

Multidisciplinary Nature of Management of Elderly Patients in Dental Practice

***Joan E. ENABULELE, **Gloria O. AGBOGHOROMA, *Julie O. OMO**

**Department of Restorative Dentistry,
School of Dentistry, University of Benin,
Benin City, Nigeria*

***Restorative unit, Dental outpatient
Department National Hospital, Abuja,
Nigeria*

ABSTRACT

Objective: To assess the specialties involved in oral health care of the elderly

Methods: This was a retrospective descriptive cross-sectional study conducted using dental records of patients aged 65 years or more who had visited the dental clinic of 2 tertiary hospitals (National Hospital Abuja and University of Benin Teaching Hospital, Benin City) over a 6-month period from June 1, 2018 to December 31, 2018. The patients were classified by age as follows; 65-74 years youngest-old, 75-84 years middle-old and those aged 85 and above oldest old. The data of interest collated from the retrieved records were age, gender, diagnosis made and specialties involved in management of the oral health conditions. All data was screened for completeness and analysed using IBM SPSS statistics for windows version 26.0 (IBM Corp. Armonk, N.Y., USA).

Results: A total of 177 records of elderly patients were utilized for this study with 67.2% from UBTH and the remaining 32.8% from National Hospital Abuja. The youngest-old (65-74 years) made up 73.4% of the cases and females accounted for 60.5% of cases. Multiple diagnoses were made in 58.2% of cases with multiple specialties involved in treatment of 45.5% of cases. Five specialties (prosthodontics, conservative dentistry, periodontology, oral and maxillofacial surgery and oral medicine) were involved in management of these cases. More than half (55.4%) received treatment from periodontology and the least represented specialty was oral medicine (3.4%). A higher proportion (69.9%) of cases with multiple diagnosis received treatment from periodontology specialty and this was statistically significant ($P < 0.0001$).

Conclusion: Elderly patients irrespective of age have similar oral problems and required similar specialist care. Multiple specialties are involved in the oral health care management of elderly patients with periodontology specialty followed by oral and maxillofacial specialty rendering care in most cases. Oral care of the elderly can be centred around the periodontist if a dedicated geriatric dentist is unavailable.

Correspondence

Dr J.O Omo

Department of Restorative Dentistry
University of Benin

Email: julie.omo@uniben.edu

Keywords: Elderly, multidisciplinary management, oral health

INTRODUCTION

Improved life expectancy occasioned partly by improved health conditions and more accessible health care, has led to an increase in the population of older persons (Pereira et al., 1998), with the pyramid-shaped population undergoing transformation into a column-shaped population (Barnes and Wall, 194). Due to the increasing population of the elderly, there is consequential increase in demand for oral health care and need for programs covering not only the population in general but also the older group, as proposed in a previous study (Abram et al., 1992). It has been documented that elderly suffer from oral health problems (Waweru et al., 2003; Thakur et al., 2013; Alzarea, 2017) with prevalence of oral health problems as high as 40% reported (Waweru et al., 2003).

Good oral health which is an integral part of general wellbeing (Naito et al., 2006) and has been shown to reflect overall well-being for the elderly population as elderly persons are more predisposed to oral conditions due to age-related systemic diseases and functional changes (Issrani et al., 2012). Oral health status in the elderly is an indication of the cumulative outcomes of oral health behavior, diseases as well as treatments during a lifespan (Issrani et al., 2012).

Good oral health has been shown to be a contributory factor to quality of life (Naito et al., 2006). For successful treatment outcome in the elderly, the practitioner must adopt a humanitarian approach and develop a better understanding of the feelings and attitudes of the elderly, supporting the need for an education programme in geriatric dentistry (Issrani et al., 2012).

At the postgraduate level in Nigeria, geriatric dentistry is not developed as a separate and independent specialty with recommendations for its inclusion in the undergraduate dental curriculum as well as developed into a postgraduate specialty (Ibiyemi & Ibiyemi, 2016). It has been advocated that oral health care must be interdisciplinary and interprofessional to provide the most efficient and effective results (Thompson and Brennan, 2014), with the need for dental professionals to have a proper understanding of the magnitude of the services to be provided to the elderly (Issrani et al., 2012). Furthermore, the need to classify elderly adults according to age and properly investigate geriatric diseases instead of lumping them into one group has also been advocated (Lee et al., 2018). Hence this study was designed to assess the specialties involved in oral health care of the elderly as well as determine which groups are treated by the different specialties in two dental clinics in Nigeria.

