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# Prevalence and Treatment of Periodontitis, Mandibular Fracture and Complete Edentulism in a Known Population.

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(Received: 27 (	October 2023	Revised: 22 November	Accepted: 26 December)
-	ABSTRACT	:	
KEYWORDS Periodontitis, Mandibular fracture, Edentulism, Prevalence, Treatment.	Background: The mandibular frace Material and me subjects were in subjects who we years. The study was 25.6 years. Results: In this 21, 20 and 19 m 3, respectively. a day for 3-5 da root planing do of 30 subjects we 10 subjects show the mandible. The in the area of of managed by app the mandible we lag screws and me Conclusion: The edentulism in the planing. Mandille	his study was conducted to assess the future and complete edentulism in a knower end was about the procedure and were ere willing to participate in the study. Any excluded those who were not willing statistical analysis was performed using study, there were total 60 males and 3 males, respectively. Whereas, there we was mild periodontite managed by open reduction and the reme he fracture at the angle of the mandible blique line and the second at the inferiodication of arch bars fixed with interest as managed by open reduction and interminiplates.	Prevalence and treatment of periodontitis, own population. were examined for dental problems. The asked to give consent. The study included All the subjects in the study were above 18 g to participate. The mean of the subjects ng SPSS software. 0 females. Group 1, 2 and 3 comprised of re 9, 10 and 11 females in group 1, 2 and is were advised warm saline rinses 3 times eriodontitis were asked to get scaling and alism were advised complete denture. Out had fracture at the angle of the mandible, maining 10 showed the fracture of body of e was managed using 2 miniplates, the first or border. The dentoalveolar fracture was dental wiring. The fracture of the body of ernal fixation (ORIF) and combination of entitis, mandibular fracture and complete ith warm saline rinses and scaling and root ring and plating procedures and complete s to the patients.

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### Introduction

Periodontal disease is a chronic inflammatory disease of periodontium and its advanced form is characterized by periodontal ligament loss and destruction of surrounding alveolar bone.<sup>1</sup> It is the main cause of tooth loss and is considered one of the two biggest threats to the oral health.<sup>1,2</sup> There are approximately 800 species of bacteria identified in the oral cavity<sup>3</sup> and it is hypothesized that complex interaction of bacterial infection and host response, modified by behavioral factors such as smoking, can result in periodontal disease.<sup>4</sup>

Edentulism is the state of being edentulous, or without natural teeth.<sup>5</sup> Complete edentulism is an oral cavity without any teeth. Adequate dentition is quite essential for well-being and life quality. Edentulism is one of the public health burdens for elderly people and effects clearly the practice of primary care. Edentulism is a devastating and irreversible condition and is described as the "final marker of disease burden for oral health."<sup>6</sup> Patients who are suffering from edentulism exhibit a wide range of physical variations and health conditions. Teeth loss affects mastication, speech, and may result in poor esthetics which in turn affect the quality of life.<sup>7</sup>

### Results

#### Table 1: Group-wise distribution of subjects.

Adequate treatment of mandible fractures not only restores an individual's ability to speak, chew, breathe, and sleep, but also reestablishes their occlusion and facial aesthetics. An analysis of the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP) database showed that mandible fractures were the most common isolated facial fracture.<sup>8</sup> The causes of mandible fractures are varied and include motor vehicle accidents (MVAs), assault, domestic violence, falls, sports- and work-related accidents, ballistic injuries, and pathologic fractures.<sup>8-11</sup>

Hence, this study was conducted to assess the Prevalence and treatment of periodontitis, mandibular fracture and complete edentulism in a known population.

### Material and methods

In this study, total 90 subjects were examined for dental problems. The subjects were informed about the procedure and were asked to give consent. The study included subjects who were willing to participate in the study. All the subjects in the study were above 18 years. The study excluded those who were not willing to participate. The mean of the subjects was 25.6 years. Statistical analysis was performed using SPSS software.

Groups	Number of subjects
Group 1 (Periodontitis)	30
Group 2 (Complete edentulism)	30
Group 3 (Mandibular fractures)	30
Total	90

Out of 90 subjects, 30 showed periodontitis, 30 showed complete edentulism and 30 showed mandibular fractures. Hence, the subjects were divided into three groups of 30 subjects each based on the dental condition.

#### Table 2: Gender-wise distribution of subjects.

Gender	Group 1	Group 2	Group 3
Males	21	20	19
Females	09	10	11
Total	30	30	30

In this study, there were total 60 males and 30 females. Group 1, 2 and 3 comprised of 21, 20 and 19 males, respectively. Whereas, there were 9, 10 and 11 females in group 1, 2 and 3, respectively.

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### Table 3: Treatment of the dental conditions.

Groups	Treatment
Group 1 (Periodontitis)	Scaling and root planing
Group 2 (Complete Edentulism)	Complete dentures
Group 3 (Mandibular fractures)	Wiring and plating

The subjects who had mild periodontitis were advised warm saline rinses 3 times a day for 3-5 days while the subjects with moderate periodontitis were asked to get scaling and root planing done.



The subjects with complete edentulism were advised complete denture. The primary impression of the subjects was recorded using impression compound cake. The secondary impression was taken with the help of zinc oxide eugenol impression pastes. The jaw relation was recorded and teeth setting was done followed by try in and insertion.

Out of 30 subjects with mandibular fractures, 10 subjects had fracture at the angle of the mandible, 10 subjects showed dentoalveolar fractures and the remaining 10 showed the fracture of body of the mandible. The fracture at the angle of the mandible was managed using 2 miniplates, the first in the area of oblique line and the second at the inferior border.



