Oral Health Care in the Elderly Population in Malaysia – A Review

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Summary

One of the undeniable facts about living is that everyday we are getting older. By 2050, it is projected that one out of every five Malaysians will be 60 or older. The economic challenge of this demographic change will affect development and the financial implications of sustaining well being of this group are formidable and complex. This population group has extensive oral disease, medical problems that complicate their oral care, and unique dental treatment challenges. The authors discuss the problem of oral healthcare among the aged, its impediments and propose some approaches for improvement to better serve the needs of this group of vulnerable members of our nation.

Key Words: Quality of Life, Geriatric dentistry, Health, Elderly

Introduction

The twenty first century has witnessed dramatic changes with regard to the health, disease, longevity, and mortality of the world population. We are becoming an aging society. In 1900, 4 percent of the world population (3.1 million people) was 65 or older; and by 1998 that number had grown to 12 percent (34.3 million)[1] It is estimated to increase to 20 percent by 2050. According to a WHO report, in the year 2000, the population of the elderly in Malaysia, which includes people of age 60 or older was 1.5 million or 6 percent of the total population. The number is growing rapidly and is estimated to increase to about 3.6 million or 11.5 percent of the projected total population by the year 2020. The frail elderly are predominantly female and over age 75, outnumbering men two to one. Not surprisingly, many of the frail elderly are alone, having outlived spouses and sometimes their children.

Oral problems have a negative effect on quality of life[2]. Problem with the teeth and mouth can affect the ability to eat and communicate. Diet, nutrition, sleep, psychological status, and social interaction are all affected by impaired oral health. Dental disease also has a significant impact on general health.

To understand an individual patient's attitudes, one must evaluate the cultural, psychological, educational, social, economic, dietary, and chronologically specific cohort experiences that may have influenced that patient's life. Similarly, oral status is affected by these same factors and is the sum of an individual's life experiences with oral healthcare, as well as with caries, periodontal disease, and iatrogenic disease.

The Impact of Aging on Oral Health

The burden of oral health problems has considerable social impact on older people's day to day lives, ranging from minor pain and discomfort through to severe limitation in performing everyday activities.

The loss of one or more teeth as a result of disease can predispose to further tooth loss,[3] destruction of alveolar

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bone[4], dependence on and compromised function of prosthetic replacements,[5] and mucosal disease. The same oral diseases that lead to tooth loss also cause tooth sensitivity, pain and impair chewing and speaking ability. In addition, lesions of the soft tissues of the mouth can interfere with mastication and can affect nutritional status[6]. Oral cancers such as squamous cell carcinoma can cause extreme disfigurement and even death[7]. Systemic disease may directly or indirectly harm the oral cavity by altering saliva flow, which plays an essential protective role in the mouth[8]. The effects of oral diseases are not limited to the oral cavity. Oral diseases can release blood-borne bacteria or cause bacteria to be aspirated into the lungs, bringing about severe, even life threatening consequences[9].

The dental treatment needs of the elderly today differ from that of the same age group of 40 years ago. Shay[10] reports that in 1957, 70 percent of adults over age 75 were fully edentulous, while today the number has dropped to less than 40 percent. This means that 40 years ago, most dental treatment for older adults involved making and repairing complete dentures. Today, the picture has changed dramatically, with far more natural teeth present, and significantly different attitudes towards oral health and dental care among newer cohorts of the elderly.

Dental caries[11] and periodontal disease[12] are the most prevalent of dental conditions that may affect the elder population and their impact is an on-going factor in their lives. Conditions such as edentulism[13], salivary hypofunction[14] and oral cancer[15] can also have considerable impact for a proportion of these individuals.

