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Research Article

SENIOR DENTISTRY AS A NECESSARY FACTOR FOR SPECIALIZATION DUE TO DEMOGRAPHIC CHANGE

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A R T I C L E I N F O

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Dental professionals were perceived solely as oral care professionals. However, with changes in demographic profiles and increased number of seniors dentists are becoming an integral part of healthcare system. It is necessary to look for ways to better integrate oral health care within primary care structures. The alignment of dental services and other primary care structures has made little progress on the ground. Dental practices should be encouraged to develop alliances with primary care teams or medical practices to promote cross-referral of patients from medical to dental care and vice versa, and also the exchange of knowledge on the links between dental and medical disorders. Further policies and government engagement is required to implement senior dentistry as a unique specialization.

INTRODUCTION

As per the Federal Interagency Forum on Aging-Related Statistics, the number of Americans aged 65 and up will reach 72 million by 2030, responsible for roughly 20% of the total population, nearly tripling from 2000 (Americans, 2012). As a result, the number of older persons seeking dental care is increasing. Despite the fact that roughly 5% of persons over the age of 65 are edentulous, an increasing percentage of older adults are keeping their natural teeth as compared to earlier cohorts (Gooch *et al*., 2003). Evidence reveals that from 1999 to 2004, the National Health and Nutrition Examination Survey (NHANES) was conducted, and roughly 18% of persons aged 65 and above with natural teeth had untreated caries (Gooch *et al*., 2003), while the survey (NHANES) later demonstrated that from 2009 to 2012, 68 percent of these patients have periodontitis (Eke *et al*., 2015). It is critical to take into account the total clinical and oral health condition of ageing patients in order to deliver the best dental care possible.

Potential Physical and Mental Challenges Aging

Adults over 65 may suffer from a variety of health issues, like frailty, functional independence or cognitive impairment. Over 40% of noninstitutionalized seniors aged 65 and up reported that they were in excellent or very good health., according to the US Administration on Aging (compared to 55 percent for persons aged 45 to 64 years) (Administration on Aging, 2012). Most elderly people suffer from at least one chronic illness, and many suffer from many illnesses (Administration on Aging, 2012). Hypertension (71 percent), arthritis (49 percent), heart disease (31 percent), any cancer (25 percent), and diabetes were the most common illnesses among older people in the years leading up to and including 2013. (21%) (Administration on Aging, 2012). Cataracts, hearing loss, refractive errors, osteoarthritis and back and neck discomfort, chronic obstructive pulmonary disease, stress, diabetes, and dementia were all mentioned in a 2015 World Health Organization report (World Health Organization, 2015).

Changes in cellular homeostasis, such as regulation of blood and body temperature and extracellular fluid volumes, as well as decline in organ mass and loss of body system functional reserves contribute to age-related physiologic changes in older individuals (Yellowitz and Scheneiderman, 2014). Other issues include changes in the gastrointestinal tract such as decreased intestinal blood flow and stomach motility, as well as an increase in gastric pH. Reduced function of the renal, cardiovascular, respiratory, central nervous, and/or immunological systems is possible (e.g., decreases in glomerular filtration, cardiac output, lung capacity, sympathetic response, cell-mediated immunity) (Dodds, 2014). These changes could affect medication absorption and metabolism, as well as a person's sensitivity to specific drugs (Ouanounou and Haas, 2015). Reduced bone and muscle mass are two physical changes related with ageing (Dodds, 2014). Mobility may be limited as a result of osteoarthritis. Visual abnormalities include presbyopia, age-related macular degeneration, cataracts, glaucoma, and diabetic retinopathy. Patients may develop hearing loss as they get older, making it difficult for them to communicate (Yellowitz and Scheneiderman, 2014; Yellowwitz, 2015). In the aged population, postural reflexes may become weak, and falls are more prevalent (Yellowitz and Scheneiderman, 2014; Dodds, 2014; Ouanounou and Haas, 2015). Older persons can have a wide range of cognitive acuity, from complete absence

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to mild cognitive impairment to full-blown dementia. Dementia is a syndrome characterised by gradual cognitive impairment that hinders daily activities (Yellowitz and Scheneiderman, 2014; Yellowitz, 2015). Patients with deficient cognitive health tend to struggle with their medical conditions, prescriptions, and other self-care duties, such as dental hygiene (Yellowitz, 2015). Therefore, there is an urgent need that senior dentistry is implemented as a separate field of specialization to meet the needs of seniors.

