Magnitude and Determinants of Periodontal Disease Among the Geriatrics People Age ≥65 Living in Macedonia Humanitarian Association, Addis Ababa, Ethiopia, July 2018.

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Objectives

Background: The periodontal disease is based on clinical findings including the presence and extent of periodontal pockets, loss of clinical attachment, pattern and extent of alveolar bone loss. Periodontal disease is one of the most widespread bacterial diseases of mankind.

Objective: The main objective of this study was to assess the prevalence and determinants of periodontal disease among geriatric peoples of 65 years of age and above living in Macedonia Humanitarian Association, Addis Ababa, Ethiopia.

Methods: Institutional based descriptive cross-sectional epidemiologic study design from July- November 2018. Selection of the study subjects was carried out through non- probability purposive sampling method. Data were collected both interview and clinical examination method. The collected data was coded, enter and analyzed using SPSS version 20 software.

Result: The majority respondents 135(74.2%) were between the age of 65-70 years and the remaining 47(25.8%) were the age of above70 years. Majority 118(64.8%) had periodontal problem, 31(17%) they had idea about periodontal problem, 34(18.7%) they were known the Causes of periodontal diseases.

Conclusion: The study community had poor oral hygiene. Majority them had gingival inflammation, teeth mobility, gum recession, calculus and periodontal problem. Most of them didn't know what periodontal diseases sign and symptoms. Poor oral hygiene habits (chewing, khat, alcohol....), bacteria and aging the main contributing factor for prevalence of periodontal disease was observed among study community groups.

Recommendation: Oral health providers should need to design health promotion strategies to different communities on preventive measures of periodontal diseases and regular dental checkups.

Keywords: Oral health; Dental Health; Old Age; Geriatric; Periodontal

Abbreviations: AAP: American Academy of Periodontology; AIDS: Acquired Immune Deficiency Syndrome; CDC: Centers for Disease Control; CPITN: Community Periodontal Index of Treatment Need; CRFA: Common Risk Factor Approach; DMFT: Decayed, Missing or Filled Teeth; MHA: Macedonia Humanitarian Association; NHANES: National Health and Nutrition Examination Survey; NUG: Necrotizing Ulcerative Gingivitis; OHI: Oral Hygiene Index; OHI-S: Simplified Oral Hygiene Index; PDI: Periodontal Disease Index; PTNS: Percutaneous Tibial Nerve Stimulation; SPSS: Statistical Package for Social Sciences; WHO: World Health Organization

Introduction

Periodontal disease is a chronic infectious disease of the supporting tissues are around the teeth leading to its progressive destruction. The periodontal disease is based on clinical findings including the presence and extent of periodontal pockets, loss of clinical attachment, pattern and extent of alveolar bone loss. A standard case of definition of a disease is a fundamental requirement for population-based surveillance of the disease. Multiple case definitions have been used in population studies on periodontal disease, including many which have been developed arbitrarily [1].

There are different manifestations of plaque induced periodontal diseases and these can vary from initial stages such as plaque-induced gingival disease to more severe conditions such as periodontitis [2].

The understanding of the distribution and factors associated with these conditions can provide useful information in planning public health actions [3].

The prevalence of the periodontal conditions varies significantly between ages and countries. In Europe, epidemiological evidence indicates that mild gingival inflammation and mild to moderate loss of periodontal attachment in specific sites are prevalent in the adult population [4,5].

Data from the 2009-2010 National Health and Nutrition Examination Survey (NHANES) revealed that the prevalence of periodontitis in the adult population (35-49 years) was 36.6% while in the elderly it was 70.1% is available data of the Latin America [6].

Considering the last Brazilian national survey performed in 2010, the prevalence of bleeding on probing in middle-age adults was 45.8% and in older adults 18.1%. For periodontal disease, the prevalence of "moderate to severe" symptoms in adults, ranged from 15.3% to 5.8 % for "severe" [7].

Considering associated factors, such as other chronic diseases, periodontal conditions share both systemic and local determinants [8].

The common risk factor approach (CRFA) considers that oral diseases, such as periodontal diseases, share common factors with systemic non-communicable diseases and this approach allows for more efficient public health planning [9,10].

In West Africa many studies have been conducted regarding periodontal disease. In Gambia (5-80%) of participants need complex periodontal treatments. More ever, there is more study which has dealt with necrotizing ulcerative gingivitis (NUG) and other type of periodontal disease [11].

