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Research Article

Restorative Treatment Needs of Geriatric Patients Attending a Tertiary Dental Facility in Lagos, Nigeria

Awotile Adenike O[1], Enone Lillian L[1], Omosebi Temitope O[1], Adenuga-Taiwo Olugbenga A.[1] and Ogbada Owai[2]

[1]1Department of Restorative Dentistry, Faculty of Dentistry, Lagos State University College of Medicine, Ikeja, Lagos PMB 21266, Nigeria. [2]Department of Restorative Dentistry. Lagos State University Teaching Hospital, Ikeja Lagos, Nigeria.

[*]***Author for Correspondence:***
Awotile A. O.
Email Address: nikawo2008@yahoo.com

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ABSTRACT

Objectives: Objectives: To determine the pattern of presentation of oral conditions and treatment needs among geriatric patients attending restorative clinic in a tertiary health facility in Lagos state, South-Western Nigeria.

Methodology: A retrospective review of hospital records of geriatric patients, 65 years old and above who, had clinical oral evaluation and treatment done at the Restorative clinic of Lagos State University Teaching Hospital, Lagos, Nigeria from January, 2016 to December, 2019 was done. Information on age, gender, occupation, presentations and restorative treatment needs was obtained. Data were analysed using computer software programme, Statistical (SPSS) Version 23. Associations between variables were assessed using chi-square and fisher exact. P-value <0.05 assumed to be significant at 95% CI.

Results: A total of 501 patients' records of 65 years and above were retrieved. Four hundred and seventy nine records had complete data, 192 were males and 287(59.9%) were females. The age range of the patients was 65 to 92 years. The highest presentation (51.8%) was found in the 65-69 years age group. Partial edentulism was the most common presentation 149(31.1%), followed by tooth wear 92(19.2%). The least common presentations were pulp necrosis 3(0.6) and bruxism 4(0.8). Removable partial dentures were the most common treatment needs 151(31.5%), followed by Glass ionomer cement restorations 100(20.9%) among the geriatric patients.

Conclusion: Most of geriatric patients presented with partial edentulism and their treatment needs were mainly for removable partial dentures. Oral hygiene awareness is essential for geriatrics to prevent tooth loss from tooth decay and periodontitis.

INTRODUCTION

Good oral health is one of the major contributors to older adults' quality of life and it is essential to good general health as the mouth is seen as the gateway to the rest of the body. In most developed countries, the accepted chronological age of the elderly is 65 years.[1] At the moment, there is no United Nations standard numerical criterion, but the UN agreed cut-off is 60+ years for the older population.[1] Research indicates that older adults with 20 or more teeth have a significantly lower mortality rate than those with 19 and fewer teeth.[2] Early presentation, diagnosis, intervention and preventive treatment can prevent or decrease the progress of most oral diseases.[3] which when left untreated, can cause pain, negative health consequences and affect quality of life.[3] An intact dentition is associated with improved dietary intake and reduced risk of malnutrition.[4] It has been reported that an elderly individual who has good oral health, participates more in social activities and is physically active, is said to be aging successfully.[5]

Globally, poor oral health has been found to occur more in older people and it manifests as high levels of tooth loss, increased dental caries experience, periodontal diseases, xerostomia and oral pre-cancer/cancer.[6] Age related oral changes are seen in both the oral soft and hard tissues, and the effect of these changes on the faces and mouths of geriatric patients are relevant to the restorative dentist whose goal is to restore good appearance, improve oral function and enhance the quality of life of geriatric patients.

Direct restorative materials are preferred in geriatric patients in treating dental caries as these restorations can be readily repaired or replaced.[7] Glass Ionomer Cement (GIC) is the choice of restorative material in root caries due to its adhesive property allowing minimum preparation, fluoride release, biocompatibility and less technique sensitivity compared to composites.[8] The aesthetic treatment for the elderly could range from simple recontouring procedures to bleaching, laminates and crown.[9] Any major aesthetic rehabilitation should be done only after proper occlusal assessment and rehabilitation to achieve predictable results.

