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Oral Health in Older Adults -An Overlooked Issue

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Abstract

Across the life there are various age groups ranging from young born to aged ones. Ageing of the population is one of the most important demographic facts that came to the foreground in the 21st century. Oral health problems can hinder a person's ability to maintain a satisfying and nutritional diet.

Introduction

Life is a stage where everybody plays a role, but successful are those who play till the end. As a child is brought into the world he is in the safe hands of his loved ones and pampered so that lifestyle can flourish. Across the life there are various age group ranging from young born to aged ones. School going children are grown up adults now, young adults are grown up citizens now, and middle aged have become elders. Ageing of the population is one of the most important demographic facts that came to the foreground in the 21st century [1]. In the whole world, people are living longer, birth rates have decreased and consequently the elderly population increased both numerically and pro rata. Ageing of the population affects all facets of the society to include health, social security, environment related issues, education, business opportunities, socio-cultural activities and family life.

Oral health is an important and often overlooked component of an older person's general health and well-being. In the words of former Surgeon General C Everett Koop: "You are not healthy without good oral health [2]." Oral health can affect general health in very direct ways. Oral health problems can cause pain and suffering as well as difficulty in speaking, chewing, and swallowing. These problems can also be a result of certain medications used to treat systemic diseases. In addition, the treatment of systemic diseases can be complicated by oral bacterial infections [3].

There are also associations between oral health and general health and well-being. For example, the loss of self-esteem associated with loss of teeth [4] and untreated disease (caries and periodontal diseases) as well as the economic burden of dental care due to the paucity of dental insurance programs for the elderly. Oral health problems are not typically associated with low life expectancy and death, but oral cancers result in nearly 8,000 deaths each year, and more than half of these deaths occur among persons with 65 years of age and older.

The aim of this paper is to highlight the oral health needs of older adults using data from several national surveys, and describe the general dental problems in older populations

This new series of reports features information to help monitor the health of our aging population

Older people can expect to live longer than ever before. Under existing conditions, women who live till age 65 can expect to live about 19 years longer, men about 16 years longer. Whether the added years at the end of the life cycle are healthy, enjoyable, and productive depends, in part, depends upon preventing and controlling a number of chronic diseases and conditions. A report undertaken by the National Center for Health Statistics, U.S.A with support from the National Institute on Aging, to help meet the challenge of extending and improving life [5].

What is the state of oral health among elders?

Answering this question requires examining how oral health affects an older person's quality of life, as well as looking at the diseases that are related to oral health.

Impact of oral health on quality of life

Oral health problems can hinder a person's ability to maintain a satisfying and nutritious diet, to enjoy interpersonal relationships and a positive self-image, and can be a direct source of pain and discomfort. Overall, oral health problems are more frequently found in an older adult population; unfortunately, other health problems are often a priority in this age cohort.

Oral pain

Oral pain is a sign of an advanced problem in a tooth or in the gingiva (gum).

Although pain may dissipate with time, professional attention is needed to effectively manage the affected tooth or tissue. U.S National data indicate that 7 percent of adults 65 years and older reported having tooth pain at least twice during the past 6 months. Older adults who belonged to low level of education were more likely to report dental pain than older adults who were better educated. Older men and older women showed no difference in their likelihood of reporting tooth pain [6].

Difficulty eating

Oral health problems, whether from missing teeth, generalized attrition, ill-fitting dentures, cavities, gum disease, or any infection, can cause difficulty in eating and can force people to adjust the quality, consistency, and balance of their diet. For e.g., edentulous people (those with no natural teeth) tend to eat fewer raw vegetables, salads, and fresh fruits than people who have their own natural teeth. Edentulous individuals are more likely to have lower intakes of micronutrients, such as calcium, iron, panthonic acid, vitamin C and vitamin E, than their dentate counterparts [7]. Papas et al. [8] reported that subjects who wore dentures consumed more refined carbohydrates, sugar, and dietary cholesterol than their dentate counterparts. It can be interpreted that the presence of dentures contributes to poorer intake across multiple nutrients compared to dentate subjects. Poor denture

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fit may contribute to some of these differences. Therefore patients with tooth loss warrant aggressive counseling regarding methods to maintain dietary quality, such as blending or shredding fresh fruits and vegetables to preserve adequate intake [9]. As the vast majorities of the studies mentioned are cross-sectional and have to be interpreted with caution; it is not clear if nutrition impacts tooth loss or if tooth loss impacts nutritional intake or both.

