

# Prevalence of tooth loss among geriatrics of Amachalla, Igbo-Eze North L.G.A., Enugu State, Nigeria

Adamu, V. E.<sup>2,3</sup>, Omeh, O. B.<sup>1</sup>, & Enejo, N. I. F.<sup>2</sup>

<sup>1</sup> Dental Therapy Department, Federal College of Dental Technology & Therapy, Enugu, Nigeria

<sup>2</sup> Allied Health & Biological Sciences Department, Legacy University, Banjul, The Gambia

<sup>3</sup> School of Global Health & Bioethics, Euclid University (Pôle Universitaire Euclide)

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### Correspondence to:

Lead-Author: Dr. V. E. Adamu  
veadamu@gmail.com

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## ABSTRACT

### Introduction

Tooth loss is the loss of one tooth or more teeth due to trauma, disease, or extraction. Tooth loss, depending on the degree, may reduce speech and masticatory abilities (which in turn affects intake of nutrition), and may impair aesthetics.

### Purpose

This study was conducted to investigate the prevalence of tooth loss among geriatrics of Amachalla, Igbo-Eze North L.G.A., Enugu State, Nigeria.

### Materials and Methods

A sample size of 200 geriatrics was selected for this study using the convenience non-probability sampling technique. Personal interview was used to collect the demographic data of the participants and oral examination was used to collect data on tooth loss. All observations made were recorded on a data sheet. Data generated were arranged in tables and analysed using descriptive statistics of percentages and a bar chart.

### Results

Results indicated that the overall prevalence of tooth loss in the study population was 74%. The most affected jaw was the mandible (42.5%). The majority of the participants lost 1 tooth – 3 teeth (97.3%), and the most frequently lost tooth was the premolar (30.4%).

### Conclusion

There is the need to evolve special oral health education programmes, targeting geriatrics, to control the risk factors of tooth loss.

## INTRODUCTION

Tooth loss or edentulosis is the falling off or extraction of one tooth or more teeth due to injury or disease such as mouth trauma, tooth decay, or gum disease. Tooth loss is a problem that often affects older people but it does impact some younger people too (Hillary, 1992). The causes of tooth loss range from poor dental care to illness, lifestyle choices, or injury to teeth. Tooth loss reduces masticatory abilities. (Molosecis, 2005).

Studies concerning epidemiology in dentistry have shown that dental caries and periodontal diseases are the most prevalent pathologies that affect the oral cavity (Bartlett et al., 2015). Previous studies performed by American researchers have suggested that dental caries was the main reason for tooth loss, and other studies conducted in New Zealand, Sweden, and even Brazil confirmed that dental caries may lead to tooth mortality (Ash, 1993). On the

other hand, some studies suggested that periodontal disease was the most prevalent reason for tooth loss (Bartlett et al., 1999). Any contrary finding could be explained by differences in the characteristics of the study population, immunological and genetic factors, cultural beliefs, and socioeconomic characteristics among others (David, 1999). Immunological and genetic reasons are some of the contributory factors that may explain why some populations exposed to some bacterial aetiologic factors did not develop similar pathological conditions (Borrel & Papanou, 2005).

Populations with poorer socioeconomic conditions have shown higher prevalence and extent of teeth mortality, which increases with age (Dugmore & Rock, 2004; Groller, 2009).

This study sought to investigate the prevalence of tooth loss among geriatrics of the Amachalla population

## MATERIALS AND METHODS

### Research Design

This research was carried out using a cross-sectional survey research design.

### Description of Study Area

The study area is Amachalla Autonomous Community in Igbo Eze North Local Government Area of Enugu State. Enugu is one of the 36 States of the Federal Republic of Nigeria. There is no river and no mountain located in the village. Amachalla is made up of 6 villages - Umuowa, Umuosai, Umuagbedo, Umuachakpa, Umueze, and Umuorigene and it is an Igbo-speaking community of Eastern Nigeria. It has three community primary schools and several clinics. There is no dental clinic in Amachalla. The people of Amachalla are predominantly farmers, traders, and civil servants who are of the Christian or traditional religious persuasion. The community has one central market known as the Eke Ozi market (F. Abugu, personal communication, August, 2018).

### Population of the Study Area

The population of Amachalla Community is 8500 (4000 female and 3500 male). The number of geriatrics (operationalised by this study as people aged 60 years and above) in the community is 400 (F. Abugu, personal communication, August, 2018).

### Samples size and Sampling Technique

A sample size of 200 geriatrics was selected for this study using the convenience non-probability sampling technique.

