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Geriatric health care– Review article

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ABSTRACT

People aged 65 to 74 years are the new or young elderly who tend to be relatively healthy and active; People aged 75 to 84 years are the old or mid-old, who vary from those being healthy and active to those managing an array of chronic diseases; People 85 years and older are the oldest-old, who tend to be physically frailer. According to the WHO, the global population is increasing at the annual rate of 1.7 percent, while the population of those over 65 years is increasing at a rate of 2.5 percent. Physiologic changes have a cumulative effect as they relate to the continuum of biologic, psychologic, social, and environmental processes of aging. Changes occur for all people, tissues, and organs, however, these changes occur with differing rates and individual variability. The loss of elders' ability to function to capacity includes a decline in respiratory function and the inability to accommodate to temperature changes. It is important for the dental team to be aware of these changes; in particular when older adults are challenged by trauma, acute illness, or external temperature extremes. The central nervous system undergoes significant changes during the course of aging. Decreased response time is often seen in the elderly population, but there is a wide variation between individuals. The immune system becomes less competent with age. Lesions of the oral mucosa associated with wearing removable dentures may represent acute or chronic reactions to the constituents of the denture base material or a mechanical injury caused by the denture. In India, many people consume alcohol, bidi, cigarettes, and Gutkha, The major block in the oral health care of the elderly and the residents would be the underestimation of the oral health care need by them. The dental care of the residents is often limited to emergency care and is not aimed at retaining teeth. Conversely, with changing attitudes the oral health goal should include: Keeping their teeth, keeping their teeth healthy and keeping their teeth pretty.

Keywords— *Aging, Elderly, Oral health care, Physiologic changes*

1. INTRODUCTION

During the latter half of the 20th century, the age composition of the population changed dramatically, with more people living to older ages and the older population getting older. This demographic change will have a major impact on the delivery of general and oral health care, as well as on the providers of these services. Although some older adults have physical and/or psychological conditions that require special attention in the dental office setting, one should not assume that all older people share these conditions. Yet, the greatest challenges in geriatric care focus on the oldest, sickest, frailest, as well as those with multiple medical and/or psychological problems. In order to be best prepared for the future practice of dentistry, oral-health professionals need to be knowledgeable about the general and oral health status of older adults, the physical changes associated with aging, and how best to optimally address these issues.[1,2]

1.1 The "elderly" segment of the population

People aged 65 to 74 years are the new or young elderly who tend to be relatively healthy and active; People aged 75 to 84 years are the old or mid-old, who vary from those being healthy and active to those managing an array of chronic diseases; People 85 years and older are the oldest-old, who tend to be physically frailer. This last group is the fastest-growing segment of the older adult population.[3]

1.2 Demographic Changes

According to the WHO, the global population is increasing at the annual rate of 1.7 percent, while the population of those over 65 years is increasing at a rate of 2.5 percent. Both the developed as well as the lesser-developed countries are expected to experience significant shifts in the age distribution of the population by 2050. The fastest growing population segment in most countries is the adults older than 80 years, which according to the United Nations estimates will make up nearly 20 percent of the world's population. In India, with its population of over one billion people, people older than 60 years constitute 7.6 % of the total population, which amounts to 76 million.40% of the elderly live below the poverty line and 73% are illiterate. 90% of the elderly have no social security and dependency is high. The incidence of oral cancer, which is an old age disease, is highest in India.[4,5]

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2. HEALTH PROBLEMS OF THE AGED

2.1 Problems due to the ageing process

The "biological age" of a person is not identical with his "chronological age". Nobody grows old merely by living a certain number of years. Years wrinkle the skin, but worry, doubt, fear, anxiety and self-destruct wrinkle the soul. The aging process may then be defined Sas the sum of all morphologic and functional alterations that occur in an organism and lead to function impairment, which decreases the ability to survive stress.[6]

2.2 Physiologic changes associated with ageing

Physiologic changes have a cumulative effect as they relate to the continuum of biologic, psychologic, social, and environmental processes of aging. Changes occur for all people, tissues, and organs, however, these changes occur with differing rates and individual variability. Variations occur at every age and in every part of the body. The four characteristics of physiologic aging are: universal, progressive, decremental, and intrinsic.

