Retrospective Study on Patient Compliance Following Tooth Extraction

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Abstract

The aim of this study is to investigate the follow up and compliance of patients who sternly follow the post operative instructions after non surgical permanent tooth extraction. Data collection were taken from patients who reported to the college from a particular time period which is from June 2019 to March 2020. The number of extractions and reviewers were obtained from dental archiving software which is offered by the university. The statistical test that was run was the chi square test using statistical software SPSS by IBM. The results were represented in the form of graphs and pie charts. In this study , the most common age group were 41-50 years of age(20.38%) and >60 years of age for extractions (25.75%) and reviews respectively and the most common gender predilection was found to be male subjects more than female subjects (53.55%). The number of patients who returned for reviews were very less (3459 out of 21648) compared to the total number of extractions done. Hence, awareness programs must be initiated and people must be emphasised for vigorous oral hygiene maintenance.

Keywords: *Extraction,Compliance,Post operative instructions, Post operative complications, Dry socket*

Introduction

In dentistry, various treatment procedures are done to treat dental problems. [1] Extractions are the most common surgical procedure in Oral Surgery and it appears well documented in literature. Dental extraction is the most common procedure carried out by dentists such as extraction of mandibular third molar before an orthognathic surgery [2] and it is a common model for evaluating the efficacy of analgesics for acute dental pain relief. It is often associated with swelling, pain, and trismus. The pain of tooth extraction is likely to be one of the most severe pain that an individual experiences during his or her life. [3] A similar study done in Saveetha dental College, Dept of Oral and Maxillofacial Surgery, was to compare the effect of application of 0.2% chlorhexidine gel, a eugenol based paste, together with a control group on the postoperative incidence of alveolar osteitis in patients having third molars extracted. The chlorhexidine group showed less incidence of alveolar osteitis than other reported studies and also less pain, inflammation, infection, and better wound healing than the control group. [4]

Several authors have described that there are many factors that influence in easing the extraction procedure as well as the impact of this procedure on the quality of life of patients during the postoperative care [5]. Study done in Saveetha Dental College showed that tranexamic acid was the best protocol in the management of blood loss, minimizing the operating time, and providing the best surgical field. Maxillary impacted third molar is

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removed before or during maxillary osteotomies to prevent postoperative infection [6]. However, the post extraction period is also impacted by the understanding of the patient and the subsequent implementation of the guidelines presented by the professional in order to reduce the morbidity, complications and to improve the quality of lifestyle of the patient. [7]

Postoperatively, it is very important to control the pain and surgical site should be well-managed to improve the treatment outcomes [8]. The postoperative period is influenced by the understanding of the patient and the successive achievement of the instructions presented by the professional in order to minimize morbidity, complications, and improve the quality of life of the patient. [9] Oral squamous cell carcinoma is one of the most commonly occurring oral lesions, in which extraction of hopeless teeth is done before radiotherapy. In some salivary gland pathology, like ranula, mucocele occurs due to sharp teeth that can be either conservatively managed or extracted. [10]

In cases of Oral submucous fibrosis, restricted mouth opening which can cause difficulty in extractions and may lead to complication like oroantral communication.It showed that buccal fat pad graft proved to give better results as the interposition material for closure of oroantral communication as it has good patient acceptance, rapid epithelization, minimal donor site morbidity and minimal intra and postoperative complications [11].In some cases of inferior alveolar nerve block for removal of mandibular molar, facial paralysis can occur. The ability to use Botox as an adjuvant and primary mode of treatment for various maxillofacial disorders offers exciting treatment options for dentists and patients in the future [12]. One of the most common causes of maxillofacial trauma is road traffic accidents, in which extraction of teeth in the fracture line is removed.

Administration of local anesthesia is one of the procedures which results in increased anxiety level among patients. [13]. Pre-operative dental anxiety is a major predictor of pain experienced by patients during dental extractions. Hence, it is important to reduce anxiety before treatment to reduce pain during the treatment. Pharmacologic modalities like sedation can be used for reducing anxiety and pain related to the treatment in indicated patients. [14] Adequate and effective communication between doctor and patient increases the level of understanding and therefore reduces postoperative complications.. In order to achieve therapeutic achievements, patients must obey and be cooperative with the clinical prescriptions. Interestingly, there is a large possibility that stress may vary in terms of gender and hence result in a difference in healing of the socket .Follow-up is essential to support the patient in recovery. According to Monaco, Staffolani, Gatto and Checchi, age and gender along with smoking and alcohol consumption may cause variations in postoperative complications[9].