MATERIALS AND METHODS

This was a retrospective descriptive cross-sectional study conducted using dental records of patients aged 65 years or more who had visited the dental clinic of 2

tertiary hospitals (National Hospital Abuja and University of Benin Teaching Hospital, Benin City) over a 6-month period from June 1, 2018 to December 31, 2018.

Citation: Enabulele JE, Agboghoroma GO, Omo JO (2021) Multidisciplinary nature of management of elderly patients in dental practice. *Nig J Dent Sci*; 5(1&2):18-24.

The data of interest collated from the retrieved records were age, gender, diagnosis made and specialty involved in management of the oral health conditions. The patients were categorized based on their age into as youngest-old (65-74 years), middle-old (75-84 years) and oldest old (85 years and older) proposed by and used in a previous study (Lee et al., 2018).

For the purpose of analysis drug induced gingival hyperplasia, precancerous and cancerous lesions of the oral mucosa and salivary glands, lichen planus, oral candidiasis, infections of the oral mucosa, bony exostosis, paramolar/supernumerary teeth, osteomyelitis, oral habits such as bruxism, mandibular micrognathia, supra erupted teeth, retained deciduous and hypoplastic teeth and fascial spaces, aphthous ulcers, trigeminal neuralgia and TMJ disorders were classified as other oral lesions.

All data was screened for completeness and analysed using IBM SPSS statistics for windows version 26.0 (IBM Corp. Armonk, N.Y., USA). The data collated was subjected to analysis using descriptive statistics. Chi square test was used to check for associations between variables where applicable with p set at 0.05.

RESULTS

A total of 177 records of elderly patients were utilized for this study with 67.2% from UBTH. and the remaining 32.8% from National Hospital Abuja. The youngest-old (65-74 years) made up 73.4% of the cases and females accounted for 60.5% of cases (Table 1). Multiple diagnoses were made in 58.2% of cases and multiple specialties were involved in treatment in 45.5% of cases (Figure 1). Five specialties (prosthodontics, conservative dentistry, periodontology, oral and maxillofacial surgery and oral medicine) were involved in management of these cases. More than half (55.4%) received treatment from periodontology followed by oral surgery (40.7%) and the least represented specialty was oral medicine (3.4%) (Figure 2).

The most prevalent oral health pathology encountered was periodontal disease (60.5%), followed by dental caries and its sequelae (42.4%) and missing teeth (16.9%). The least represented pathologies were ill fitting denture and failed root canal treatment accounting for 2.3% each (figure 3).

A higher proportion (69.9%) of cases with multiple diagnosis received treatment from periodontology specialty and this was statistically significant

($P < 0.0001$), (Table 2). A higher proportion of cases with multiple diagnosis received care from multiple specialties and this was statistically significant ($P < 0.0001$), (Table 3).

There was no statistically significant association between the age group of the elderly patients and the number of specialties that rendered treatment to them

($p = 0.32$), (Figure 4). Similarly, there was no statistically significant association between the oral health pathology recorded and age group of the elderly patients (Table 4), as well as specialty that rendered treatment and age group of the elderly patients (Table 5)

Table 1: Age and gender distribution of the patients

Variable	Frequency	Percent
Age group		
Youngest old (65-74 years)	130	73.4
Middle old (75-84 years)	40	22.6
Oldest old (≥ 85 years)	7	4.0
Gender		
Male	70	39.5
Female	107	60.5

