth rehabilitation. Within the limits of the study, it can be concluded that there were no differences in gender distribution. There was a statistically significant association between gender and age groups. Females underwent FMR at a much younger age than males. The most common cause of full mouth rehabilitation in males was attrition and in females was multiple missing teeth. There was no statistically significant association between gender distribution and the cause for Full mouth rehabilitation.

ACKNOWLEDGEMENT

We take the pleasure to acknowledge the University for giving us permission to assess the digital database and use it for analysis.

Funding Support

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

Conflict of Interest

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

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