The prevalence of periodontal disease using other indices than CPITN gave much higher percentages. For example, in Ethiopia and Sudan shows, after the age 30 years about 52% of the study participants were classified as having periodontitis, while the Sudan only 8% had advanced periodontitis. However, in population where there were a higher (51%) proportion of people with attachment loss, the prevalence of gingival pockets remained low of about 10% [12].

However, comprehensive data for the whole population, considering provinces and the capital, for different age ranges and factors associated with the different periodontal conditions, are not available in Ethiopia. Therefore, the aims of this study are to assess the prevalence of periodontal diseases and determinants including the age, gender, frequency of tooth brushing, and smoking in an adult population seeking dental services in Macedonia Humanitarian Association, Addis Ababa city, Ethiopia.

Periodontal diseases are one of the most important oral health conditions affecting population around the world. These are a major cause of tooth loss, particularly among the elderly, and significantly impact the quality of life of individuals, representing a public health problem [13].

Poor oral health including dental caries, periodontal disease, and loss of teeth can adversely affect the dietary intake and nutritional status and there by compromise health. Similarly, systemic diseases and /or the adverse side effects of their treatments can lead to an increased risk of oral diseases [14,15].

Periodontal disease impact on quality of life and increase the risk of other chronic disease cardiovascular diseases [16].

Periodontal health is often neglected in the older persons, and dental conditions associated with aging are complex, adversely affecting the day to day of life [17] so, the result of this study has a lot of public health on the life familiar age community groups.

The subject of prevalence of periodontal disease and determinants among geriatrics has been interesting to several dentists, dental schools and clinics. Various studies have been carried out; some of these are revised below.

The study reviewed on the prevalence of the periodontal disease measures in elder adults, aged 79 and older. 449 adults (mean age 85 years) from Iowa 65+ Rural Health study, in the field using head light, mirror, and periodontal problems. Attachment loss, defined as recession plus probing depth, was determined at for sites per tooth. Ninety-one percent of the subjects had at least one site with 4+mm of attachment loss, 45% had one or more sites with attachment loss of 6+mm, and 15% had 8+mm of attachment loss. Moderate periodontal disease is prevalent among very old dentate adults while advanced periodontal disease is much less prevalent, suggesting that most periodontal treatment needed by this age group can be provided by general dentists and dental hygienists rather than periodontitis [18].

Assessment of dental caries and periodontal disease status among elderly residing in old age. This day was carried out on 599 elderly people in Madhya Pradesh, central India. The clinical findings were recorded using modified WHO oral health assessment form. In the dentate population, 0% had healthy periodontal tissue, 0.26% had bleeding, and 24.5% had calculus, 52.1% had shallow pockets and 23.1% had deep pockets as their highest score and this difference was statically significant. In the current study, 37.9% inmates were completely edentulous. This study also showed that as age advanced the prevalence increased from 23.1% to 55.4%. The difference was statically significant. The oral health status of elderly people was found to be poor. Hence, it is concluded from this study that tooth loss is higher among the geriatric group residing in old age homes and is associated with many demographic and behavioral risk indicators [14]. Prevalence of dental caries and periodontal diseases, and their association with socio-demographic risk factors among older persons in Delhi, India: a community-based study and to study their asso-

ciation with selected socio-behavioral risk factors. A total of 448 participants were examined and included in the study of the dentate, 47.1% have active dental caries. The prevalence of gingival bleeding, periodontal pockets and loss of attachment was 96.6%, 89.1%, and 80.3% respectively. Age, frequency of teeth cleaning, and method used for teeth cleaning were statistically associated with DMFT score. The prevalence of dental caries and periodontal disease was high in the study population, warrants intervention [19]. One out of every two American adults aged 30 and over has periodontal disease, according to recent finding from the CDC. A study titled prevalence of periodontitis and its determinants in adults in the United States; 2009 and 2010 estimate that 47.2%, or 64.7 million American adults, have mild, moderate and sever periodontitis, the more advanced form of periodontal disease. In adults 65 and older, prevalence rates increase to 70.1%. According to the American Academy of periodontology (AAP) Research has also shown that periodontal disease is associated with other chronic inflammatory diseases, such as diabetes and cardiovascular disease. The American Academy of periodontology has worked closely with CDC since 2003 on periodontal surveillance. The findings also indicate disparities among certain segments of the U.S. population. Periodontal disease is higher in men than women (56.4% vs. 38.4%) and is highest in Mexican- Americans 66.7% compared to other races [15]. Other segments with high prevalence rate include current smokers (64.2 %); those living below the federal poverty level 65.4%; and those with less than a high school education 66.9 percent [20].