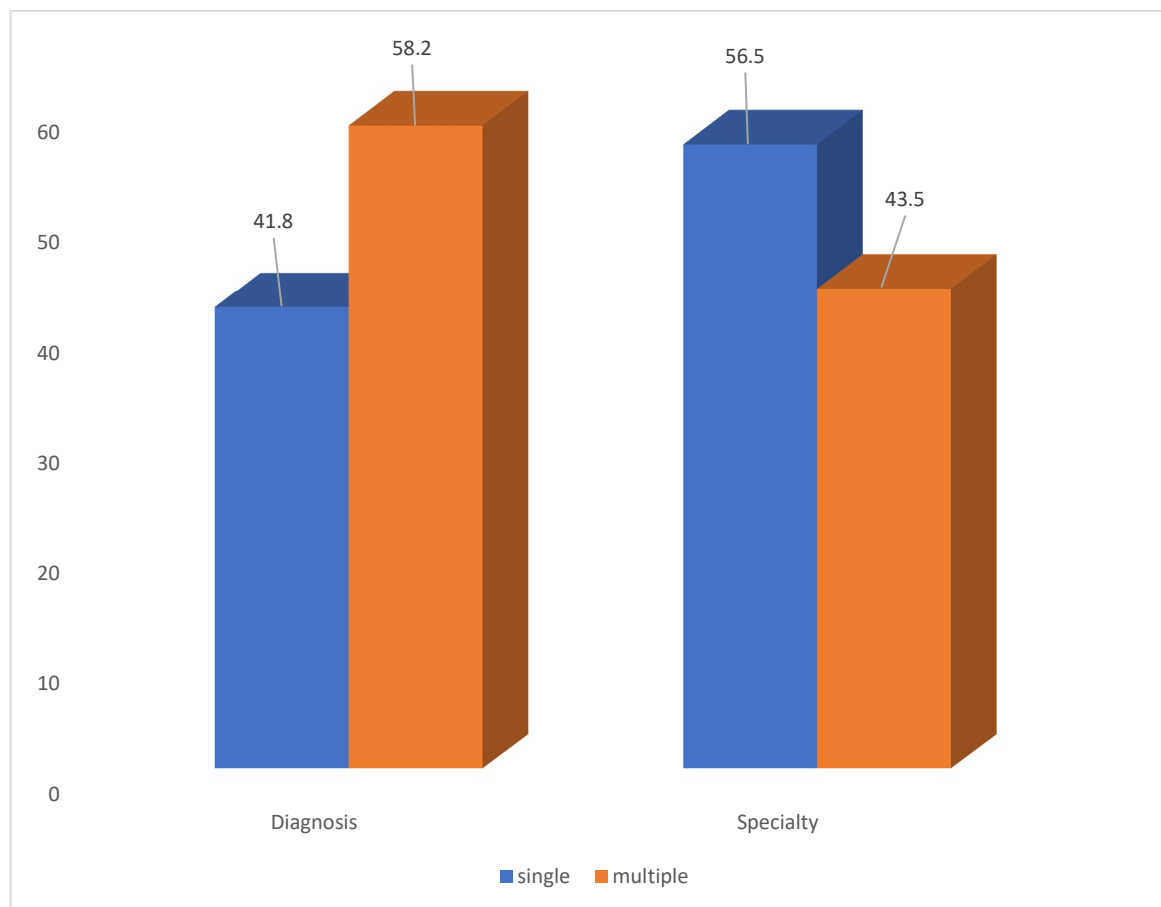


Figure 1: Number of Diagnosis made and specialties involved in treatment of elderly patients

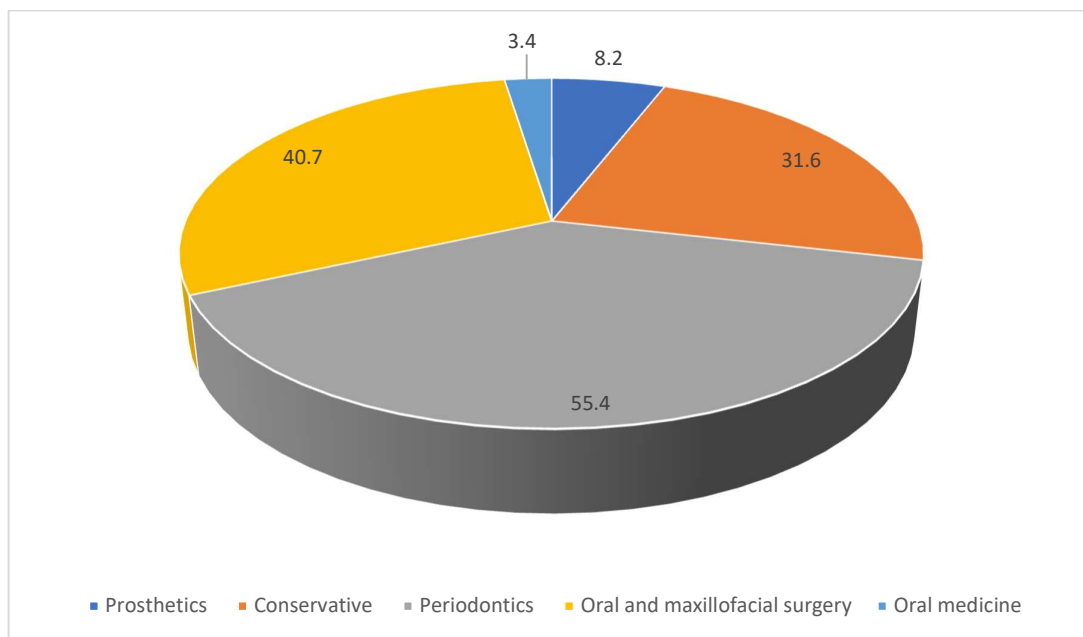


Figure 2: Distribution of specialties involved in treatment of the elderly patients