The major results of the aging process are:
a) A reduced physiologic reserve of many body functions
b) An impaired homeostasis mechanism by which bodily activities are kept adjusted (i.e., fluid balance, temperature control, and blood pressure control);
c) An impaired immunologic system, as well as related increased incidence of neoplastic and age-related autoimmune conditions.

The loss of elders' ability to function to capacity includes a decline in respiratory function and the inability to accommodate to temperature changes. It is important for the dental team to be aware of these changes; in particular when older adults are challenged by trauma, acute illness, or external temperature extremes. In each of the incidences, older adults tend to be less able to maintain a stable, internal physiologic state. The dental practitioners tend to maintain their office at a cool temperature. The decline in an older persons' baroreceptor function may cause the person to feel cold. This can impact their postural reflexes, causing the patient to be susceptible to orthostatic hypotension. In addition, it is helpful to keep a blanket in the office to keep patients comfortable. The cardiovascular system of older adults tends to be more likely to develop ischemia, arrthymias, and heart failure, especially when the concurrent illness is present. With increased exercise and/or stress, there is an increase in cardiac output. For older adults, the work of the heart is increased as blood is pumped through a less compliant arterial system. Slight increases in systolic blood pressure are not unusual for those in older age groups, however, one must ensure the pressure stays within acceptable values (160/95 mm Hg) Systolic hypertension is a strong risk factor for stroke and heart failure, and warrants treatment if it remains consistently elevated over 160 mm Hg, regardless of age. Diastolic blood pressure is not known to change with older age. Although both blood pressure lability and the prevalence of "white coat hypertension" are increased in the elderly.[7,8,9]

Age-related eye changes are common in older adults. The majority of older adults experience presbyopia or age-related changes in the lens and iris of the eye. Persons with presbyopia have difficulty focusing on near objects, often requiring the use of reading glasses. In addition, those with presbyopia experience a greater loss of dynamic visual acuity (viewing objects in motion) than in static acuity. Hearing impairment is common over the age of 60; with a prevalence of 25 to 30% among community-dwelling elders and close to 70% in residents of long-term care facilities.[10]

Presbycusis is the most common type of hearing the loss in older adults and is caused by both pathology and, in some cases, auditory processing. Presbycusis causes gradual, progressive bilateral hearing loss, predominantly in the higher frequencies, as well as a decline in speech discrimination. Both atherosclerosis and cumulative noise exposure may contribute to presbycusis. Communication with an individual affected by presbycusis is enhanced by slow, distinct vocalization at a low pitch. Shouting can actually be painful to the patient and does not improve the ability to understand what is being said. Bone remains metabolically active throughout life. The age-related bone loss is extremely common, reflecting an imbalance between bone resorption by osteoclasts and bone formation by osteoblasts. Osteoporosis, a common problem in the elderly, is an age-related disorder characterized by a decrease in bone mass and by an increased susceptibility to fractures. Losses in bone mass with advancing age are multifactorial, including inactivity, estrogen deficiency, nutritional deficiencies, and age-related changes. Clinically, advanced osteoporosis can present with chronic back pain, from mechanical strain caused by kyphosis or vertebral compression fractures.[11,12]

Recent studies indicate that changes in alveolar bone as a result of osteoporosis may contribute to the progression of periodontal disease. Also, a significant decrease in bone mass of the mandible may lead to fragility and increased resorption, the risk of fracture, and failure of osseointegration of implants. Prevention, rather than treatment, is the key to the management of osteoporosis. Exercise, vitamins, a balanced diet, dietary calcium, and estrogen play a role in the treatment and prevention of osteoporosis.

The central nervous system undergoes significant changes during the course of aging. Decreased response time is often seen in the elderly population, but there is a wide variation between individuals. The immune system becomes less competent with age. However, the degree of deficiency is not severe enough that opportunistic infections occur commonly in the elderly population. It is the responsibility of the dental team to be aware and to address the commonly seen age-related changes of aging. Both modifications of office design and patient management techniques should be best incorporated in the dental practice.[13,14]

With the passage of time, certain changes take place in an organism

- Changes in mental outlook

2.3 Health Status of the Aged

The study of aging includes not only diseases that cause morbidity and mortality but also the conditions that cause disability and decline in independent functioning the three leading causes of death in the elderly are:

- Diseases of the heart
- Malignant neoplasm (cancer)
- Cerebrovascular disease (stroke)

Eliminating deaths caused by heart disease would add an average of 5 years to life expectancy at age 65 and would lead to a marked increase in the proportion of older persons in the population.