The other study was to highlight oral diseases found in an elderly Nigerian population. The records of 494 elderly patients were retrospectively reviewed. The age ranged from 55 years to 120 years with almost half (44%) in the 60 and 69-year group. Pain was the commonest presenting complaint (66.2%). Attrition was present in only 8% and was not related to age or sex. Coronal and root surface caries was present in 12.8% and 0.8% respectively and caries was significantly common in females and those who were presenting for the first time. Chronic periodontitis was the most prevalent oral disease (73.9%) and appeared to worsen with age and decline with the state of the oral hygiene [20].

Majority of the elderly (96%) had more than 20 teeth while only 16(3.2%) were edentulous. Squamous cell carcinoma was found in 11 patients and it affected significantly more males than females. Significant differences exist in the pattern of oral diseases in Nigeria when compared with the findings in other countries. Such differences might be due to socio- cultural, genetic and environmental factors [20].

The last study revised was done on Ethiopian immigrant's periodontal treatment needs and oral hygiene. Periodontal disease studies in developing countries over the past four decades indicate periodontitis to be a major problem, even in populations with relatively low caries rates. Ethiopian Jewish population recently immigrated into Israel. Over 800 subjects from the total of 15,000 Ethiopians who immigrated were examined utilizing the PTNS Index and the OHI-S Index. Results indicate that that all the examined population needed oral hygiene instruction. Almost 80 % need scaling and approximately 20% need more complex treatment such as surgery. Significant differences were found according to age. This could be attributed to the high OHI-S scores, ranging from 2.53 at age 0-12 to 4.82 at the 51+ age group, with a mean debris Index of 2.12 for the total population. It is suggested that this population should be exposed immediately to preventive and treatment programs to improve oral hygiene and decrease need for future, costly periodontal treatment [21].

Method and Materials

Study area and period

The study was conducted in Macedonia Humanitarian Association (MHA) which is in Yeka Sub-city, Woreda 9, house number 769 around Kotebe Metal Tools, Addis Ababa, Ethiopia. It is non-governmental organization and support elderly people and people with disabilities and it is founded on 07 January 2010. The average of study population living the institution was 1200. The study period was taken around three months from July to November 2018.

Study design

An institutional based cross-sectional descriptive study design was used to assess the prevalence and determinants factor of periodontal disease.

Source of population

Peoples which were living in Macedonia Humanitarian Association. This seeks treatment and consultation for their dental problems during data collection time that was in September 2018.

Study population

Peoples which were geriatrics or age greater than or equal to 65 year and that live in Macedonia Humanitarian Association.

Sampling criteria

1. Inclusive criteria

a. Subjects giving voluntary informed consent geriatrics

b.   Peoples who was geriatric (elderly) of 65 years of age and above

2. Exclusion criteria

a. People which were not geriatric (below 65 years of age)

b. Those who was not voluntary.

c. Peoples who was edentulous

Sampling technique

Selection of the study subjects was carried out through no probability purposive sampling since the study population size living in the Macedonia humanitarian institution was 192 so to collect the data timely am enforced to use this method approach.

the study community selection criteria were age. that was anyone who are greater than or equal to 65 consider as part of the community were included in the study.

The total eligible age group of individuals this study was 192.

Study variables

1. Dependent variables: prevalence and determinants of periodontal disease on geriatrics.

2. Independent variables: age, sex, marital status, educational status, habits (smoking, alcohol...), brushing teeth, gum bleeding and recession, mobile teeth and bad breath.

Data collection instruments

The data collection instruments used for study was questionnaires which was adopted from different similar objective studies and examination instruments.

Data collection procedures

Data was collected using interview method and clinical examination. The clinical examination was done to determine oral hygiene, bleeding on probing, calculus deposition, probing depth, furcation involvement and tooth mobility as well as lost teeth.

Data collection tools

The questionnaire was consisting of closed ended questions and standard periodontal probe used to examining the study participants.