Edentulism (Total tooth loss)

Edentulism can have obvious negative esthetic and functional (speech, chewing/eating) consequences. In 1993 one-third of non-institutionalized adults 65 years of age and older reported having lost all their natural teeth. Although there was no difference in the proportion of men and women who had lost all of their teeth, there were large differences in the prevalence of edentulism by socioeconomic status. Persons with family incomes below the poverty line were almost twice as likely to be edentulous as persons with family incomes at or above the poverty line. Similarly, edentulism was higher among black persons than among white persons. In 1995-97, 52 percent of nursing home residents 75 years of age and older were edentulous [10].

Oral health in institutionalized and high risk older adults

The oral health status in the general older people population has been addressed increasingly in the past years, but the oral health of institutionalized older people and underprivileged populations continues to be a neglected issue [11]. Studies of the oral health status of disadvantaged groups of old-age people have been conducted in some industrialized countries and these indicate that the home-bound and institutionalized suffer worse oral health conditions than do seniors living in the same community (Saub and Evans [12]). For example, in Hong Kong, the mean DMFT index was 21.4 in institutionalized as compared to 17.7 in non-institutionalized older people [13]. A representative national survey made in 2002/2003 on oral health conditions in the Brazilian population revealed a mean DMFT of 27.8 in community-dwelling older people [14]. Consistently higher dental caries is seen in institutionalized population than community-dwelling populations [11,13]. In most of the studies institutionalized older people have high proportion of edentulosim.

Multiple medications

Asthma, hypertension, diabetes, and other chronic diseases that are prevalent among older adults account for the fact that many take multiple prescriptions and over-the-counter medications. It is not unusual for at least one of these medications to have a side effect that is detrimental to oral health. The adverse effects of different medications on oral health are enlisted in (Table 1).

Diseases related to the oral cavity

Dental caries: Dental caries, the most common multifactorial infectious disease of the teeth, represent another physiological burden, especially important for those whose systems are already weakened by diseases and aging. In 1988-1994 nearly one-third of adults, 65 years of age and older with natural teeth had untreated dental cavities in either the crown or the root of their teeth. Decay untreated by a dentist usually gets worse, resulting in pain and the potential loss of teeth. Dental caries is one of the main causes of tooth loss for both young and old adults. Although the prevalence of dental caries has declined in the U.S. overall, declines have not occurred among the most socially disadvantaged groups of older adults

Periodontal diseases: Dental caries and periodontal disease are the major causes of tooth loss which is a significant component of the global burden of oral disease. Petersen and Ogawa [9], reported periodontal status of 65-74 year olds across countries of the world. In the majority of countries, the prevalence of gingivitis and initial periodontal pockets are the most frequent and to a large extent these reflect poor oral hygiene. The inter-country variation in prevalence rates of severe periodontitis is high; the mean number of older people affected by severe periodontitis ranges from 5 to 20% although some countries exceed these levels [15]. Among the negative impacts on daily life of poor oral health are reduced chewing performance, constrained food choice, weight loss, impaired communication, low self-esteem and well-being Kandelman et al. [16]. A systematic review of the scientific literature was recently carried out to assess the impact of oral disease on the general health of older people. Strong associations were established between periodontal disease and diabetes, and tooth loss with poor nutrition. Increased life expectancy without enhanced quality of life has a direct impact on public health expenditures and is becoming a key public health issue in the more developed countries. It will also be of major concern to developing countries and countries with high population densities and emerging economies, such as China and India [16].