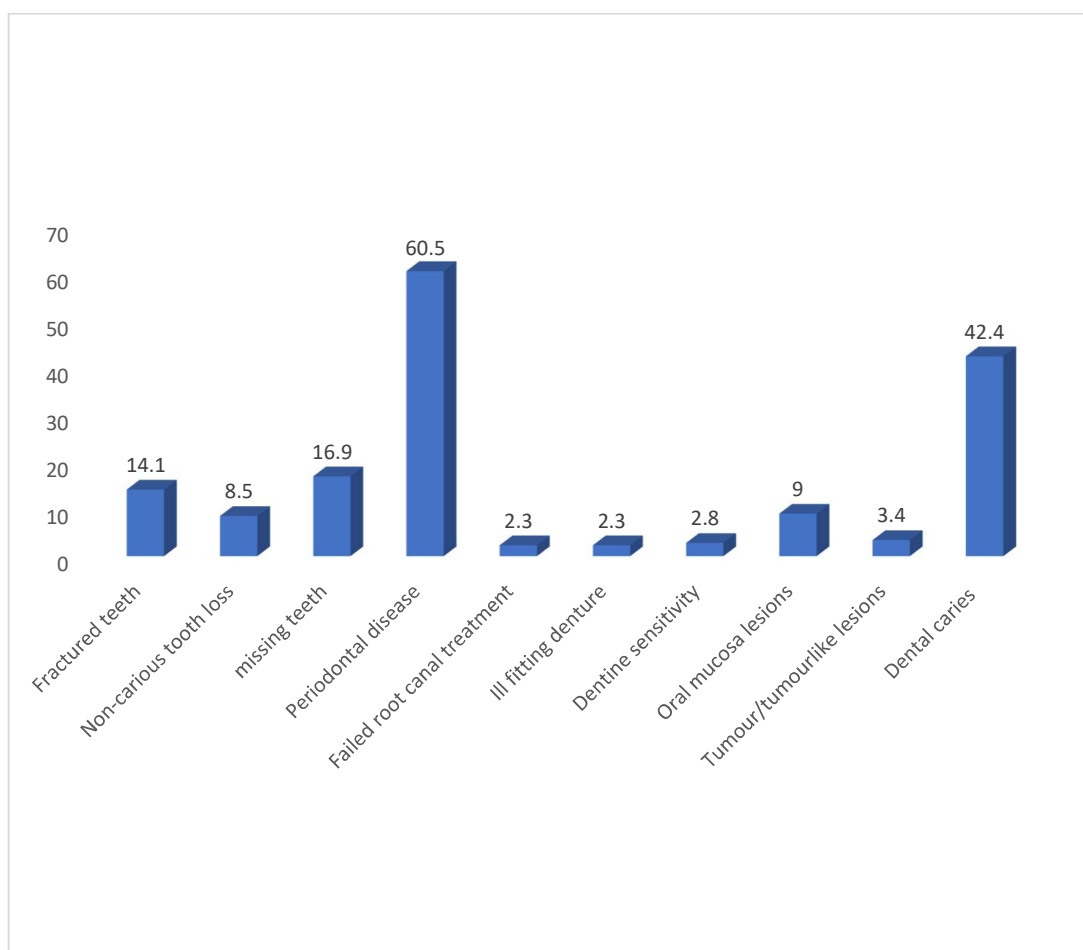


Figure 3: Distribution of oral pathological lesions diagnosed in the elderly patients