Data quality assurance and management

The principal investigator had supervised to ensure quality of data by checking filling questionnaire and examination formats for their completeness and consistency. The questionnaires were filled by data collector. The data collection tool was pretested prior to actual field study.

Data entry and analysis

We used to enter and analyzed the data by SPSS version 20 software, and it was described in the form of tables and frequencies.

Ethical consideration

Permission was obtained from the institution (Atlas College of health science) ethical research committee and from manager of Macedonia Humanitarian Association. Informed consent was obtained from geriatric peoples which were voluntaries to participate in the study. those who had actual periodontal problem was treated on the spot and referred to the nearest hospital for further support.

Operational definition

1. Periodontal Disease: is a chronic infectious disease of the supporting tissues are around the teeth leading to its progressive destruction

2. Prevalence: the percentage of a population that is affected with a disease at a given time.

3. Oral hygiene: is the practice of keeping the mouth clean and healthy by brushing and flossing to prevent tooth decay and gum disease.

4. Calculus: a calcified adherent mass on the surface of a tooth.

5. Geriatrics: persons as elderly when they are 65 years of age or above according to WHO definition.

Results

Socio-demographic data result

Out of 192 study participant the response rate was 94.5% (182). Out of 182 participants 144(79.1%) were males and 38(20.9%) were females. The majority respondents 135(74.2%) were between the age of 65 - 70 years and the remaining 47(25.8%) were the age of above70 years. Old Peoples of the studied were their residency, 160(87.9%) urban and 22(12.1%) rural. Concerning were their marital status, 19(10.4%) single, 54(29.7%) married, 53(29.1%) divorce and 56(30.8%) widowed of old peoples were their educational background, 93(51.1%) literate, 58(31.9%) primary school and 31(17.0%) secondary school. About 112(61.5%) of the study subject were Orthodox religion, 11(6.0%) Protestant, 16(8.8%) Catholic and 43(23.6%) others. All 182(100%) of old peoples were no monthly income and occupation (Table 1).

Table 1: Socio-demographic characteristics geriatrics people of 65 years of age and above living in Macedonia Humanitarian Association, Addis Ababa, Ethiopia, 2018.

Demographic Variable		Frequency(f)	Percentage (%)	Cumulative Percent
Sex	Female	38	20.9	20.9
	Male	144	79.1	100
	Total	182	100	
Age	65 - 70 years	135	74.2	74.2
	above 70 years	47	25.8	100
	Total	182	100	

Previous residence	Urban	160	87.9	87.9
	Rural	22	12.1	100
	Total	182	100	
Marital status	Single	19	10.4	10.4
	Married	54	29.7	40.1
	Divorced	53	29.1	69.2
	Widowed	56	30.8	100
Educational background	Literate	93	51.1	51.1
	Primary School	58	31.9	83
	Secondary School	31	17	100
	Total	182	100	
Religion	Orthodox	112	61.5	61.5
	Protestant	11	6	67.6
	Catholic	16	8.8	76.4
	Others	43	23.6	100

Awareness about oral hygiene practices and periodontal status

Oral hygiene practices: The respondents were asked of their oral hygiene practices, 88(48.4%) brushed their teeth while 94(51.6%) did not. Of those who brushed their teeth, 25(13.7%) only in water, 5(2.7%) in tooth paste, 26(14.3%) in both tooth brush and tooth paste, 8(4.4%) in all methods and 24(13.3%) in others (piece of stick), 37(20.3%) brushed once daily, 8(4.4%) brushed twice daily,24(13.2%) brushed once in a week and 19 (10.4 %) brushed twice a week.

Related with how to keep oral health, oral health condition and source of information: From the respondents, majority 167 (91.8%) had information about how to keep oral health, 14 (7.7%) did not, 102 (56%) said it was good and 79 (43.4%) did not. Regarding source of information, 2 (1.1%) had got from health center, 5 (2.7%) from societal meeting, 48 (26.4%) from television, radio or internet, 79(43.4%) from friends and the remaining 33 (18.1%) were from another source.

Related with important of dentist advice, visit dental clinic and cause of visited: Majority 167 (91.8%) said agreed with important of dentist advice, 15 (8.2%) said did not know. Of those who agreed important of dentist advice, 77 (42.3%) said visited clinic, majority 105 (57.7%) did not visited. Regarding cause of visited clinic, 52 (28.6%) said because of tooth ache, 3 (1.6%) were swollen gum and 22 (12.1%) were decay teeth (Table 2).

