

Prevalence Of Complete Edentulism Among Patients Visiting The District Private Dental Hospital Of Thiruvallur, Tamil Nadu

Mohamad Qulam Zaki Bin Mohamad Rasidi

Saveetha Dental College And Hospitals
Saveetha Institute Of Medical And Technical Sciences
Saveetha University
Email: 151501099.Sdc@Saveetha.Com

Kiran Kumar Pandurangan

Senior Lecturer,
Department Of Prosthodontics,
Saveetha Dental College And Hospitals
Saveetha Institute Of Medical And Technical Sciences
Saveetha University
Email: Kirankumar.Sdc@Saveetha.Com

Dinesh Prabu

Senior Lecturer,
Department Of Oral Surgery,
Saveetha Dental College And Hospitals,
Saveetha Institute Of Medical And Technical Sciences
Saveetha University
Email: Dineshprabum.Sdc@Saveetha.Com

ABSTRACT

Complete Edentulism Is Defined As The Loss Of All Permanent Natural Teeth. Loss Or Missing Teeth Have An Influence On Any Individual Self-Reflection Such As Their Quality Of Oral Health From The Perspective Of Their Level Of Biological, Psychological, And Social Status. The Patient With A Complete Edentulism Percentage Is Expected To Decline In The Upcoming Decades Due To Improvement In Oral Health, Meanwhile, Their Number Will Increase Due To An Increase In The Aging Population. Hence, The Aim Of This Study Was To Assess The Prevalence Of Complete Edentulism Among Patients Visiting The District Private Dental Hospital Of Thiruvallur, Tamil Nadu. A Retrospective Cross-Sectional Study Was Conducted Among Complete Edentulous Patients Who Reported To Private Dental Hospital. Data Collection Was Obtained From Dental Information Archiving Software Database (DIAS) By Reviewing The Patient Records Of 86,000 Patients Between June 2019 And June 2020. Parameters Were Assessed For Age, Gender, And Complete Edentulism. The Collected Data Were Tabulated In Excel Sheets Which Were Transcribed To SPSS Version 20 For Statistical Analysis. Among 392 Patients, 61 To 70 Years Age Group Patients Showed A Higher Prevalence Of Complete Edentulism (39.3%). Males (55.6%) Showed Higher Prevalence Than Females (48.5%).

Keywords: Age, Complete Edentulism, Oral Health, Prevalence, Tooth Loss

1. Introduction

Loss Or Missing Teeth Have An Influence On Any Individual Self-Reflection Such As Their Quality Of Oral Health From The Perspective Of Their Level Of Biological, Psychological, And Social Status.^{1,2} In Recent Decades, The Prevalence And Occurrence Of The Missing Tooth Have Declined Significantly In Most Of The Countries.^{3,4} There Is Significant Variation In The Distribution Of Missing Teeth. These Variations Of Distribution May Be Attributed To The Increased Availability And Low Accessibility To The Prevention Of Oral Diseases And Oral Health Programs, Including The Lack Of Importance Of Oral Health Awareness Among Communities.⁵ The Evaluation On The Missing Tooth Trends, Different Occurrences Between Populations Based On Gender, Age May Give Benefit On Current Information About Tooth Loss Risk Factors, Changes In Community Oral Health Status.⁶

Tooth Loss Or Edentulism Is A World Public Health Problem Due To Its Higher Prevalence Which Occurs In More Than 10% Of Individuals Aged 50 Years And Above.⁷⁻⁹ Tooth Loss Occurs Due To Dental Caries And Periodontal Related Diseases And Missing Teeth Will Give Undesirable Causes To The Mental Health Of The Patients, Which Occur Due To The Changes Occurring In Both Functional And Aesthetics.¹⁰ In Addition, Causes That May Lead To The Loss Of Teeth Are Age Factors, Menstruation Including Pregnancy, Old Age Female Living Alone And Males With Cigarette Smoking Habits Which May Result In Edentulism Or Losing Teeth In Their Life.^{10,11}