There are challenges encountered during root canal

treatment in the elderly from diagnosis to various stages in the therapy.[9] Some elderly patients might be unable to sit on the dental chair and tolerate lengthy course of treatment e.g. patients with severe Parkinson's disease, tremors etc. Access and canal negotiation probably present the greatest challenge in geriatric endodontics.[10] Successful endodontics can be achieved for the elderly, if proper attention is given to the diagnosis, good quality radiographs and adapting techniques that overcome the challenges posed by calcification of the root canal system.[9]

Prosthodontic treatment helps to maintain the oral functions. It involves the use of overdentures, removable partial dentures and removable complete dentures. Implant retained complete dentures can also be used to overcome several problems associated with conventional dentures. [11] Improved quality of life among geriatric patients requires tooth retention and consequently the need for restorative care. Maintaining an intact dentition that is free of disease amidst several predisposing factors associated with old age is a multi-faceted challenge, which should be addressed by the dental and medical professionals to provide a holistic safe, effective and appropriate care. [9]

A previous study [3] in a Nigerian tertiary health facility emphasized on generalized oral health conditions in the elderly, while some other studies [12-16] focused on prosthetic needs of this group of people in Nigeria. The present study focused on their restorative treatment needs (conservation and prosthetics). Hence the aim of this study was to determine the pattern of presentation of oral conditions and treatment needs among geriatric patients attending the restorative clinic at a tertiary health facility in Lagos state, South-West, Nigeria.

MATERIALS AND METHODS

A retrospective review of hospital records of elderly patients 65 years and above, who presented, and had clinical oral evaluations and treatment at the restorative outpatient clinic at the Lagos State University Teaching Hospital, Lagos State, Nigeria from January, 2016 to December, 2019 was done using a convenience sampling method. Lagos State University Teaching Hospital is a tertiary health facility serving many local governments areas in Lagos State as well as other neighbouring states. Demographic and clinical data, such as age, sex, occupation, presentations and treatment needs were retrieved from the patients' records. Medical records with incomplete data and patients less than 65 years old were excluded. Ethical clearance for this study was obtained from Ethical Committee of Lagos State University Teaching Hospital, (HREC, LASUTH) Lagos, prior to commencement of the study. Data were analysed using a computer software programme, Statistical (SPSS) Version 23. The age, gender, presentations and treatment needs were assessed among the participants. Categorical data were presented using sequencing and percentage. Associations between variables were assessed using chi-square and fisher exact. P-value <0.05 was assumed to be significant at 95% CI.

RESULTS

A total of 501 patients' records were retrieved. There were 479 records with complete data of which 192(40.1%) were males, 287(59.9%) were females. The age range of the patients was 65 to 92 years. The mean age of male was 71.43±5.9 and of female was 70.37±5.2. The highest presentation (51.8%) was found in the 65-69 years age group, this was followed by the 70-74 years age group (Table 1). Partial edentulism was the most common presentation 149(31.1%), followed by tooth wear 92(19.2%). The least common presentations were pulp necrosis 3(0.6) and bruxism 4(0.8) (Table 2). Removable partial dentures was the most common treatment need 151(31.5%), followed by Glass ionomer cement restorations 100(20.9%) among the geriatric patients attending restorative dental clinic. The least common treatment needs were apicectomy 2(0.4%) and desensitization 5(1.0%) (Table 3).

