

# COMPLETE EDENTULISM AND CONTRIBUTING FACTORS AMONG THE JORDANIAN POPULATION

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## ABSTRACT

*This study aims to find out the predominance of complete Edentulism through analyzing patients visiting the Prosthodontic Department at the Ministry of Health Amman, Jordan concerning age and gender. The data was collected from 230 patients who reported a complete denture treatment for the first time by completing a questionnaire over a period of one year, which covered their age, gender, duration, and the reasons for edentulousness. The cases were split into three age groups; Group 1 (30-50 years), Group 2 (51-70), and Group 3 (71 years and above).*

*The results showed that 136 (64%) of the patients were males while 75 (36%) were females. The majority of the patients were from age group 2 (51-70 years), while the minority were from age group 1 (30-50 years), and periodontal disease was the major cause of Edentulism in males and females. Conforming to the span of complete edentulousness, the largest sum of both male and female patients became edentulous in the duration of up to 6 months.*

**Key word:** Edentulism, Jordan, Factors.

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## INTRODUCTION

Edentulism is one of the major public health concerns for older individuals influencing the practice of primary care. It is an overwhelming and irreversible condition and is portrayed as the “Final marker of disease burden for oral health”.<sup>6</sup> Edentulism is characterized as the loss of all permanent teeth<sup>2</sup> and is the terminal result of a multifactorial cycle including biological process (caries, periodontal diseases, pulpal pathology, trauma, oral cancer) as well as non-biological factors connected with dental procedures like access to care, patient’s preferences, treatment options, and so forth.<sup>3</sup>

The loss of teeth can weaken function, aesthetics, phonations and is retrieved most often with a prosthesis. Albeit preventive dentistry safeguards teeth, the demand for prosthodontic treatment is expected to increase even in developed countries because of the rapid growth in their elderly population.<sup>2-4</sup> Numerous nations have an aging population, making the age group of [65 and above] form 50% of the population in the coming decades. The quantity of edentulous patients even in countries with a high quality of dental health care is striking.<sup>2-4</sup> As indicated by the World

Health Organization (WHO) Global Oral Data Bank, the Predominance of Edentulism older than 65 years was displayed as 58% in Canada, 41% in Finland, and 46% in the United Kingdom.<sup>5</sup>

Edentulism is reliably demonstrated to increment with age, with females having higher percentages of Edentulism than males.<sup>6</sup> The prevalence of complete Edentulism among developed and less developed countries might be related to a perplexing interconnection between cultural, individual, and socioeconomic variables and wellbeing. The World Health Organization (WHO) Data Banks indicates that dental caries is common in many nations globally with some announcing 100% occurrence in their populations. Extreme periodontal illness is assessed to influence 5 to 20% of the populace and the frequency of complete Edentulism has been assessed to impact 7% to 69% of the global populace.<sup>7</sup> Various cross-sectional investigations on the spread of edentulousness are associated with age, gender, and living conditions in various countries.<sup>7,8,9,10</sup>

The goal of the present study is to assess the prevalence of complete edentulousness with respect to age and gender, to disclose the extent and causes of complete edentulousness.

## MATERIALS AND METHODS

This study was done on a sample of completely edentulous patients who were looking for a complete denture treatment for the first time at the Prosthodon-

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tics Department in the Ministry of Health (Amman, Jordan) for a period of over one year. The completely edentulous patients in both arches form a total of 230, 100 females and 130 males. Patients were inspected clinically under artificial light using a sterile dental examination set with a prepared questionnaire that was used to record their personal information including age, gender, duration, and the causes of edentulousness.

The patients were organized into the subsequent categories: group 1 (30-50 years), group 2 (51-70 years),

and group 3 (71 and above). The patients were acquainted with the kind of study and provided their accord verbally. The gathered data were surveyed statistically applying the chi-square test at the significant degree of  $P < 0.05$ .

**RESULTS**

The results of this study revealed that 136 (64%) of the patients were males while 76 (36%) were females. For details see table 1-4.

TABLE 1: PATIENTS DISTRIBUTION ACCORDING TO AGE AND GENDER

Group	Age range	Males		Females		Total		Chi value	P-value
		Count	%	Count	%	Count	%		
Group 1	30 - 50 years	19	57.60	14	42.40	33	15.6	0.199	0.8z4
Group 2	51-70 years	71	65.10	38	34.90	109	51.4		
Group 3	71 years and above	46	65.70	24	34.30	70	33		
	Total	136	64.20	76	35.80	212	100		

TABLE 2: CAUSES OF TEETH LOSS AND ITS RELATION WITH GENDER.

Reasons for teeth lost	Males		Females		Total		Chi value	P-value
	Count	%	Count	%	Count	%		
Periodontal disease	75	63	44	37	119	56	0.199	1
Dental caries	61	65.6	32	34.4	93	44		
Total	136	64	76	68	212	100		

TABLE 3: DISSEMINATION OF MALES PROPORTIONAL TO THE DURATION OF EDENTULOUSNESS.