Any study related to patient compliance and follow up rate has its own challenges. This could be due to the travel time for the patient, lack of understanding of the post-operative instructions and such other reasons. The aim of this study is "to investigate the follow-up rate and compliance of patients who sternly follow the post-operative instructions after non-surgical permanent tooth extraction through health status of the socket"

Materials and Methods

This study was done in a university setting. The data collected was obtained from the institution. Ethical approval was obtained from the Institutional scientific review board, Saveetha Dental College and Hospitals. There are three reviewers for this data namely the guide, the researcher and the reviewer. The data was from a time period of one year which was from June 2019 to March 2020. Cross verification of the data was done by one additional reviewer. Inclusion of all available data was done to minimize the sampling bias.

Data was reviewed from the case record of 21,648 patients and then the data was extracted and filtered using the exclusion and inclusion criterias. The exclusion criteria includes primary teeth extraction and incomplete database and inclusion criteria includes permanent teeth and complete database. The collected data was entered and sorted in excel sheets and then was exported to SPSS software. The incomplete or censored data were excluded from the study.

The statistical analysis used was chi square test and the statistical analysis used was SPSS by IBM. The list of independent variables includes tooth number and the dependent variable includes age and gender. The type of

analysis done was correlation and association.

Results and Discussion

A total number of patients included in the study was 21,648. Out of which 21,648 (85.9%) patients underwent extractions and the number of patients who reported for follow up were 3549 (14.1%). Incidence of Male subjects were higher for extractions (53.5%) compared to female subjects (11594 out 21,648)(Fig 1). The most common gender among those who reported for reviews were male subjects (1895 out of 3549) (53.3%) (Fig 2)The most common age group found among extractions were 41-50 years of age (20.38%) (Fig 3) and for those who reported for review was age greater than 60 years (27.75%) (Fig 4). Correlation between the 7 different age groups of patients tand the gender of the patients that underwent extractions. (Fig5) Correlation between the 7 different age groups of patients tand the gender of the patients that reported for reviews. (Fig 6)

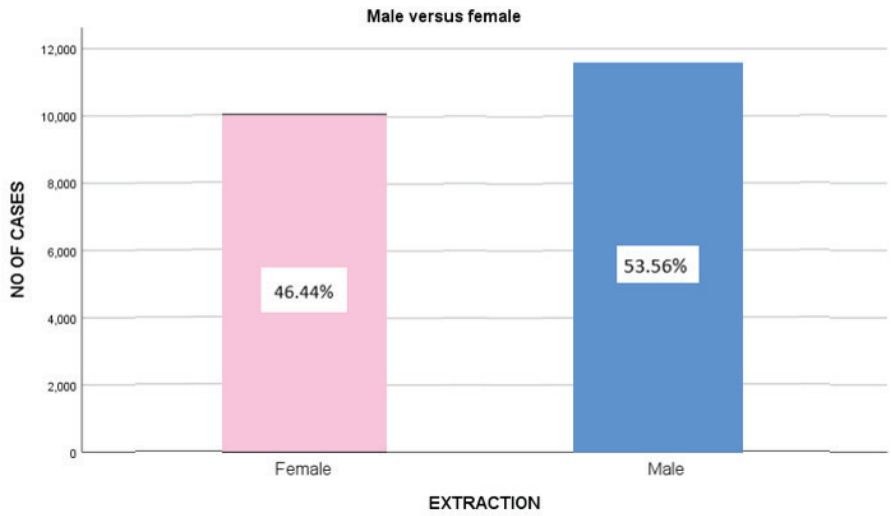

Fig 1: Graph 1 represents the number of extractions done based on gender of the patient. The x axis represents the gender of the patients and the Y axis represents the number of patients studied. Male 11,594 shown as blue in the graph and female subjects 10,054 shown as pink colour in the graph.