Hygienic Status Of People In Communities Can Be Determined By Their Edentulism, As The Low Culture Societies Can Be Attributed As Having Widespread Edentulism. In Taking Consideration Of Scientific Advances, And Increasing Human Longevity As The Component Of Public Health, The Person Is More Prone To Develop Edentulism Due To Their Inclination In Soft Foods Consumption.^{10,12,13}

The Edentulism Also Serves As The Terminal Sign Of Any Ongoing Oral And Systemic Diseases Of The Patients.¹² The Loss Of Teeth Are Attributed To The Multiple Interactions Of Systemic And Oral Health, Genetic Influence As Well As The Environment Factors.¹² The Correlation Between Systemic And Oral Health Such As The Occurrence Of Chronic Diseases Such As Uncontrolled Diabetes Mellitus Type 2, Hypertension, HIV Positive Status, Smoking, Obesity Or Poor Mental Health May Lead To Increased Risk Of Edentulism In Various Age Groups.¹⁴ Gender And Different Ethnicity Also Has Been Proposed By Various Studies As One Of The Risk Factors That Caused The Edentulism.¹²

The Health Care And Its Delivery Improvement In The Community Which Results In The Inclination Of The Elderly Population And It Is Being The Fastest Growing Population In Our Community.¹⁵ In The Current Year, India Is Subjected To Have More Than 158 Million Elderly Population, And It Is The Second-Largest Number Worldwide After China For Their 230 Million Elderly.¹⁶ Complete Edentulism Is One Of The Key Indicators For Oral Health In Our Population, In The Elderly Especially.¹⁷ In Recent Studies, Conducted By Researchers On Oral Health In Elderly Population, Showing That There Are Various Dismissive Effects On Health-Related Quality Of Life Resulted From Their Complete Loss Of Teeth.¹⁸

The European Countries Depicted A High Percentage Of The Edentulism Rate If Compared To The Other Continents In The World. This Includes Scotland (85%), The Netherlands (83%), England (74-79%), Ireland (72%), Northern Ireland (69%), Denmark (68%), Finland (67%), And Norway (57%).^{19,20} Several Studies Have Shown That There Is Consistency In The Higher Number Of Complete Edentulism To The Increase In The Age Of Females When Compared To Males.^{21,22} Database In The World Health Organization (WHO) Showing That Prevalent Of Dental Caries Are 100% In Communities Internationally, A Severe Periodontal Disease With An Estimated 5% To 20% Affected The Population And The Complete Edentulism In The International Population Has Been Estimated Between 7% And 69%.¹² Previously Our Team Has A Rich Experience In Working On Various Research Projects Across Multiple Disciplines The ²³⁻²⁵²⁶⁻³⁷.

The Patient With A Complete Edentulism Percentage Is Expected To Decline In The Upcoming Decades Due To Improvement In Oral Health, Meanwhile, Their Number Will Be Increased Due To An Increase In The Aging Population³⁸. Hence, This Study Was To Evaluate The Prevalence Of Complete Edentulism Among Patients Based On Age And Gender.

2. Materials And Methods

A Retrospective Cross-Sectional Study Was Performed Among Completely Edentulous Patients Visiting Private Dental Hospital, Chennai. Ethical Approval For The Study Was Granted By The Institutional Ethical Committee, IEC Approval Number: SDC/SIHEC/2020/DIAS DATA/0619-0320. Data Were Collected By Reviewing The 86,000 Patient Records Between June 2019 To April 2020 Based On Data Availability From

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Dental Information Archiving Software (DIAS) Which 392 Patients (218 Males And 174 Females) Aged Between 30 To 80 Years Old That Have Complete Edentulism, Age, And Gender Were Included In This Study. Patients Were Randomly Divided Into Five Groups, Group 1- 30 To 40; Group 2- 41 To 50 Years; Group 3- 51 To 60 Years; Group 4- 61 To 70 Years; Group 5- >71 Years. Partial Edentulism And Incomplete Data Were Excluded From The Study. Oral Examinations Were Analyzed Thoroughly And Cross Verified With Intraoral Photographs. The Collected Data Were Tabulated In Excel Sheets And Were Imported To SPSS Version 20 (IBM Corporation). Descriptive Statistics And Chi Square Test Was Used To Determine The Correlation Between The Variables Where P Value < 0.05 Is Considered Statistically Significant With A Confidence Interval Of 95%.