Table 1: Age distribution of subjects

	Male (n=192)	Female (n=287)	Total
Age group (Years)			
65-69	87(45.3)	161(56.1)	248(51.8)
70-74	48(25.0)	68(23.7)	116(24.2)
75-79	43(22.4)	44(15.3)	87(18.2)
≥80	14(7.3)	14(4.9)	28(5.8)
Mean±SD	71.43±5.9	70.37±5.2	

Table 2: Presentations among elderly patients in restorative clinic

	Male (n=192)	Female (n=287)	Total
Partial edentulism	65(33.9)	84(29.3)	149(31.1)
Tooth wear	47(24.5)	45(15.7)	92(19.2)
Fracture tooth	21(10.9)	31(10.8)	52(10.9)
Dental caries	9(24.5)	29(10.1)	38(7.9)
Failed restoration	12(6.3)	25(8.7)	37(7.7)
Apical periodontitis	10(5.2)	22(7.7)	32(6.7)
Irreversible pulpitis	8(4.2)	13(4.5)	21(4.4)
Complete edentulism	5(2.6)	10(3.5)	15(3.1)
Reversible pulpitis	6(3.1)	7(2.4)	13(2.7)
Faulty dentures	1(0.5)	5(1.7)	6(1.3)
Dentine hypersensitivity	3(1.6)	5(1.7)	8(1.7)
Periapical abscess	0(0.0)	4(1.4)	4(0.8)
Bruxism	1(0.5)	3(1.0)	4(0.8)
Pulp necrosis	1(0.5)	2(0.7)	3(0.6)
Others	3(1.6)	2(0.7)	5(1.0)

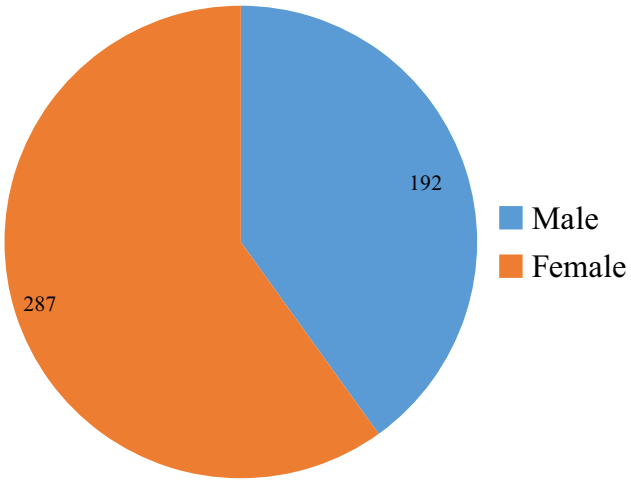

Figure 1: Gender distribution of subjects

Table 3: Treatment needs among elderly patients in restorative clinic

	Male (n=192)	Female (n=287)	Total	p-value
Removable partial dentures	64(33.3)	87(30.3)	151(31.5)	0.486
Glass ionomer cements	43(22.4)	57(19.9)	100(20.9)	0.503
Composite	30(15.6)	50(17.4)	80(16.7)	0.605
Root canal therapy	27(14.1)	48(16.7)	75(15.7)	0.432
Amalgam	7(3.6)	19(6.6)	26(5.4)	0.159
Crown	7(3.6)	15(5.2)	22(4.6)	0.418
Occlusal splint	7(3.6)	7(2.4)	14(2.9)	0.442
Removable complete dentures	5(2.6)	10(3.5)	15(3.1)	0.588
Overdentures	3(1.6)	6(2.1)	9(1.9)	0.677
Desensitization	4(2.1)	1(0.3)	5(1.0)	0.067
Apicectomy	1(0.5)	1(0.3)	2(0.4)	0.774

DISCUSSION

Improved quality of life at old age will demand tooth retention and consequently the need for restorative care. [9] In this study, 479 geriatric patients' seeking for restorative care in Lagos State University Teaching Hospital, Ikeja, Lagos State over a period of 4 years had their dental record retrieved. In this study, 40.1% were males and 59.9% were females. Similar studies [3,17,18] show higher percentages of females than males. Despite the higher percentages of females seeking various restorative dental treatments, there was no statistically significant difference between males and females for treatment needs (p-value>0.05).