Oral cancer: Oral cancer is a heterogeneous group of cancers occurring in different parts of the oral cavity, with different predisposing factors, prevalence, and treatment outcomes. It is the sixth most common cancer reported globally with an annual incidence of over 300,000 cases, of which 62% arise in developing countries. Oral cancer, which includes the buccal mucosa, tongue, lip, and pharynx is of particular concern for persons 65 years of age and older because they are 7 times more likely to be diagnosed with oral cancer than persons under 65 years of age [16]. The geographical variations in incidence and mortality are indicative of the global differences in the prevalence of risk factors [17]. While mouth and tongue cancers are more common in the Indian sub-continent, nasopharyngeal cancer is more common in Hong Kong; pharyngeal cancers are more common in Western Europe and South Central Asia and laryngeal cancers in Western Asia, North and South America and the Caribbean Ferlay et al. [18]. The Age Specific Incidence Rates (ASIR) for oral cancer in males showed a gradual rise from 10 to 64+ years of age and the peak age was at 64-69 years with a subsequent apparent decrease in the risk in a study in Karachi, Pakistan.

Community-based screening of high risk population, early diagnosis, better treatment, rehabilitation and palliative care; these measures will improve survival and also contribute to a better quality of life. Primary prevention remains the only strategy for absolute cancer control [18].

Dental insurance: Dental insurance is an important predictor of dental care utilization [19]. Estimates of coverage range from 14.5 percent among all those sixty-five and older to 28.4 percent of sixty-five to seventy-four year-olds and 16.5 percent of those aged seventy-five and older [20,21]. Since dental insurance is usually acquired as part of a job benefit package, most persons lose their dental insurance coverage when they retire. In some states of US, Medicaid provides limited coverage for routine dental care for low income and disabled elderly persons. With only 22 percent of the adults 65 years and older covered by private dental insurance in 1995, most dental care expenses for the elderly were paid out of pocket. Only 10 percent of dental expenditures were paid by private insurance, and 79 percent were paid out of pocket [22]. The importance of third party coverage is highlighted by the fact that older adults with dental insurance are 2.5 times more likely to

Xerosomia	Anticholinergics, antidepressants, anti-Parkinson's drugs, antihistamines/decongestants, urinary antispastics, antispsychotics, diuretics, hypnotics, systemic bronchodilators, muscle relaxants, methyldopa, laxatives, beta-blockers, narcotics, and clonidine
Intraoral Hemorrhage	Sulfonamides, quinine, quinidine, thiazide diuretics, allopurinol, methyldopa, antineoplastic agents, digitalis, heparin, phenytoin, coumadin, gold, cephalosporin, penicillin, and tetracycline
Taste Changes	Captopril, enalopril, griseofulvin, D-penicillamine, metronidazole, carbenicillin, chlorhexidine, diltiazem, chloral hydrate, gold salts, flecanide, lithium, vitamin D, and sulfasalazine
Candidia albicans	Broad spectrum antibiotics, antineoplastic agents, corticosteroids including aerosol MDIs, and immunosuppressive agents
Gingival Overgrowth	phenytoin, nifedipine, cyclosporin A
Stomatitis	Melphalan, thiopeta, doxarubicin, epirubicin, idarubicin, busulfan, procarbazine, dactinomycin, mitoxantrone, methotrexate, flurouracil, cytarabine, etoposide, gemcitabine
Ulceration/Necrosis	Aspirin, phenylbutazone, indomethacin, silver nitrate, hydrogen peroxide, isoproterenol, phenols, acids or alkalis, and potassium chloride

Table 1: Effects of different medications on oral health of older adults.

make regular dental visits, significantly more likely to be dentate, with more natural teeth remaining, and to hold more favorable oral health beliefs [23]. These findings suggest that providing older adults with dental insurance (whether this is private coverage or Public) may serve as an enabler of dental service utilization.

What does the future hold for the oral health of elders?