The dentoalveolar fracture was managed by application of arch bars fixed with interdental wiring.



The fracture of the body of the mandible was managed by open reduction and internal fixation (ORIF) and combination of lag screws and miniplates.

### Discussion

Dentoalveolar fracture is defined as a fracture in the bone surrounding the teeth without any extension to the basal bones of the maxilla or mandible.<sup>12</sup> Traumatic dental injuries account for a total of 92% of maxillofacial injuries of which 92% involves only the soft tissues and 8% involve the maxillofacial bones.<sup>13</sup>

Rehabilitation of the edentulous patients has always been a challenge. Edentulism, which has both functional and psychosocial consequences, can be corrected with the placement of removable dentures.<sup>14</sup> The success of

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this treatment modality might be affected not only by the patients' acceptance of his new dentures, but by his ability to use them which depends to a great extent on the quality of those dentures.<sup>15</sup> Accordingly, the success of conventional complete denture therapy might be affected by several factors such as patients' age, personality, previous denture wearing experience, expectations, aesthetics, residual ridge form and anatomy, denture quality, the method of its construction, dentist experience, and dentist-patient relations.<sup>16,17</sup>

Hence, this study was conducted to assess the Prevalence and treatment of periodontitis, mandibular fracture and complete edentulism in a known population.

In this study, there were total 60 males and 30 females. Group 1, 2 and 3 comprised of 21, 20 and 19 males, respectively. Whereas, there were 9, 10 and 11 females in group 1, 2 and 3, respectively. The subjects who was mild periodontitis were advised warm saline rinses 3 times a day for 3-5 days while he subjects with moderate periodontitis were asked to get scaling and root planing done. The subjects with complete edentulism were advised complete denture. The primary impression of the subjects was recorded using impression compound cake. The secondary impression was taken with the help of zinc oxide eugenol impression pastes. The jaw relation was recorded and teeth setting was done followed by try in and insertion. Out of 30 subjects with mandibular fractures, 10 subjects had fracture at the angle of the mandible, 10 subjects showed dentoalveolar fractures and the remaining 10 showed the fracture of body of the mandible. The fracture at the angle of the mandible was managed using 2 miniplates, the first in the area of oblique line and the second at the inferior border. The dentoalveolar fracture was managed by application of arch bars fixed with interdental wiring. The fracture of the body of the mandible was managed by open reduction and internal fixation (ORIF) and combination of lag screws and miniplates.

**Varma SV et al<sup>18</sup>** identified the prevalence of chronic periodontitis and chronic stress as well as a comparative evaluation of clinical, demographic, and psychoanalytical parameters among the South Indian population. A total of 500 subjects between the ages of 30 and 60 were chosen from the Trivandrum district, Kerala, using multistage random sampling. Subjects were evaluated based on psychoanalytical parameters as well as periodontal examination. Psychoanalytical parameters were measured by the questionnaire method using the perceived stress scale. Periodontal parameters examined were the probing depth, clinical attachment loss, bleeding on probing, simplified oral hygiene index, and community periodontal index (loss of attachment). Categorical and quantitative variables were expressed as frequency (percentage) and mean  $\pm$  SD respectively. Logistic regression analysis was used to analyze the association between the periodontal variables and psychoanalytical variables. All the statistical analysis was performed using IBM Statistical Package for Social Sciences (SPSS) Statistics for Windows (IBM Corp., USA). A total of 500 subjects, of whom 308 (61.6%) were female and 192 (38.1%) were male, participated in this study. The overall prevalence of periodontitis among all the subjects was found to be 42.4%, and the proportion of periodontitis among the stressed participants was found to be 46.2%, which is 10% higher compared to the non-stressed (36.1%) participants. Their study showed an increased frequency of periodontitis among the stressed subjects as compared to the non-stressed subjects. These findings suggest that there is a positive association between chronic stress and chronic periodontitis, but further prospective studies are required to establish the extent of the effect chronic stress has on chronic periodontitis and vice versa.

The study by **Barde D et al**<sup>19</sup> attempted to delineate predictable patterns of fracture based on patient demographics and mechanism of injury in central part of India. The medical records of patients with mandibular fractures treated over a 3 years period were identified and analyzed based on age, sex, mechanism of trauma, seasonal variation, drug/alcohol abuse, number and anatomic location. They reviewed 464 patients having mandibular fractures with age ranging from 7 to 89 years. Male (343, 79%) to female (91, 21%) ratio was 3.7:1, significantly higher for males. The highest incidence (37.5%) of mandibular fractures was in the age group of 21–30 years. The main cause was road traffic accidents (RTAs, 68.8%) followed by falls (16.8%), assaults (11%) and other reasons (3.8%). Parasymphyseal fractures were the most frequent 331 (41.1%), followed by condyle (135) and angle (124)fractures in occurrence. Mandibular angle fractures were found mostly to be associated with assault victims.

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The mechanism of injury correlates significantly with the anatomic location of fracture and knowledge of these associations should guide the surgeons for appropriate and timely management. Because RTAs are most frequent, good traffic sense needs to be imbibed and developed by the government as well as the public.

### Conclusion

There was equal prevalence of periodontitis, mandibular fracture and complete edentulism in this study. Periodontitis was managed with warm saline rinses and scaling and root planing. Mandibular fractures were managed with wiring and plating procedures and complete edentulism was managed by giving complete dentures to the patients.

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