According to World Health Organization (WHO), 60 or 65 years is often used to define the elderly (geriatric) at which a person becomes eligible for statutory and occupational retirement pensions. [1] The age range of the patients in this study was 65 to 92 years and this made them eligible to be called the elderly. The mean age of male (71.43±5.9) and of female (70.37±5.2) observed in this study was close to the mean age reported in a previous Nigerian study.[18] The highest presentation (51.8%) was among the ages of 65-69 years, followed by (24.2%) in 70-74 years age group. With advancing age, the patients were less likely to present and seek restorative treatment which might be due to being indifferent about their oral health, less ambulatory and besides it has been argued that they often regard their oral complaints as minor compared to the chronic systemic conditions which they often suffer from[19] Whereas, the younger geriatrics (65 -74 years),[20] in an effort to appear younger, were willing to spend time and money to maintain a healthy natural dentition by seeking dental treatment often.[21]

Geriatrics are more susceptible to tooth loss since the likelihood of edentulism increases with age,[18,22] most commonly due to the cumulative effects of caries, periodontal disease, trauma and dental treatment.[23] In addition, multiple comorbidities and the subsequent intake of numerous drugs associated with old age may cause xerostomia and further accelerating tooth loss.[24] Partial edentulism (31.1%) was the highest presentation in this study and was higher in females than in males, this corroborates a study done by Enabulele and Omo.[18] However, some other studies[16,22,25] reported more of males than females, which was adduced to the fact that males were more prone to tooth trauma especially, in their earlier years. Another study [16] stated that males defer their responses to dental problems compared to females, thus, resulting in higher tooth loss in males.

Prevalence of tooth wear is observed to be increasing in the elderly population [26,27] and consequently, tooth wear may become a dental problem of great importance among geriatrics.[28] Tooth wear was second most common presentation (19.2%) in this study. It was found more in males than females. This was in line with several other previous studies,[26,27,29,30] but contrary to a study carried out in Malaysia where females were more predominant.[31] However, population characteristics such as gender, oral habits, educational status, occupation and cultures may play a role in tooth wear lesions.[26,27,30]

In this study, removable partial dentures was the most common treatment need (151, 31.5%) at the restorative clinic. In a similar study,[15,16,32] carried out at the Lagos University Teaching Hospital (LUTH), in the prosthetic out-patient clinic, replacement of lost teeth was documented to be the most common reason for attendance. The gender distribution of the patients in this study is in agreement with the report of Arigbede and Taiwo [14] who found a higher female distribution. This could be because females were more particular about their appearances, therefore presenting more for treatment. However, this is contrary to some previous studies among Nigerians, which reported that more males demanded for removable dentures than females, [12, 13, 15, 25] because males are more prone to tooth loss than females due to poor attitude toward oral health.[13]

The adverse effect of tooth loss without replacement includes, drifting and tilting of adjacent teeth, rotation of teeth, over eruption, loss of contact area with formation of food traps. Others include faulty speech, changes in appearance and adverse psychological changes.[33] These adverse effects could account for the reasons why more geriatrics demand for removable partial dentures.

Glass ionomer cement restoration (100, 20.9%) was the second most common treatment need among the geriatric patients attending Restorative clinic. Glass ionomer cement (GIC) is the optimal choice of treatment in the restoration of tooth wear and carious lesions in elderly patients in order to protect them from secondary caries.[34] In this study, aside partial edentulism, tooth wear, fractures and carious lesions were common presentations observed and these might account for the frequent use of GIC. Glass ionomer cement has adhesive properties thus minimum preparation is required. In addition good fluoride release, reasonable

esthetics, biocompatibility and less technique sensitive as compared to composite.[8] Composite restoration 80(16.7%) was the next treatment need, followed by root canal therapy 75(15.7%).

CONCLUSIONS

Most of the geriatric patients presented with partial edentulism and their treatment needs were mainly removable partial denture in this study. Adequate government funding/health insurance for the various treatment needs should be made accessible to the elderly. Oral hygiene is highly essential for geriatrics to prevent tooth loss from tooth decay and periodontitis. The use of topical fluoride (such as daily mouth rinses, fluoride toothpaste, regular fluoride varnish application) and dietary counselling are also recommended. [35]

Conflicts of Interest

The authors explicitly state that there are no conflicts of interest related to this article.

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