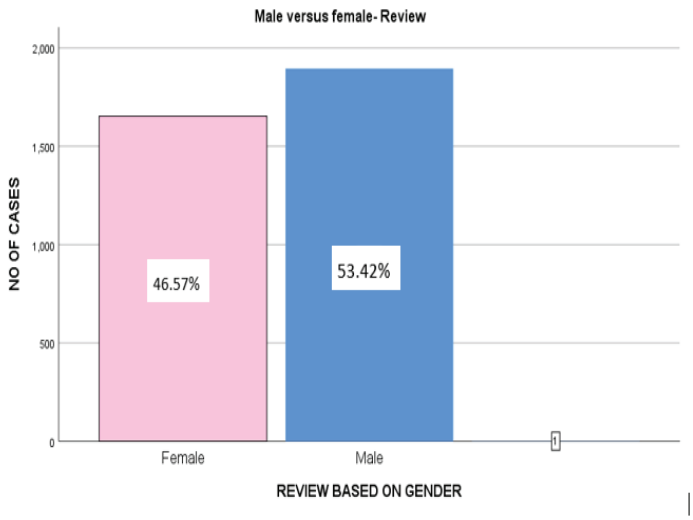

Fig 2: Graph 2 represents the number of patients that reported for reviews based on gender. The x axis represents the gender of the patients and the Y axis represents the number of patients studied. Male subjects shown in blue colour in the graph again show a higher incidence compared to female subjects depicted in pink colour, showing a 1895 out of total patients of 3549. (53.3%)

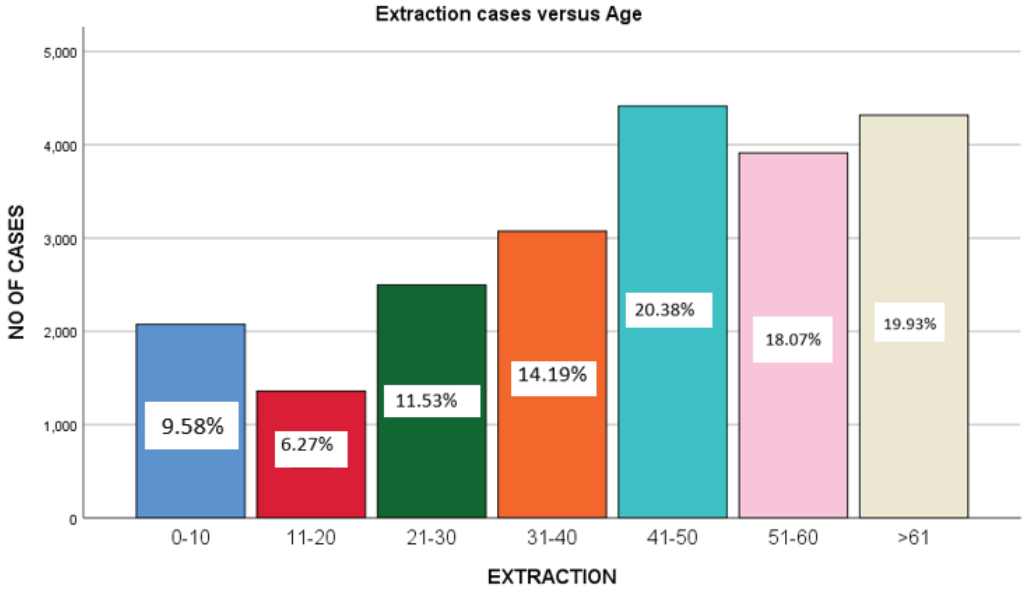

Fig 3: Graph represents the number of extractions done based on age. The x axis represents the age of the patients which was divided into 7 different categories and the Y axis represents the number of patients studied. The 7 categories were namely 0-10= 2076, 11-20= 1358 , 21-30= 2498, 31-40= 3073, 41-50= 4414, 51-60= 3913 and >60 years= 4316. 20.38