3. Results And Discussion

Previously Our Team Has Conducted Numerous Original Studies^{12,39-52} Over The Past 5 Years. The Idea For This Study Stemmed From The Current Interest In Our Community. Complete Edentulism Or Tooth Loss May Prohibit Eating As Well As Limit Intake Of Foods Which Affect Dietary Intake, Nutrition Status And Compromise General Health Of The Patient.^{53,54}

In The Present Study, Out Of 392 Patients Of Complete Edentulism Were Examined Based On Gender And Age Groups. It Was Found That 218 (55.6%) Were Males And 174 (44.4%) Were Females. The Prevalence Of Complete Edentulism Was Higher In Male Than Females (Figure 1). These Results Were Similar To Other Studies Conducted By Kaira Et Al.¹⁹, Sonkesariya Et Al.⁵⁵ Basnyat Et Al.⁵⁶, Nagaraj Et Al.¹⁵, Vadavadagi Et Al.⁵⁷ And Saha Et Al.²⁰ Where Males Have A Higher Prevalence Of Total Population Compared To Females And Contradictory With The Study Conducted By Peltzer Et Al.⁹ Incidence Of Complete Edentulism Was High Prevalence Among Age Groups Between 61 To 70 Years (39.3%) And Least Prevalence Rate Among 30-40 Years (3.3%) Of Age (Figure 2). Similar Studies Were Done By Al-Rafee⁵⁸ And Federal At Al.⁵⁹ There Was A Disparity With The Study Done By Douglass Et Al.⁶⁰, Sonkesariya Et Al.⁵⁵ And Peltzer Et Al.⁹ Where The Incidence Of Complete Edentulism Was More Than 50 Years Of Age.

In This Present Study, Patients With Complete Edentulism Were Analyzed And Correlated With Their Age Groups And Genders, P-Value Is Less Than 0.05. Hence The Result Was Statistically Significant. Several Studies Agreed That The Incidence Of Edentulism Related To Low Levels Of Education And Socioeconomic Status Indicates More Risks Of Becoming Edentulous.⁶¹⁻⁶³ According To Few Studies, It Was Observed That Patients With Higher-Income Levels Approach Private Dental Clinics.^{64,65} Those Living In Rural Areas, Have Less Access To Dental Care Services When Compared To Their Urban Areas.⁶⁶ Our Institution Is Passionate About High Quality Evidence Based Research And Has Excelled In Various Fields (⁶⁷⁻⁷⁷).

The Limitations Of The Present Study Is The Limited Sample Size And Was Conducted In An Institution-Based Set-Up And A Single Centered Study Was Used. It Also Does Not Include Other Ethnic Populations. None Of The Nutritional Status And Systemic Conditions Assessed During The Examination. Hence, Further Study To Assess The Nutritional Status And Systemic Condition In The Larger Population And Plan In A Better Way By Including The Multi-Centre Population.