### Instrument for Data Collection

Personal interview was used to collect the demographic data of the participants and oral examination was used to collect data on tooth loss. All observations made were recorded on a data sheet.

### Method of Data Analysis

Data generated were arranged in tables and analysed using descriptive statistics of percentages and a bar chart.

## RESULTS

A total of 200 participants, selected from the 6 villages of Amachalla, were used for the study (Table 1).

**Table 1**

Distribution of the number of participants among the villages in the studied community

Village	Frequency	(%)
Umuowa	30	15
Umuosai	20	10
Umuagbedo	35	17.5
Umuachakpa	50	25
Umuorigene	40	20
Umueze	25	12.5
<b>Total</b>	<b>200</b>	<b>100</b>

40% of the participants were of the male gender while 60% were of the female gender (Table 2).

**Table 2**

Sex distribution of the participants

Sex	Frequency	Percentage (%)
Males	80	40
Females	120	60
<b>Total</b>	<b>200</b>	<b>100</b>

Most of the participants were within the '60 -69 years' age group (Table 3).

**Table3**

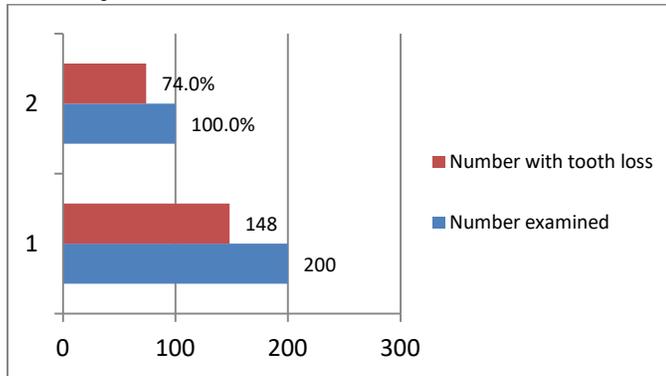
Distribution of age range of the participants

Age range	Frequency	(%)
60 - 69	104	52
70 - 79	5	27.5
80 - 89	39	19.5
90 - 99	2	1
<b>Total</b>	<b>200</b>	<b>100</b>

The overall prevalence of tooth loss in the study population was 74.0% (Figure 1).

Figure 1

The overall prevalence of tooth loss



The most affected jaw was the mandible (42.5%). 30.4% of tooth loss affected the maxilla, while 27.1% affected both Jaws. (Table 4).

Table 4  
Distribution of tooth loss in the jaws

Jaw	Frequency	(%)
Maxilla	45	30.4
Mandible	63	42.5
Both jaws	40	27.1
<b>Total</b>	<b>148</b>	<b>100</b>

The most frequently lost tooth was the premolar (30.4%). 27.0% lost incisors, 22.3% lost canines, and 20.3% lost molars. (Table 5).

Table 5  
Distribution of tooth loss among teeth typeS

Tooth type	Frequency	(%)
Incisor	40	27.0
Canine	33	22.3
Premolar	45	30.4
Molar	30	20.3
<b>Total</b>	<b>148</b>	<b>100</b>

Majority of the participants lost 1 tooth - 3 teeth (97.3%). 2.0% lost 4 - 6 teeth while 0.7% lost 7-9 teeth. (Table 6).

Table 6  
The number of teeth lost by the participants

Number of teeth lost	Frequency	(%)
1 tooth - 3 teeth	144	97.3
4 - 6 teeth	3	2.0
7 - 9 teeth	1	0.7
<b>Total</b>	<b>148</b>	<b>100</b>

## DISCUSSION

This research was carried out to determine the prevalence of tooth loss among geriatrics of Amachalla Community in Igbo-Eze, North Local Government Area of Enugu State, Nigeria.

A total of 200 participants were used for the study. Out of this number, 40% were of the male gender while 60% were of the female gender. Most of the participants were within the 60 - 69 years age group. The overall prevalence of tooth loss in the study population was 74.0%. These numbers are in agreement with the findings of Marcus et al. (1994) who reported a high prevalence of tooth loss among geriatrics.

The most affected jaw was the mandible (42.5%). The most frequently lost tooth was the premolar (30.4%). The majority of the participants lost 1 tooth - 3 teeth (97.3%). These findings are in agreement with the reports of Taylor et al. (2004), which also indicated similar results.

## CONCLUSION

Based on the analysis of the data there is the need to evolve special oral health education programmes, targeting geriatrics, to control the risk factors of tooth loss.

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**Conflict of Interest:** The authors declare no conflict of interest.

**OrCID iDs:** Nil identified.

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