Older Adults use a Wider Range of Services

- The health-care needs of older individuals differ from those of younger people, which will have an impact on future demands on the health-care system.
- Chronic illnesses (e.g., cancer, diabetes, heart disease) are more common in older folks than in younger people. Wu and Green (2000) found that 84 percent of adults aged 65 and above had at least one chronic condition, compared to 38 percent of people aged 20 to 44.
- Because of their higher physical vulnerability, older persons are more likely to require the services of health professionals as a result of injuries and illnesses (e.g., they're more likely to get pneumonia from the flu, and they're more likely to break bones in falls).
- Older individuals face more limitations in accomplishing daily activities than younger people due to higher rates of physical and cognitive impairment. According to the US Department of Health and Human Services (USDHHS), about 35% of persons aged 65 and more have an activity limitation, compared to around 6% of those aged 18 to 44.
- Compared to younger folks, older adults take significantly more prescription drugs.
- In comparison to younger persons, older folks need more ambulatory care, hospital services, nursing home services, and home health care services. People aged 65 and above have an average of 706 ambulatory care visits per 100 people (compared to 291 visits per 100 people aged 18-44); have an average of 286.6 hospital discharges per 1,000 people (compared to 94.8 for those aged 18-44); and make up more than 70% of home health care patients (USDHHS, 2003).

Oral Health Status in Senior Population

The shift from high to low mortality and fertility that has followed this century's socioeconomic progress has resulted in a shift in the primary causes of disease and death, as well as a rise in general health issues (WHO, 2011). As a result, oral health issues in the elderly, such as dental caries and periodontal disease, are likely to deteriorate (Lopez *et al*., 2017). Poor oral health is more common in the elderly with dementia, an illness that will grow more widespread as the world's population ages. Several research have looked at the link between poor oral health and cognitive impairment, and the findings imply that cognitive decline may have a detrimental impact on oral health, as well as that poor oral health may cause cognitive decline through particular biological mechanisms (Nangle *et al*., 2017). According tofew studies, it is unclear how or whether oral health issues and cognitive state are associated (Wu *et al*., 2016). The increasing incidence of oral disease in the cognitively impaired elderly may be favoured by their general conditions, which include cognitive decline, memory loss, learning disabilities, attention deficits, and motor skill deterioration, all of which result in a reduced ability to perform routine oral care (Moritz *et al*., 1995). Refusing to open their mouth, brush their teeth, using vicious language, or being violent are all common problems among cognitively-limited elderly individuals. The elderly with dementia has a lower salivary flow even in the early stages of the condition, which can contribute to a higher prevalence of dental caries (Ship *et al*., 1990), but also due to eating and swallowing problems, which jeopardize communication abilities (Ship *et al*., 2002). Due to their cognitive status and lack of access to professional services, patients with dementia residing in Australian nursing homes have greater levels of untreated coronal and root caries, as reported by Silva *et al*. (Silva *et al*., 2014). Periodontal disease is more common in dementia patients than in people with normal cognitive abilities, and periodontal health deteriorates as cognitive impairment progresses (Martande *et al*., 2014). There is evidence of a link between periodontal disease and dementia. Periodontal disease is an inflammatory disease that affects the oral cavity, and it has been shown to impact people who are susceptible to dementia and contribute to its development (Lee *et al*., 2017). Angular cheilitis, stomatitis ulcers, hyperplasia, and candidiasis are the most prevalent denture-related oral mucosal lesions observed in the elderly. Dementia, delirium, and social isolation can cause a loss of cognitive independence and a deterioration in self-care, which can exacerbate the oral mucosal disease (Ewan and Staines, 2008). Nonverbal individuals' oral health problems may have a detrimental influence on their quality of life since they are unable to verbalise their pain and suffering. Dementia affects individuals' dental health as well as their overall quality of life. It has been proven that the dental health of dementia patients is worse than that of persons with normal cognitive function (Chalmers *et al*., 2003; Gil *et al*., 2017).