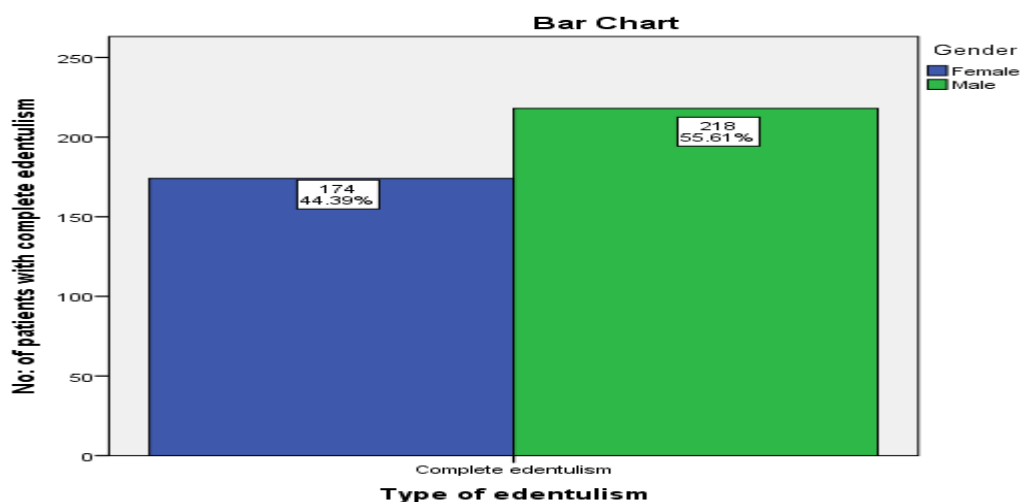


Figure 1: Bar Chart Depicting The Gender Wise Distribution Of Patients With Complete Edentulism. X-Axis Denotes The Genders Of Patients And Y-Axis Denotes The Number Of Patients Reported With Complete Edentulism. Based On Gender, Male (Green Colour) Showed A Higher Prevalence (55.6%) Of Edentulism.

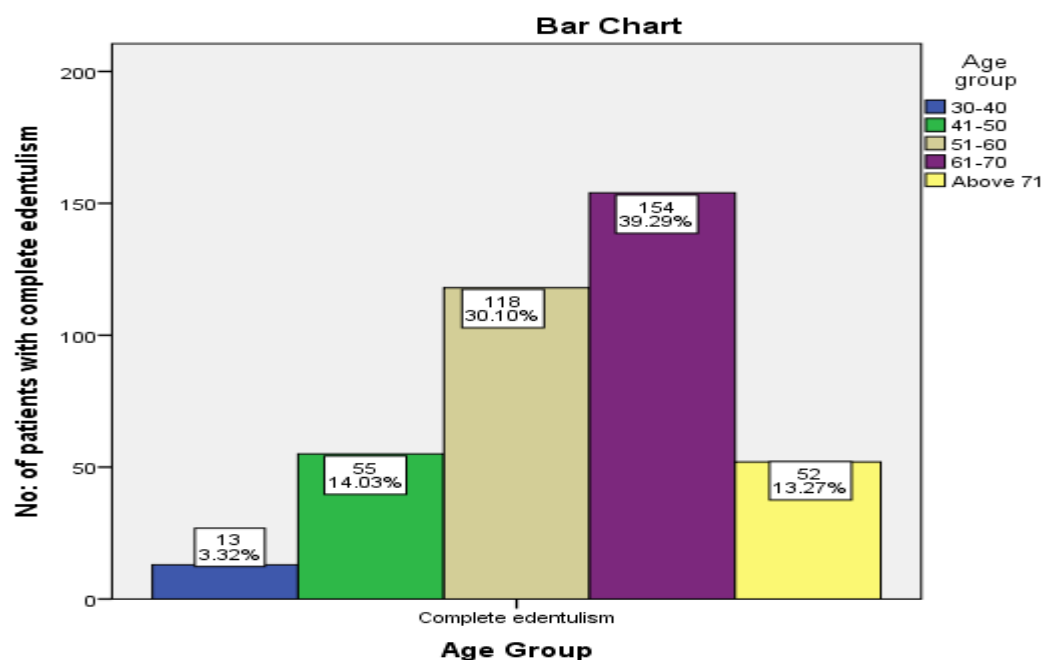


Figure 2 : Bar Chart Showing The Age Distribution On Patients Reported With Complete Edentulism. X-Axis Denotes The Age Group Of Patients And Y-Axis Denotes The Number Of Patients Reported With Complete Edentulism. Among Age Groups, 61 To 70 Years Old (Purple Colour) Shows High Prevalence Of Complete Edentulism (39.3%).