Table 2: Association between number of diagnosis and Periodontal treatment

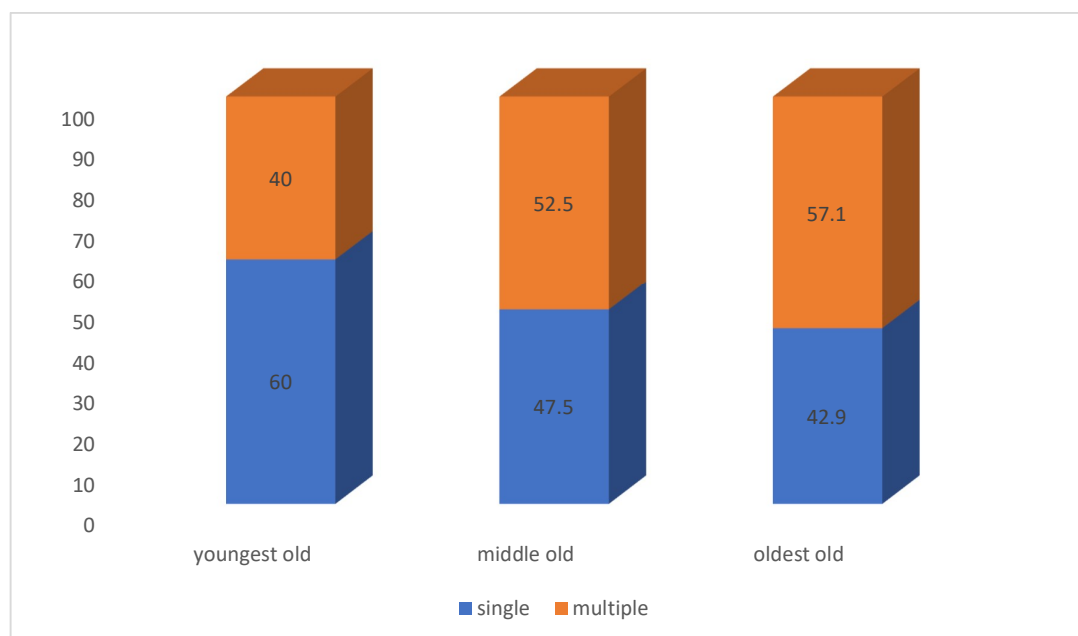
Diagnosis	Periodontal treatment		Total
	Yes	No	
Single	26 (35.1)	48 (64.9)	74 (100.0)
Multiple	72 (69.9)	31 (30.1)	103 (100.0)
Total	98 (55.4)	79 (44.6)	177 (100.0)

P<0.001

Table 3: Association between number of diagnosis and specialty involved in treatment

Diagnosis	Number of specialties involved in treatment		Total
	Single	Multiple	
Single	63 (85.1)	11 (14.9)	74 (100.0)
Multiple	37 (35.9)	66 (64.1)	103 (100.0)
Total	100 (56.5)	77 (43.5)	177 (100.0)

P<0.001



P=0.32

Figure 4: Association between age group of the elderly patients and number of specialties involved in treatment

Table 4: Association between oral pathologies diagnosed and age group of the elderly patients

Diagnosis	Age group			Total	P value
	Youngest old	Middle old	Oldest old		
Dental caries and sequelae	57 (76.0)	15 (20.0)	3 (4.0)	75 (100.0)	0.88
Fractured teeth	18 (72.0)	6 (24.0)	1 (4.0)	25 (100.0)	0.98
Non-carious tooth loss	11 (73.3)	4 (26.7)	0 (0.0)	15 (100.0)	0.83
Missing teeth	19 (63.3)	9 (30.0)	2 (6.7)	30 (100.0)	0.36
Periodontal disease	73 (68.2)	30 (28.0)	4 (3.7)	107 (100.0)	0.11
Failed RCT	4 (100.0)	0 (0.0)	0 (0.0)	4 (100.0)	0.64
Ill-fitting denture	3 (75.0)	1 (25.0)	0 (0.0)	4 (100.0)	1.00
Dentine sensitivity	4 (80.0)	1 (20.0)	0 (0.0)	5 (100.0)	1.00
Other lesions	13 (81.3)	2 (12.5)	1 (6.3)	16 (100.0)	0.53
Tumour/tumour like lesions	5 (83.3)	1 (16.7)	0 (0.0)	6 (100.0)	1.00

Table 5: Association between specialties involved in treatment and age group of the elderly patients

Specialty	Age group			Total	P value
	Youngest old	Middle old	Oldest old		
Prosthetics	22 (62.9)	11 (31.4)	2 (5.7)	35 (100.0)	0.29
Conservative	45 (80.4)	9 (16.1)	2 (3.6)	56 (100.0)	0.40
Periodontics	68 (69.4)	26 (26.5)	4 (4.1)	98 (100.0)	0.42
OMFS	50 (69.4)	20 (27.8)	2 (2.8)	72 (100.0)	0.36
Oral medicine	4 (66.7)	1 (16.7)	1 (16.7)	6 (100.0)	0.33