Role of Dental Specialization Due to Changing Needs

Dental requirements of seniors differ from that of young, healthy individuals. Due to these differences, there is need that specialized oral care is provided timely to halt disease progression. Root caries is more common in older adults due to increased gingival recession, which exposes root surfaces, and greater usage of drugs that promote xerostomia. Roughly half of those over the age of 75 have root caries affecting at least one tooth (Gooch *et al*., 2003; United State, 2000; Gregory and Hyde, 2015). Secondary coronal caries affects ten percent of patients aged 75 to 84, which is likely due to the incidence of restorations in this age group (Jablonski and Barber, 2015). The use of rotating/oscillating toothbrushes, as well as a topical fluoride (i.e., daily mouth rinses, high fluoride toothpaste, and regular fluoride varnish treatment), as well as careful attention to dietary intake, have all been advised in the literature (Stein and Alboe, 2015; Jablonski and Barber, 2015; Gregory and Hyde, 2015).

As cardiovascular issues are more common in older people, Ouanounou and Haas propose that the amount of epinephrine in anaesthetics be limited at 0.04 mg (Ouanounou and Haas, 2015). Because of the predicted effect of ageing on the heart, the authors urge that the use of epinephrine in older adult patients should be minimised even if there is no history of overt cardiovascular disease. When considering several injections of an epinephrine-containing local anaesthetic in the

elderly, they recommend monitoring blood pressure and heart rate (Ouanounou and Haas, 2015).

When an older adult has cognitive limitations, communication during a dental appointment might be difficult. When caring for a patient with dementia, it is recommended that the number of people, distractions, and noise in the operatory be kept to a minimum, yet a trusted caregiver in the room may bring reassurance to the patient (Stein and Alboe, 2015). Nonverbal communication, such as smiling and eye contact, should be used while approaching patients from the front at eye level (Stein and Alboe, 2015). The dentist should introduce himself or herself at the start of the talk. Instructions should be brief and words short, such as "Please open your mouth," because a patient with cognitive limitations may easily get overwhelmed by information (Stein and Alboe, 2015). Cognitive impairment or dementia can hinder a patient's capacity to follow instructions after oral surgery, hence practitioners should guarantee local hemostasis (i.e., sutures, local hemostatics, socket preservation procedures) prior to the patient's departure from the dental office. Dentulous patients with cognitive impairments should be urged to clean their teeth two or more times each day, with the option of using an electric or battery-operated toothbrush (Yellowitz, 2016). As much as feasible, the same oral hygiene practice should be followed (Yellowitz, 2016). Patients using detachable prosthetic devices should remove, examine, and clean them before going to bed, then replace them in the morning (Yellowitz, 2016). This shows that seniors require a focussed and targeted treatment approach which cannot be applied universally to the general population.

Dental Care and Oral Hygiene At Home Are Hampered By Physical and Sensory Constraints

Patients with hearing loss*:* When speaking with senior patients, dental professionals should speak slowly, clearly, and loudly to improve hearing and comprehension (Stein and Alboe, 2015). It's crucial to avoid introducing a patronising or condescending tone of voice by speaking loudly and slowly (Stein and Alboe, 2015). Yellowitz in *The ADA Practical Guide to Patients with Medical Conditions* recommends the following while communicating with people who have hearing loss or who are wearing hearing aids:

- If you're speaking to a patient who reads lips, make sure you're facing them and speaking clearly and naturally. Also, make sure your lips are visible (remove mask). Being on the same level as the patient is important.
- Before speaking, use a mild touch or signal to get the patient's attention. When speaking to the patient, make sure they are looking at you and avoid using technical words. Use written instructions and facial gestures to convey your message.
- Inform the patient before using dental equipment for the first time or when the equipment is changed as it results in a different experience, such as vibrations from a low-speed versus a high-speed hand piece.
- When chatting with individuals who wear hearing aids, keep background noise to a minimum. Avoid loud noises and touching your hearing aid with your hands (s). During therapy, patients may want to alter or turn off their hearing aid(s).
- Dental facts, procedures, and postoperative instructions can be explained through written and visual materials and websites.