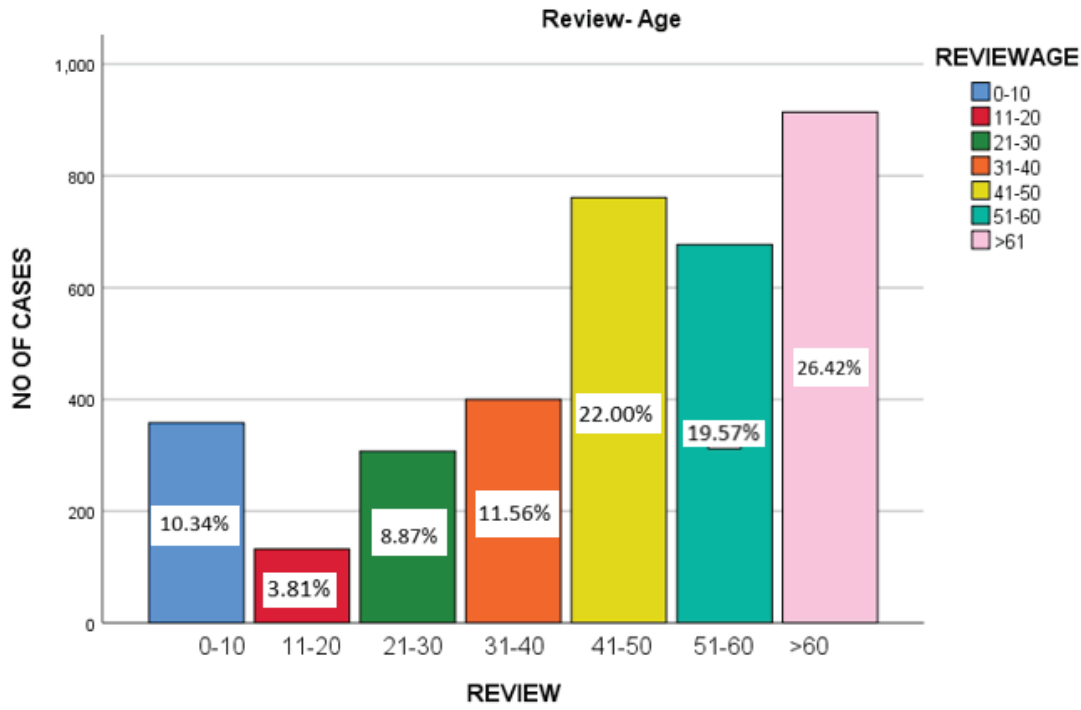

Fig 4**:** Graph represents number of patients who reported for reviews based on age of the patient. The x axis represents the age of the patients which was divided into 7 different categories and the Y axis represents the number of patients studied. The 7 categories were namely 0-10= 358, 11-20= 132, 21-30= 307, 31-40= 400, 41-50= 761, 51-60= 677 and >60 years= 914. The total number of subjects that appeared for reviews were 3549 out of 21,648.

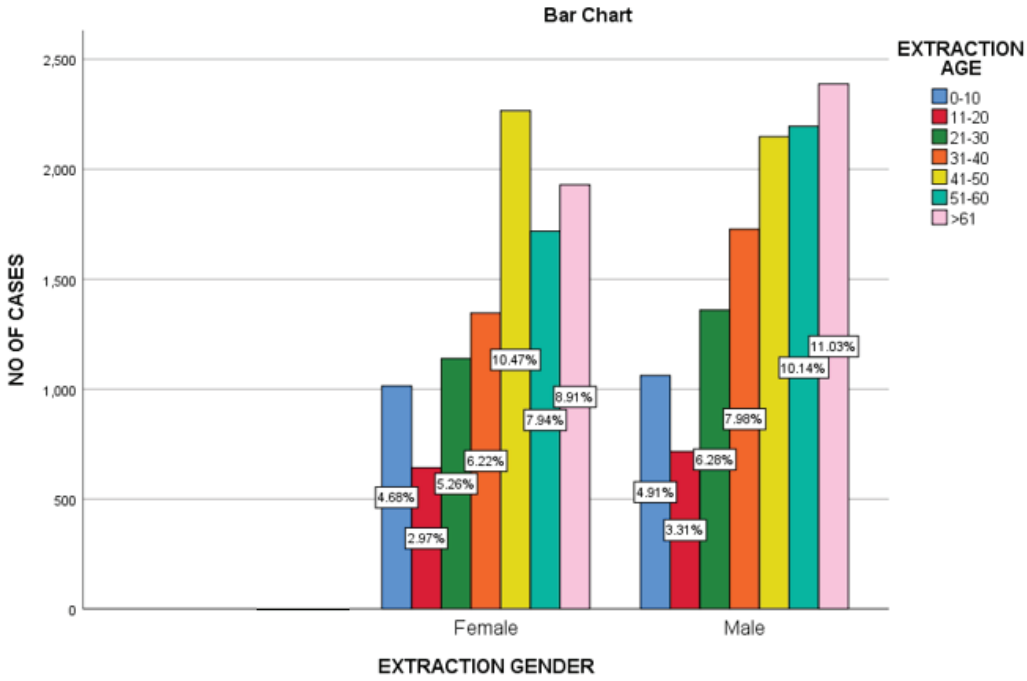

Fig 5: Bar graph shows the correlation between the 7 different age groups of patients tand the gender of the patients that underwent extractions. X axis represents the gender of the patients in 7 categories and Y axis represents the number of patients who underwent extraction. Chi square test was done and association was found to be statistically significant. Pearson's chi squared test value 76.553 Df: 12, p value:0.000 <0.5 Hence statistically significant. The graph infers that male subjects underwent more number of extractions than female subjects.