Yet, if cancer as a cause of death were eliminated, the average lifespan would be extended by less than 2 years. The most common chronic conditions are arthritis, hearing impairment, hypertension, and heart disease. The majority of health conditions and diseases are the result of the accumulation of one's lifestyle, genetic factors and environmental conditions.[15]

2.4 Oral Health Status of Aged in India

Mouth dryness and dental caries have been attributed to the reduced salivary flow. Salivary glands are influenced largely by certain systemic diseases and their pharmacologic treatment. The single most common disease affecting salivary glands is Sjogren's syndrome, an autoimmune exocrinopathy predominantly occurring in post-menopausal women.

Oral mucosa becomes increasingly thin, smooth with age and that it acquires satin like edematous appearance with loss of elasticity and stippling. The tongue, in particular, is reported to show marked clinical changes and to become smoother with loss of filiform papillae. With age, there is a tendency for development of sublingual varices and an increased susceptibility to various pathological conditions such as candidal infections and a decreased rate of wound healing.[16]

Periodontal diseases are among the most prevalent chronic conditions in dentate older populations. Several epidemiological surveys have found that the prevalence and severity of periodontal diseases increase with age. Periodontal disease in the elderly does not appear to be a specific disease but the result of a chronic adult periodontitis since adulthood although age-related changes have been documented in the periodontium of elders, these changes do not appear to be the cause of periodontal disease in the elderly. The enhanced severity of periodontal diseases with age has been related to the length of time the periodontal tissues have been exposed to the dentogingival bacterial plaque and is considered to reflect the individual's cumulative oral history. However, the susceptibility of the periodontium to plaque-induced periodontal breakdown may be influenced by the aging process or by the specific health problems of the aging patient.

Deciding the treatment and determining the prognosis are influenced by various systemic and local factors as well as the person's previous experience with dentures. The most important determinants are; Nutrition: it is clear that the chewing efficiency influences human eating patterns or the nutritional quality of the diet. Nevertheless, elderly people are very often deficient in one or several nutrients. Dentists should, therefore, be prepared to assess the nutritional quality of the diets of the prosthetic patients and to guide them toward good nutritional practices.[2]

Debilitating diseases: Systemic diseases, such as gastrointestinal disorders, diabetes mellitus may enhance the symptoms and signs of debility. As a consequence, people often totally neglect oral and prosthetic care. This situation may have serious implications in providing satisfactory dental care. Thus, prosthetic treatment should be postponed until the person's general health is restored.

2.5 Oral physiological changes

Progressive atrophy of the masticatory, buccal and labial musculature is a sign of aging.

In the denture wearer, however, this process is often accelerated. Atrophy of the masticatory muscles may severely reduce chewing efficiency, which cannot be sufficiently improved through prosthetic treatment. Instead, it is important to advise the person on how to attain an adequate diet that is easy to chew.

2.6 Alveolar ridge atrophy

It is a continuing process of reduction of the edentulous alveolar ridge that takes place at varying rates in different individuals. The best way of preventing this is to maintain some teeth or roots in the jaws to support a removable denture. In the edentulous patient, treatment with an implant-supported fixed or removable prosthesis can prevent further bone loss.

2.7 Oral mucosal lesions

Lesions of the oral mucosa associated with wearing removable dentures may represent acute or chronic reactions to the constituents of the denture base material or a mechanical injury caused by the denture. Thus, the lesions constitute a heterogeneous group with regard to pathogenesis and include denture-induced stomatitis, angular cheilitis traumatic ulcers etc.
To minimize the extent of the lesions denture wearers should be recalled regularly for checkups on the oral mucosa and dentures.[11]

3. DISEASE OF GUM AND LOOSE TOOTH

- The tooth is fixed to the jaw with a tissue called periodontal ligament and jaw is covered with Gum.
- Microorganism cause destruction to periodontal ligament and bone that holds the tooth. This causes loose tooth and painful bleeding gums**.**