DISCUSSION

Aging is a natural process and should be regarded as a normal, inevitable biological phenomenon with both the developed, as well as the lesser-developed countries, expected to experience significant shifts in the age distribution of the population by 2050 (Razak et al., 2014). Globally, poor oral health amongst older people has been particularly evident in high levels of tooth loss, dental caries experience, and the prevalence rates of periodontal disease, xerostomia and oral precancer/cancer (Gil-Montoya et al., 2015). The negative impact of poor oral conditions on the quality of life of older adults is an important public health issue, which must be addressed by policy-makers. The means for strengthening oral health programme implementation are available; the major challenge is therefore to translate knowledge into action programmes for the oral health of older people. The World Health Organization recommends that countries adopt certain strategies for improving the oral health of the elderly (Petersen and Yamamoto, 2005).

The youngest-old (65-74 years) made up majority of the cases in this study a finding comparable to a previous study with lower prevalence but the age group was the most represented (Okoje et al., 2019). A higher proportion of the elderly that sought oral treatment as recorded in this study were females. A finding similar to a previous study (Okoje et al., 2019) but contrary to a study among rural elderly that observed higher utilization of oral health services among the male elderly population (Alzarea, 2017).

Elders above 65 years (old age) have health problems as a result of aging process, which calls for special consideration (Harris, 1999). The oral conditions recorded in this study were comparable to previous reports (Petersen & Yamamoto, 2005; Gonsalves et al., 2008; Griffin et al., 2012; Razak et al., 2014; Gil-Montoya et al., 2015; Okoje et al., 2019; Omo et al., 2021). The most prevalent oral health pathology encountered was periodontal disease a finding akin to a previous study (Okoje et al., 2019). This is not surprising as it has been demonstrated that the most frequent findings among the elderly are the accumulation of bacterial plaque with consequent gingivitis and mild or moderate alveolar bone loss (Hirotsu et al., 2002; Gil-Montoya et al., 2015). Dental caries and its sequelae (42.4%) were the second most

common pathology in this study. Dental Caries has been shown to be a major oral health problem among the elderly for various reasons: the increase in treatment and maintenance of teeth rather than their extraction; age-related salivary changes; a poor diet; exposure of the root surface by gingival recession (Thomson, 2004; Gonsalves et al., 2008; Wyatt et al., 2014; Gil-Montoya et al., 2015). Tooth loss was the third most common pathology in this study. This can be attributed to the fact that; When not treated, the final stage of caries and periodontal disease is tooth loss and eventually edentulism, which is highly frequent and represents a failure of the dental care system (Gil-Montoya et al., 2015).

Aging process affects the oral tissues in different ways with the possibility of multiple oral pathologies occurring in an elderly individual. This may have contributed to the multiple diagnoses recorded in majority of cases seen in this study. Therefore, with the presence of multiple oral problems and giving that the study was carried out in tertiary health institutions with multi-specialty clinics, treatment of these cases will ultimately involve multiple specialties.

Overall, five specialties (prosthodontics, conservative dentistry, periodontology, oral and maxillofacial surgery and oral medicine) were involved in management of the elderly persons in this study. It has hitherto been indicated that oral diseases and conditions that are associated with aging concomitantly result in an increased need for preventive, restorative, and periodontal dental care (Rapheal, 2017) hence the involvement of these specialties in the treatment of elderly persons. Periodontal and oral surgical treatments were the most prevalent treatments rendered among the elderly in this study. This is comparable to a previous report where scaling and polishing and tooth extractions were the most common procedures carried out in the elderly (Okoje et al., 2019).

Elderly patients irrespective of age in this study had similar oral problems and required similar specialist care. This supports the need for a geriatric dentistry specialty where possible to address all the oral health needs of the elderly.

A higher proportion of cases with multiple diagnosis received periodontal treatment, as well as care from multiple specialties. This shows that periodontal

disease is an important oral problem in elderly persons. This shows that the oral care of the elderly can be centred around the periodontologist with other specialties invited to comanage if need be especially in climes where there is no specialist geriatric dentist.