Table 2: Awareness about oral hygiene practices geriatrics people of 65 years of age and above living in Macedonia Humanitarian Association, Addis Ababa, Ethiopia, 2018.

Awareness About Oral Hygiene Practices		Frequency(f)	Percentage (%)	Cumulative Percent
Do you clean your teeth with toothbrush and toothpaste?	Yes	88	48.4	48.4
	No	94	51.6	100
	Total	182	100	
Please tell me how you could clean your teeth	I didn't clean	94	51.6	51.6
	only in water	25	13.7	65.4
	in toothpaste	5	2.7	68.1
	in both toothbrush and toothpaste	26	14.3	82.4
	In all the above methods	8	4.4	86.8
	Other specify	24	13.2	100
	Total	182	100	
How often do you brush your teeth?	I didn't clean	94	51.6	51.6
	Once daily	37	20.3	72
	Twice daily	8	4.4	76.4
	Once in week	24	13.2	89.6
	Twice a week	19	10.4	100
	Total	182	100	

Dou you have any information on how to keep your oral health?	Yes	74	40.7	40.7
	No	14	7.7	48.4
	I have no idea	1	0.5	48.9
	I have some information	93	51.1	100
	Total	182	100	
If your answer is yes, where do you get the information?	I didn't get any information	15	8.2	8.2
	From health center	2	1.1	9.3
	From societal meeting	5	2.7	12.1
	From television, radio or internet	48	26.4	38.5
	From friends	79	43.4	81.9
	From another source	33	18.1	100
	Total	182	100	
Do you think your oral health condition is good?	Yes	102	56	56
	No	79	43.4	99.5
	I don' know	1	0.5	100
	Total	182	100	
Do you think it's important to seek a dentist's advice when you have dental disease?	Yes	167	91.8	91.8
	I don't know	15	8.2	100
	Total	182	100	
Have you ever visited a dental clinic?	Yes	77	42.3	42.3
	No	105	57.7	100
	Total	182	100	
Why do you visit a dental clinic or dentist?	Valid	105	57.7	57.7
	Tooth ache	52	28.6	86.3
	Swollen gum	3	1.6	87.9
	decay teeth	22	12.1	100
	Total	182	100	

Awareness about periodontal disease and observed status

Study participant experience of gingival (gum) inflammation: The respondents were asked of their experience of gingival inflammation, Majority 118 (64.8%) had experienced gingival inflammation and 64 (35.2%) did not.

Patients experience of gingival (gum) bleeding: The respondents were asked of their experience of gum disease, 85 (46.7%) had experienced gum bleeding, 97 (53.3%) did not. Of those who gum bleeding, 71 (39.0%) had spontaneous bleeding, 11(6.0%) bleeding up on brushing and the rest 3 (1.6%) had mild bleeding.

Observed problem of periodontal diseases: Majority 118(64.8%) had periodontal problem, 33 (18.1%) did not and 31 (17%) they did have any idea about periodontal problem.

The Causes of periodontal diseases: 34(18.7%) they were known and 148 (81.3%) did not know the cause. Of those who know the cause of periodontal disease, 3 (1.6%) said it was caused by Bacteria, 11 (6%) due to intake of more sugary foods, 7 (3.8%) due to poor cleaning of teeth.

Methods of prevention of periodontal disease: When asked what could help prevent gum disease, 66 (36.3 %) had an idea about prevention of periodontal disease, 116 (63.7%) did not, Of those who know prevention of periodontal disease, 22 (12.1%) said they would visit a dentist regularly, 36 (19.8%) brushing teeth regularly, 3 (1.6%) said they would intake of low sugary foods.

Any mobility and degree level of teeth mobility of study community clinical observed results: Majority 86(47.3 %) had experienced mobile teeth, and 42 (23.1 %) did not and 54 (29.7%) was not sure. Of those 13(7.1%) had grade I degree of mobility, 29 (15.9%) had grade II degree of mobility of teeth.

Any attachment loss/problem/ of number of teeth of study community clinical observed results: 35(19.2%) had one tooth attachment loss, majority 93(51.1%) had two teeth, 16(8.8%) had

three teeth and 5(2.7%) had more than three teeth attachment loss.