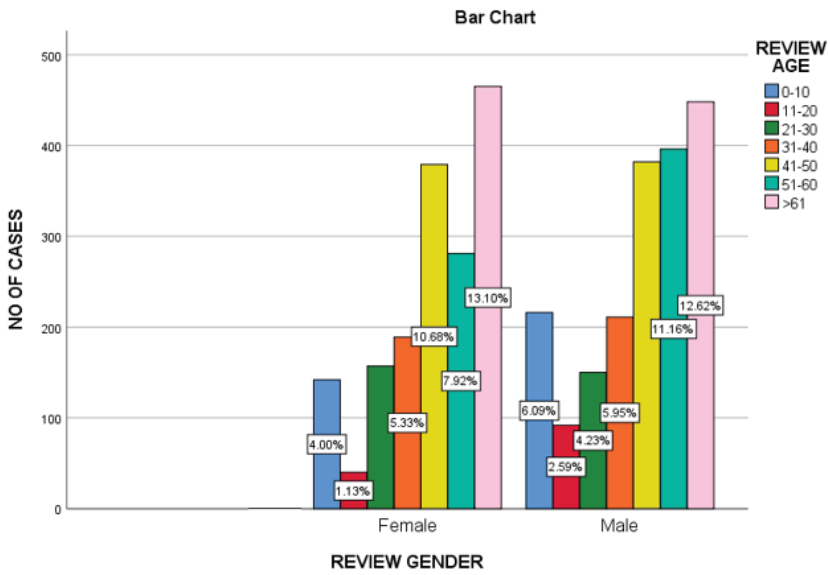

Fig 6: Bar graph shows the correlation between the 7 different age groups of patients tand the gender of the patients that reported for reviews. X axis represents the gender of the patients in 7 categories and Y axis represents the number of patients who reported for review. Chi square test was done and association was found to be statistically significant. Pearson's chi squared test value 43.584 Df: 12, p value:0.000 <0.5 hence statistically significant. The graph inferes that female subjects reported for reviews more compared to male subjects.

From this study we observe that the number of patients who are diagnosed are more than the number of patients who underwent the treatment. The most common gender predilection who underwent the treatment and those who reported for the reviews were males. The most common age group were found to be 41-50 years for extraction and >60 years for review.

AGE GROUP- EXTRACTION

The most common age group for extraction seen was 41-50 years. The highest incidence of extraction was observed at the age of 41- 50 years. The results are almost similar to the studies conducted in other regions. This could be due to poor oral hygiene maintenance, age related periodontal problems, bone atrophy, tooth wear, smoking and increased risks of co-morbidities in Adults. Although this is not in consistent with the study at Department of Khyber College of Dentistry, Peshawar in which higher incidence of proportion of patients had undergone extraction at a younger age i.e. 26 – 35 years[15]

AGE GROUP- REVIEW

The most common age group for review was around >60 years. Farheem et al 2014(P-value (p=0.489)) shows that there was no statistically significant association between age and socket status. [9]

GENDER- EXTRACTION AND REVIEW

The most common gender predilection in those who had an extraction and those who reported for reviews were males. These results are consistent with the study conducted in Lahore in which a large proportion of male population has undergone extraction as compared to females. [15 16 17]

However, this was inconsistent with a study conducted in University of Sulaimani, which showed females were in higher proportion for extraction as compared to males a clear predominance of male patients was observed in this study, correlating with the reports published earlier. [16]. Females are more commonly affected than males with a ratio of 1:1.4 [17] The reason for this might be the low self-care and especially dental care in our female population. It could also be due to lack of awareness, dependency and difficult approach to dental facilities. The knowledge acquired must be transferred into daily practice. This can be achieved by a change in their attitude towards oral hygiene maintenance. Inclusion of oral health-oriented education programs in their curriculum would improve their knowledge and behaviour and they would be a good model to the community.[18] The importance of training regarding Biomedical waste management also must be emphasized as the lack of proper and complete knowledge about biomedical waste management impacts practices of appropriate waste disposal. [19] Irrespective of the year of study, the majority of the students showed a negative attitude towards HIV/AIDS patients and only a few among the interns showed a positive approach towards treating HIV patients. [20 21]

Conclusions

The limitations of study could be short duration and cross sectional type of study design. But similar types of studies have been conducted in other parts of the world like one in Afghanistan where sample size was 184 and study duration was three months. It is recommended that this study should be conducted in broad horizon and should be designed longitudinally so that the results should be more representative of the population. It is also recommended that community awareness programs must be initiated and people must be emphasized for vigorous oral hygiene maintenance. Government authorities should facilitate the dental organizations for community awareness campaigns. A proper health system including efficient dental care programs focusing on prevention and treatment of these diseases should be created and developed on a larger scale.

Conflict of Interest:

The authors would like to declare that there is no conflict of interest among the authors.

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