The trend in improved oral health status among persons 65 years of age and older is expected to continue, as the new cohorts of older persons continue to be better educated, more affluent, and more likely to keep their natural teeth [6]. This positive change in oral health status shows that oral diseases and tooth loss are not inevitable with aging, and that teeth can be expected to last in good condition for all of a person's life. As more people keep their teeth, more will be at risk for dental diseases and will need more preventive, restorative, and periodontal services. Considering that dental caries and periodontal diseases, the most common oral health problems, are cumulative, older persons often endure the consequences of their oral health experience from earlier years, such as missing teeth, large fillings, and the loss of tooth support. These problems can be complicated by their decreased ability to care for their oral health. The elderly may also have multiple physical and psychological ailments that affect their treatment and require the dentist to have good medical knowledge and management skills. Unfortunately, financing dental care for older persons is particularly difficult compared with other age groups, in part, because there is no Federal or State dental insurance programs that cover routine dental services and only 22 percent of older persons are covered by private dental insurance. Consequently, dental care is unreachable for many older persons living on a fixed income. Furthermore, there is noticeable social inequality in the oral health of older adults. Older persons who live below the poverty line were almost 3 times as likely to report unmet dental needs as those who live at or above the poverty line (11 and 4%, respectively) [24]. Persons from lower socioeconomic groups are also more likely to report having untreated cavities [25]. The greater need for dental care among older persons at low socioeconomic levels is coupled with their lower level of private insurance coverage, which leaves this group at a significant disadvantage compared with those at a higher socioeconomic level.

One additional challenge to caring for older persons is that the actual number of practicing dentists and the proportion of dentists relative to the population are expected to decline [26]. The decline in the dentist-to-population ratio will particularly affect the elderly because they are the fastest growing segment of the population and because their special needs will require specialized dental skills. Optimally, the elderly should receive care from specialists in geriatric dentistry or general dentists with a good understanding of the medical, pharmacologic, and cognitive changes associated with the older adult population.

Older patients and care givers as barriers: if you built it, they will come?

There is a widespread belief among community health providers and elders themselves that they would be more likely to use dental services if the clinics were located nearby, or delivered directly via mobile units, or were less costly. Indeed, surveys of community-dwelling older adults in the 1980s reported that respondents wanted dental treatment but had difficulty climbing stairs and could not find dentists with ground floor offices [27] or that mobility problems prevented up to 30 percent of elders from obtaining dental services [7].

Even in more recent surveys, such as one conducted in a community north of London, 52% of housebound older adults who participated in the study reported that they preferred to receive dental care in their own homes and complained of inadequate transportation options to dental providers. The overwhelming number of these frail elders (93%) said they only made a dental visit when they had dental problems, but 86 percent perceived no need [28].

Conclusion

Health promotion has become an important means of improving older adults' behaviors in a variety of areas, including exercise, weight loss, management of diabetes, and hypertension. Unfortunately, it has received less attention in dentistry except for some early efforts twenty or more years ago. With the rapid advances in materials and methods for home-based oral hygiene and materials and techniques in dental practice, it is important to educate the general population on an ongoing basis.

There should be increasing numbers of Advanced Education in General Dentistry for graduated and post graduate dental students. These programs could focus on providing dental care on door steps through satellite centers, mobile dental units to underserved populations. Another way to increase oral health care to older adults is through interdisciplinary training to physicians, nurse practitioners, nutritionists, and pharmacists in addition to dentists and hygienists would increase the frequency and amount of oral health information provided to elders. Finally, it will lead to lessen oral health problems among future cohorts of elders.

Take Away Points

- Oral health has a critical role in an older person's general health and well-being. It is imperative that this relationship is not overlooked.

- Due to the rapid advances in material and methods for home-based oral hygiene, there is a need for programs focused on current and on-going education for the general public.
- Furthermore, even though all age groups would benefit from oral hygiene education, programs designed for younger cohorts could decrease oral health problems among future generations of elders.
- Promoting oral health care should take place at dental colleges through clinical programs that cater specifically toward older populations. These programs could potentially offer supplemental or advanced education to students and graduates.
- Lastly, increasing oral health awareness could be facilitated by way of interdisciplinary training clinics to health professionals increasing the frequency and amount of oral health care information provided to elders.

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