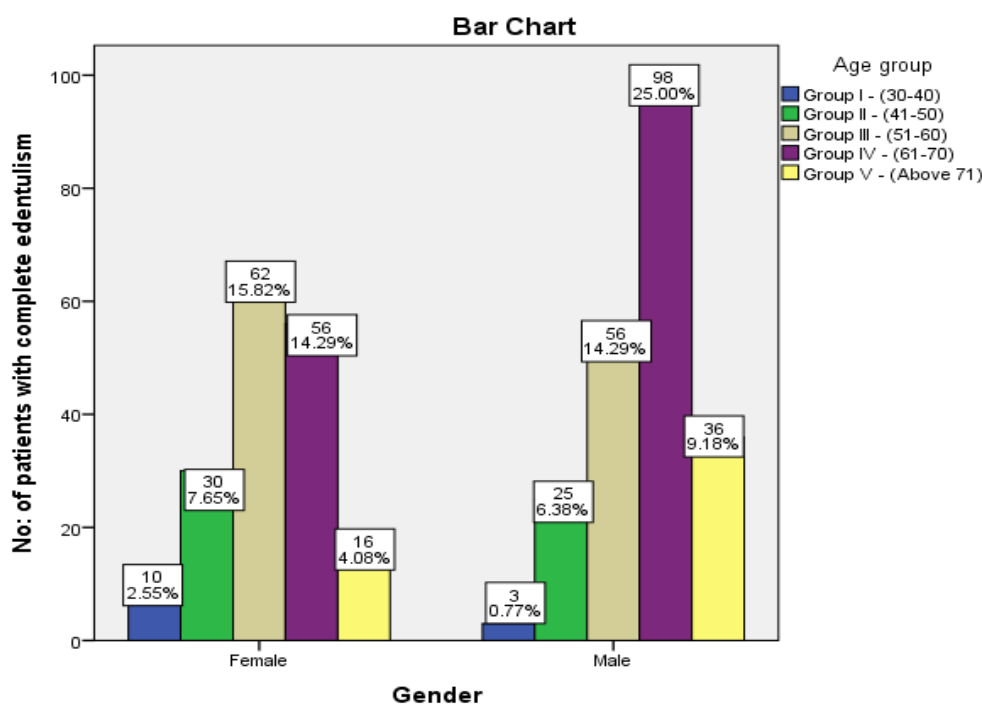


Figure 3: Bar Charts Represent The Association Between The Gender And The Different Age Groups. X-Axis Represents The Different Genders Of Patients With Different Age Groups And Y-Axis Represents The Number Of Patients Affected By Complete Edentulism. The Male Patients With Age 61 To 70 Years Old Most Affected

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With Complete Edentulism With A Percentage Of 39.3%, Meanwhile In Female Patients, Age 51 To 60 Years Old Were More Affected. Chi-Square Test Was Done, P-Value=0.001, $P < 0.05$, Which Is Statistically Significant. There Is Association Between The Gender And The Different Age Groups Of Patients With Complete Edentulism.

4. Conclusion

Based On The Results Of The Present Study, It Can Be Concluded That There Was A Higher Prevalence Of Complete Edentulism Among The Population Of 61-70 Years, With Higher Predilection In Males. Complete Edentulism Increased In Elderly Patients Which Would Increase The Need For Prosthetic Treatment. Awareness And Proper Dental Education On Oral Hygiene To Patients May Avoid Complete Edentulousness And Inturn Would Improve The Quality Of Life.

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6. Conflict Of Interest

This Research Project Is Self-Funded And Is Not Sponsored Or Aided By Any Third Party. There Is No Conflict Of Interest.

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