Patients with Physical Limitations/loss of Mobility*:* Hand, finger, elbow, shoulder, and/or neck osteoarthritis or rheumatoid arthritis might make it difficult to maintain appropriate oral hygiene at home (Yellowitz, 2016). Manual toothbrush handles can be modified (for example, with Velcro® straps or a bicycle handlebar grip) or an electronic toothbrush with a wide, grippable handle can be used to compensate for lost mobility. Cleaning between teeth can be made easier with floss holders or interdental cleaners/brushes (Yellowitz, 2016). Increasing the number of dental cleanings and examinations might aid in maintaining excellent oral health (Yellowitz, 2016).

Patients with visual loss*:* A person's ability to receive nonverbal conversational cues that are commonly expressed visually can be harmed by age-related visual impairments such as cataracts, glaucoma, or presbyopia (Stein and Alboe, 2015). Assist the patient with seeing demonstrations and reading written information, such as appointment cards and instructions, in a clear and understandable manner (Yellowitz, 2016). In the dental office, the following tools and strategies (Stein and Alboe, 2015) can help visually impaired older adults:

- In the waiting room, place publications with large print.
- Good lighting in all sections of the office; add spot/task lighting in locations where forms are filled out.
- Prescription bottles with large print
- Reduce glare by using blinds or shades.
- Door handles, towel racks, and stair markers should all be painted in contrasting colours.

Oral Health Policy

The state of one's teeth has an impact on one's entire quality of life. The National Economic and Social Forum recommended for the adoption of "standards of care across the system that emphasise quality of life outcomes" in its report on Care for Older People (NESF, 2005). Though the link between dental health and life quality is not always clear, new research has shown that the emotional and psychosocial repercussions of oral problems can be just as devastating as those of other illnesses (Allen, 2003). According to the National Survey of Adult Oral Health 2000-02, older persons aged 65 and up had the lowest oral-health related quality of life score when compared to younger adults (Whelton *et al.*, 2007a).

Older individuals continue to be a disadvantaged and marginalised group when it comes to their dental health (Whelton *et al*., 2008). When compared to younger age groups, older persons have the worst oral health profile, the largest levels of unmet treatment need, and the lowest oral health-related quality of life. They prefer to avoid going to the dentist unless they have an immediate need for treatment (pain/problem) and are unaware of the value of frequent oral check-ups in terms of the potential effects of poor oral health on their overall health. Finally, in addition to a lack of information, elderly persons face various obstacles that limit their access to dental treatment. The Department of Health and Children, in association with the Health Services Executive (HSE), must tackle the disparities in oral health that older people confront, particularly since the National Health

Promotion Strategy 2000-2005 (2000) made no mention of the elderly's oral health.

The following are some of the policy problems that need to be considered for older people:

- Oral health promotion among older persons to raise their understanding of oral health and their DTSS entitlements; oral health promotion by other healthcare professionals and carers who interact with older people frequently; oral health promotion by other healthcare professionals and carers who have frequent contact with older people;
- The DTSS's suitability for the treatment needs of older individuals;
- Domiciliary care for those who are unable to receive clinic-based services;
- Close collaboration between dentistry and medical professions to provide patient-centric care.

CONCLUSION

Dental professionals were perceived solely as oral care professionals. However, with changes in demographic profiles and increased number of seniors dentists are becoming an integral part of healthcare system. It is necessary to look for ways to better integrate oral health care within primary care structures. The alignment of dental services and other primary care structures has made little progress on the ground. Dental practices should be encouraged to develop alliances with primary care teams or medical practices to promote cross-referral of patients from medical to dental care and vice versa, and also the exchange of knowledge on the links between dental and medical disorders. Further policies and government engagement is required to implement senior dentistry as a unique specialization.

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