Duration of edentulous	Male No.	Percentage (%)	Chi value	P-value
Up to 6 months	101	0.74	0.22	0
6 months to 1 year	16	0.12		
1-5 years	7	0.05		
5-10 years	4	0.03		
Above 10 years	8	0.06		
Total	136	100		

TABLE 4: DISSEMINATION OF FEMALES PROPORTIONAL TO THE DURATION OF EDENTULOUSNESS.

Duration of Edentulous	Female No.	Percentage (%)	Chi value	P-value
Up to 6 months	55	0.72	0.22	0
6 month to 1 year	11	0.14		
1-5 years	5	0.07		
5-10 years	3	0.04		
Above 10 years	2	0.03		
Total	76	100		

## DISCUSSION

Complete Edentulism is a global issue, especially for individuals aged 65 years and above, and is not only concentrated in third world countries, as it can be found in Ireland (48.3%), Malaysia (56.6%), the Netherlands (65.4%), and Iceland (71.5%) that report some of the uppermost levels. While women have been recorded to lose all their teeth at a greater rate (3% higher in the United States) than men, this trend seems to be country-specific.<sup>7-10</sup>

In this study, the percentage of males was noticeably higher than females, 64% and 36% respectively, making this compatible with some studies and incompatible with others. According to Suominen-Taipale et al., there was a higher percentage of edentulous females than males in 1978 while in 1997, the percentage was the same for both males and females. Moreover, in 2012, Ogunrinde and Dosumu found a higher percentage of edentulous males which is justified by the fact that females relied more on male members of the family to take them for treatment while males did not rely on anyone and comfortably came alone.<sup>17</sup>

Concerning age distribution among subjects, the largest percentage of edentulousness was in age group<sup>2,51-70</sup> (51.4%), and the lowest percentage was apparent in group 1,30-51 (15.6%). Age was closely linked with Edentulism<sup>11,12,13</sup> and this finding was predictable due to the accumulative impacts of dental caries and periodontal illnesses, as well as treatment decisions linked with these two fundamental variables, all rise with age.<sup>7,8</sup> Differential treatment choices across socioeconomic circumstances, such as endodontic versus tooth extraction, may also take part in the overall tooth loss factor.<sup>9, 14,15,16</sup>

Conforming to the span of complete edentulous, the highest percentage of both males and females was clear in the duration category of [up to 6 months], denoting 0.74% and 0.72% respectively. The interpretation is that they can't wait for more than 6 months without teeth for aesthetic and functional reasons and the high need to replace the missing teeth as long as they can<sup>18</sup> The highest percentages of complete edentulousness in females were found in the age group 1, 30-50 (42.4%), then age group 2, 51-70 (34.9%), and the lowest percentages were found in group 3, 71, and more (34.3%). This revealed that females were becoming edentulous at an earlier age than males. This result matches the references: Xie (1999) (7) and that of Kaira and Dabral (2014).<sup>11</sup> While the highest percentages of complete edentulousness in males were found in age group 3, 51-70 (65.7%), then age group 2 (65.1%), followed by age group 1 (57.6%). This exhibited that males become edentulous at a later age than females.

Periodontal illness and dental caries are viewed as the crucial determining factors for the top incidence of tooth loss and accordingly for the extraordinary level of Edentulism<sup>11</sup> An immediate relationship exists between smoking and the control of periodontal diseases.<sup>13,21</sup> Epidemiological data indicate that the predominance and seriousness of periodontitis were notably greater in patients with diabetes mellitus than in those without diabetes.<sup>10,21,22</sup> Failure to visit the dentist frequently was also found to be a crucial reason.<sup>17</sup> Tobacco chewing and smoking are detrimental to periodontal wellbeing.<sup>7,8,12, 23</sup> Smokers likewise will generally have negative health behaviors such as poor standards of oral hygiene, less thorough tooth brushing practices, and are bound to choose extraction as an acceptable dental treatment.

This study disclosed that periodontal disease was the leading cause of edentulousness and then dental caries. While other studies exhibited different results; researches have also displayed comparative critical discoveries. Although it is reported in various types of literature that dental caries was the main common root of edentulousness.

The outcome of complete Edentulism on the oral and facial structures are notable measures for forecasting the long-term effects of tooth removal for any patient. The consequences of chronic periodontal diseases are strongly related to tooth loss and other foundational conditions. These accretive effects remain speculative and have long-range clinical ramifications for totally edentulous patients; however, it appears to be those completely edentulous patients might be at likelihood for the formation of other comorbid conditions, including diabetes, cardiovascular illnesses, dementia, asthma, and others, yet whether these conditions are casual or not is still to be determined.

Further examination is necessary to fix the relationship of various integral diseases with the full removal of teeth. As the prolonged impacts of tooth extraction on residual ridge resorption are common, the prognosis for the preservation of the edentulous ridge height and width without dental implant treatment still seems inadequate.<sup>8,9,14,16-19,20,24</sup>

## CONCLUSION

A strong link was observed between age, gender, dental caries, and periodontal disease with Edentulism, realizing that complete edentulousness may be diminished by preventing periodontal diseases.

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