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3.1 Tooth loss

Forceful brushing habit, chewing of betel nut and few other habits may cause loss of few surfaces of the tooth. Even loss of the whole tooth occurs with ageing till all teeth are lost**.**

3.2 Denture related problem

Elderly people with loss of all teeth wear dentures (a set of artificial teeth).
Improper handling may cause a few denture related problem.
Burning sensation, numbness. Food accumulation, bad breath. Loose denture. And reduced ability to chew and speak**.**

3.3 Cancer of mouth

In India, many people consume alcohol, bidi, cigarettes, and Gutkha, in old age the protective capacity of the body decreases which leads to cancer, especially of mouth.

3.4. Preventive dental care for elderly people:[1,5,8,11,13]

The design and implementation of comprehensive preventive dentistry protocols for elders present the dental profession with many challenges. Although a specific protocol must be tailored to meet the unique needs of the individual patient, there are certain factors common to the elderly segment of the population that may influence these protocols.

3.5 Need for preventive services

Problems of providing preventive dental care for elderly people: The many factors that are known to influence older people's utilization of dental services directly or indirectly can be divided into four main categories.

1. Illness and health-related factors.
   - Oral health status.
   - General ill health.
   - Mobility, functional limitation.

2. Socio-demographic factors.

Place of residence, Education, Income, Age, Sex, Culture, Ethnicity.

3. Service-related factors.

- Accessibility.
- Dentist behavior.
- Dentist attitude.
- Price of service
- Satisfaction with service.
- Transport.

4. Attitudinal or subjective factors.

- Personal Beliefs.
- Feeling no need, perceived need.
- Perceived importance.
- Fear and anxiety.
- Resistance to change.
- Perceived financial strain.
- Satisfaction with dental visits.

3.6 Long-term care

Long-term care refers to health, social and residential services provided to chronically disabled persons over an extended time The delivery of oral-health-care to residents in long-term care facilities or for those who are homebound presents special challenges for the professional. In addition to the mode of care delivery, this patient population tends to be frail, functionally dependent and often lacking any level of self-interest in their oral health.

Cognitive declines, lack of motivation, physical impairment, and chronic medical problems all contribute to a decrease in self-care ability and increase the risk of oral disease. This population has been characterized as having high levels of edentulism, coronal and root caries, poor oral hygiene, periodontal diseases, and soft tissue lesions.

4. ORAL HEALTH SERVICES IN INDIA[15,16]

4.1 Oral health services in India are rendered through:

- Government and private institutions
- Private practitioners
- Professionals employed by the government, e.g. dentists in defense services
- Dental services are also being rendered in district hospitals and in a nursing home with dental wings etc.
- The distribution of dentist to meet population requirements is grossly uneven.
- The dentist population ratio in rural India is 1:3,00,000.
- Eighty percent of dental professionals dwell in urban areas and render services to just 30% of the urban population, whereas the remaining 70% of the rural population is left with meager dental services

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The oral health care of necessity is being delivered through primary health care infrastructure because of limited resources and manpower. Additionally, health care services are being rendered in tertiary level hospitals, nursing homes, and private sectors; however, these services are poorly organized. There is an unavailability of dental surgeons as well as essential facilities at primary health centers and community health centers in most of the states. Except those in organized sectors like in government jobs, railways, and defense services, the majority of the elderly population has no health security. Dental treatment is expensive in the private sector and considered optional by the majority of the elderly and their care providers. Besides, health insurance companies do not reimburse expenses on dental treatment.

5. CONCLUSION

The major block in the oral health care of the elderly and the residents would be the underestimation of the oral health care need by them. The dental care of the residents is often limited to emergency care and is not aimed at retaining teeth. Conversely, with changing attitudes the oral health goal should include: Keeping their teeth, keeping their teeth healthy and keeping their teeth pretty. The best option to serve the residents would be "Home dentistry or Domiciliary dental care," however it is yet an infrequent practice in India. Surveys should be conducted in this sector very routinely to spot the residents in the need of oral care circumscribing nursing homes, old age homes, ashrams, secure units, and community households.

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