Related with any calculus and dental caries rate of study community clinical observed results: 87(47.8%) had calculus,

95(52.2%) they did not have calculus. Regarding dental caries rate, 62(34.1%) had mild caries rate, 77(42.3%) moderate, 11(6%) sever and 32(17.6%) no dental caries (Table 3).

Table 3: Awareness about periodontal geriatrics people of 65 years of age and above living in Macedonia Humanitarian Association, Addis Ababa, Ethiopia, 2018,

Awareness about Periodontal Diseases		Frequency(f)	Percentage (%)	Cumulative Percent
Do you have any gingival inflammation?	Yes	118	64.8	64.8
	No	64	35.2	100
	Total	182	100	
Do you have gingival bleeding?	Yes	85	46.7	46.7
	No	97	53.3	100
	Total	182	100	
What kind of bleeding it is?	I don't not have	97	53.3	53.3
	Spontaneous bleeding	71	39	92.3
	bleeding upon brushing	11	6	98.4
	mild bleeding	3	1.6	100
	Total	182	100	
Do you have periodontal problem?	Yes	118	64.8	64.8
	No	33	18.1	83
	I don't know	31	17	100
	Total	182	100	
Do you know the cause of periodontal disease?	Yes	34	18.7	18.7
	No	148	81.3	100
	Total	182	100	
If you say yes, please could you tell me the main cause of periodontal disease?	I don't know	161	88.5	88.5
	Bacteria	3	1.6	90.1
	More sugar foods	11	6	96.2
	Poor cleaning of teeth	7	3.8	100
	Total	182	100	
Do you have any idea how to prevent periodontal disease?	Yes	66	36.3	36.3
	No	91	50	86.3
	I don't know	25	13.7	100
	Total	182	100	
	I don't know	121	66.5	66.5
	Visiting the dentist regularly	22	12.1	78.6
	Brushing teeth regularly	36	19.8	98.4
	Intake of low sugary foods	3	1.6	100
	Total	182	100	
Do you have any mobility on your teeth?	Yes	86	47.3	76.9
	No	42	23.1	23.1
	I am not sure	54	29.7	100
	Total	182	100	
What is level degree of mobility? Observation	don't have	140	76.9	76.9
	Grade I	13	7.1	84.1
	Grade II	29	15.9	100
	Total	182	100	

How many teeth have any attachment loss/problem? Observation result	Has no problem	33	18.1	18.1
	One	35	19.2	37.4
	Two	93	51.1	88.5
	Three	16	8.8	97.3
	More than three	5	2.7	100
What is the dental caries rate? Observation results	Mild	62	34.1	34.1
	Moderate	77	42.3	76.4
	Sever	11	6	82.4
	have no caries	32	17.6	100
	Total	182	100	
Do you have any calculus? Observation result	Yes	87	47.8	47.8
	NO	95	52.2	100
	Total	182	100	

Determinants factor associated with periodontal disease

Related with any oral habits: From those respondents, 30(16.5%) had smoked cigarettes, 22(12.1%) chewing, 19(10.4%) alcohol and majority 111(61%) did not have oral habit.

Different risk factors of periodontal disease or oral health problems: From those respondents, 1(0.5%) were said eating too much sugary foods, 59(32.4%) said lack of brushing, 63(34.6%) add sugar to bottle feeding, 32(17.6%) said used or shared of the same utensil during feeding with others, 20(11%) not gargle the mouth after meal and the remaining 7(3.8%) were said tooth decay caused by bacteria (Table 4).

Table 4: Different risk factors of periodontal disease or oral health problems of geriatrics people of 65 years of age and above living in Macedonia Humanitarian Association, Addis Ababa, Ethiopia, 2018.

Risk Factors of Periodontal Disease		Frequency (f)	Percentage (%)	Cumulative Percent
Do you have any substance abuse use habits	Smoking	30	16.5	16.5
	Chewing	22	12.1	28.6
	Alcohol	19	10.4	39
	No	111	61	100
What do you think about the risk factors of periodontal disease or oral health problem?	Eating too much sugary foods	1	0.5	0.5
	lack of brushing	59	32.4	33
	Add sugar to bottle feeding	63	34.6	67.6
	Use of the same utensil during feeding with you or another child	32	17.6	85.2
	Not gargle the mouth after meal	20	11	96.2
	Tooth decay is caused by bacteria	7	3.8	100
	Total	182	100	

Discussion

The main objective of the study is the prevalence and determinants of periodontal diseases among old peoples (Geriatrics) lived in Macedonia Humanitarian Association Addis Ababa, Ethiopia.