CONCLUSION

Elderly patients irrespective of age have similar oral problems and required similar specialist care. Multiple specialties are involved in the oral health care management of elderly patients. periodontology specialty followed by oral and maxillofacial specialty top the specialties rendering care of the elderly in most cases. Oral care of the elderly can be centred around the periodontist if a dedicated geriatric dentist is unavailable. However, there is need for a geriatric dentistry specialty where possible to address all the oral health needs of the elderly.

Source of support

None

Conflict of Interest

None

REFERENCES

- Abrams RA, Ayers CS, Lloyd PM (1992). Attitudes of older versus younger adults toward dentistry and dentists. *Spec Care Dent*; 12:67-70
- Alzarea BK (2017). Dental and oral problem patterns and treatment seeking behaviour of geriatric population. *Open Dent J*; 11:230-236.
- Barnes I, Walls A (1994). *Gerontology*. Wright Oxford, 1994
- Gil-Montoya JA, de Mello ALF, Barrios R, Gonzalez-Moles MA, Bravo M (2015). Oral health in the elderly patient and its impact on general well-being: a nonsystematic review. *Clin Interventions Aging*; 10:461-467
- Gonsalves WC, Wrightson AS, Henry RG (2008). Common oral conditions in older persons. *Am Fam Physicians*; 78:845-852.
- Griffin SO, Jones JA, Brunson D, Griffin PM, Bailey WD. Burden of oral disease among older adults and implications for public health priorities. *Am J Public Health* 2012;102:411-418.
- Harris NO. 6th ed. New York: Prentice Hill; 1999. *Primary Preventive Dentistry*.
- Hirotoimi T, Yoshihara A, Yano M, Ando Y, Miyazaki H. Longitudinal study on periodontal conditions in healthy elderly people in Japan. *Community Dent Oral Epidemiol*. 2002;30(6):409-417.
- Ibiyemi O, Ibiyemi ST. The need for geriatric dental education in Nigeria. *Nig Dent J* 2016; 24:256-262.
- Issrani R, Ammanagi R, Kelusha V. Geriatric dentistry – meet the end. *Gerodontology* 2012; 2:e1-5
- Lee SB, Oh JH, Park JH, Choi SP, Wee JH. Differences in youngest-old, middle-old and oldest-old patients who visit the emergency department. *Clin Exp Emerg Med* 2018; 5:249-255
- Naito M, Yuasa H, Nomura Y, Nakayama T, Hamajima N, Hanada N. Oral health status and health-related quality of life: A systematic review. *J Oral Sci* 2006; 48(1): 1-7.
- Okoje VN, Adebuseye LA, Olowookere OO, Daniels GF, Alonge TO. Oral diseases in geriatric patients: pattern of presentation and challenges of management in developing economy. *Med Res Arch* 2019; 7:1979-1982
- Omo JO, Enabulele JE, Agboghroma G (2021). Differences in oral health needs of elderly persons who visited dental clinics in Nigeria. *Nigerian Journal of Periodontal Research Vol* 2:51-57.
- Pereira A, Chiarello G, Luiz O, Faria R. Maintenance of prosthetic treatment in a geriatric patient – case report. *Braz Dent J* 1998; 9:109-116
- Petersen PE, Yamamoto T. Improving the oral health of older people: the approach of the WHO Global oral health programme. *Community Dent Oral Epidemiol* 2005; 33:81-92.
- Rapheal C. Oral health and aging. *Am J Public Health* 2017; 107:S44-S45.
- Razak PA, Richard KMJ, Thankachan RP, Hafiz KAA, Kumar KN, Sameer KM. Geriatric oral health: A review article. *J Int Oral Health* 2014; 6:110-116.
- Thakur R, Banerjee A, Nikumb V. Health problems among the elderly: A cross-sectional study. *Ann Med Health Sci Res* 2013; 3(1): 19-25.
- Thompson LA, Brennan LJ. Geriatric dentistry. *Dent Clin N Am* 2014; 58:xi-xiii
- Thomson WM. Dental caries experience in older people over time: what can the large cohort studies tell us? *Br Dent J*. 2004;196(2):89-92; discussion 87
- Waweru LM, Kabiru EW, Mbithi JN, Some ES. Health status and health seeking behaviour of the elderly persons in Dagoretti division, Nairobi. *East Afr Med J* 2003; 80(2): 63-7.
- Wyatt CC, Wang D, Aleksejuniene J. Incidence of dental caries among susceptible community-dwelling older adults using fluoride toothpaste: 2-year follow-up study. *J Can Dent Assoc*. 2014;80:e44.