In the current study there are 144(79.1%) were males and 38(20.9%) were females which shows the prevalence regarding sex is more on males than females. There was a study from 2009-2010 in United States of America showed which shows periodontal disease is higher in males than females (56.4% vs.38.4%) [22].

The majority respondents 135(74.2%) were between the age of 65 - 70 years and the remaining 47(25.8%) were the age of above70 years which shows high prevalence in the elder age of interval 65 to 70. When my study is comparable to the study conducted in titled prevalence of periodontitis and its determinants in adults in the United States; 2009 and 2010 estimate that 47.2 %, or 64.7 million American adults, have mild, moderate and sever periodontitis, the more advanced form of periodontal disease. In adults 65 and older, prevalence rates increase to 70.1% [22]. The other study was to highlight oral diseases found in an

elderly Nigerian population. The records of 494 elderly patients were retrospectively reviewed. The age ranged from 55 years to 120 years with almost half (44 %) in the 60 and 69-year group [20]. According to WHO report Of April 2012, the prevalence of periodontal disease and dental caries was 30-50% in children and nearly 60% in adults, about 68% of those aged 65-70years had lost their natural teeth [23].

Only 3(1.6%) of the respondents knew that periodontal diseases are caused by bacterial deposits on teeth. Others gave varied reasons as intake of more sugary foods 11(6.0%) and poor cleaning of teeth 7(3.8%). A study conducted in Finland determine to awareness of periodontal diseases found out that slightly more than half (50%) had adequate knowledge of what periodontal disease was [16]. Intake of more sugary foods and poor cleaning teeth were thought to be the primary cause of periodontal disease amongst many respondents 11 (6.0%) and 7 (3.8%) respectively with a majority having experience symptoms of periodontal disease.

The results are like those study conducted in Nigeria in 2005 where indicate that most common symptoms of periodontal disease were gum bleeding or brushing with over 40% of patients complaining [20].

Majority of respondents said that methods of preventing gum diseases was to brushing teeth regularly 36(19.8%), while some said they would visit a dentist regularly 22 (12.1%), intake of low sugary foods 3(1.6%). More than half of the respondents 167 (91.8%) said it was important to seek dentists advises when they have periodontal diseases. On oral hygiene practices slightly less than half of respondents 88 (48.4%) they would brush their teeth, with 37 (20.3%) brushing once daily, 8 (4.4%) twice daily, 24(13.2%) once a week, 19(10.4%) twice a week.

This can be attributed to lack of adequate knowledge and awareness of proper hygiene practices and economic or income constraints amongst the elder peoples. From the respondent those who smoked 30 (16.5%), 22(12.1%) chewing and 19(10.4%) used alcohol. Knew the effects of smoking, chewing and drink alcohol on oral health. In a study by Johnson NW, Bain CA smoking has clearly been implicated contributing to periodontal breakdown and in impeding healing of periodontal tissues [24]. Study done in Nigerian showed that most people visited a dentist for relief of toothache or extractions although a high percentage claimed not to have gum disease. Various stages of periodontal disease were observed in the gum of patients [20]. In my study A high number of participants about 105(57.7%) didn't consult a dentist regularly as compared to those who visited a dentist regularly, but visits due to other reasons tooth ache, swollen gum, decay teeth and other causes.

Conclusion

a.   Based on the results obtained from this study, the geriatric peoples have poor oral hygiene.

b.   Most of the study participant had gingival inflammation, teeth mobility, gum recession, calculus and periodontal problem.

c.   Majority of old peoples didn't know what periodontal diseases even though they have

experiences sign and symptoms.

d.   Periodontal disease mostly affects the relatively old age group between 65-70 years.

e.   Poor oral hygiene, oral habits (chewing, alcohol…), bacteria and aging relationship for prevalence of periodontal disease among geriatrics peoples.

Recommendations

a.   Oral health providers should lay down strategies to create periodontal awareness to public

b.   Oral health care provider should educate the community on preventive measures of periodontal diseases and importance of having regular dental checkups.

c.   Provision of health promotion and information for proper attitude and behavior modification towards oral hygiene practices and periodontal health. More attention must be given for geriatric peoples by the dentist and dental clinics.

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