A major impact of systemic disease on the oral health of older adults is caused by the side effects of medications[16]. Besides the desired therapeutic outcome, adverse side effects may alter the integrity of the oral mucosa. Problems such as xerostomia, bleeding disorders of the tissues, lichenoid reactions, tissue overgrowth, and hypersensitivity reactions may occur as a result of drug therapy. There is research[17] suggesting a possible link between cardiovascular and periodontal diseases, but more study is needed to clarify the findings. Cancer treatment[18] including chemotherapy, radiation and surgery can cause severe stomatitis, xerostomia, disfigurement, altered speech and mastication, loss of appetite, and increased susceptibility to oral infections, including those that cause caries and periodontal diseases. Stroke, pulmonary diseases, and diabetes are also common among the elderly. In addition to these conditions, impairments in hearing, vision, and orthopedic functions are the most common impairments among the elderly, and each has consequence for maintaining oral health[19].

Aging has an impact on oral tissues[20] just as it has on tissues throughout the body. As teeth age, the enamel, dentine and pulp undergo progressive changes. All these changes in the teeth have implications for the various dental restorative procedures. The aging of the teeth affects the design of cavity preparations, the choices of restorative materials, and the anatomy and aesthetics of the final restorations. The radiographic appearance of teeth is also affected by aging, requiring modified interpretations and diagnosis.

It is not just the teeth and other oral tissues that change with age and have an impact on the special needs of the elderly. With increasing disability, functional impairments and declining cognitive functions in the elderly, the dental team is faced with important ethical and legal issues that have an impact on oral diagnosis, treatment planning, and how oral health care is actually provided. Shuman[21] reviews a number of these key issues and offers guidelines for addressing them.

The Impediments to Maintaining and Improving Oral Health of the Elderly

At a time when dentistry is able to provide implants, aesthetic veneers, and other "high-tech" treatments that would have been unimaginable only a few years ago, large segments of our population, including the frail elderly, lack access to necessary basic care.

Oral disease continue to be widespread and unchecked among functionally dependent older adults[22]. Most dental school interactions are not with compromised patients and there are very few opportunities for students to work with patients in nursing homes or do mobile dentistry and visit home-bound individuals. Often a course in geriatrics is taught as an elective, so only a portion of the dental student body is exposed to it. Regardless of repeated epidemiological evidence of the increasing oral health need and demand of the older patient, the majority of dental schools worldwide still report no geriatric clinical component [23].

Inadequate facilities and equipment to care for the home-bound and the institutionalized create a

significant dental access barrier. Lack of basic portable equipment such as portable high and low speed drills, portable X-ray equipment, and common dental supplies creates a significant barrier to primary oral healthcare. Traditional delivery systems characterized by permanent offices and immobile equipment cannot adequately meet the needs of this group.

Physicians, nurses and nurses' aides have regular contact with home-bound and nursing home residents. But, training to recognize oral problems, oral lesions or oral sequelae of chronic systemic conditions and the medications to treat these conditions is limited. The potential for misidentification and underreporting of oral health problems is difficult to ignore.

Lack of knowledge and low expectations among the elderly about oral health and its value can result in care being deferred or neglected entirely. Among the elderly living independently, the most commonly cited reason for not seeking dental care is a lack of perceived need[24]. Seeking help for a dental problem is less likely when there is a belief that tooth loss is inevitable or oral problems are part of aging process. Family and caregiver's negative attitude may also limit access to care.

Knowledge about oral healthcare among the mass is increasing over time. Each age cohort is different from the other[25]. As the number of aging Malaysians continue to rise, dentists will be working with more elderly patients in their everyday practice and will be seeing greater number of patients who demand for quality dental care. Many have higher expectations about maintaining and preserving the natural teeth and have better financial resources to fulfill their expectation. It is of utmost importance for oral health professionals to be well trained, understanding, compassionate, and to be aware of the special needs of this mature population.

Barriers to oral health care in adult population include availability, accessibility, affordability and acceptability. Additional barriers include the functional and medical status of the individual, previous patterns of dental treatment utilization, lack of knowledge, and fear. Dentists' attitude towards the treatment of older patients can also create barriers. We must be aware that the time is fast approaching when the demand for geriatric care will far exceed the number of dentists currently willing and able to provide such care.

As major players in the field of health care, what do we offer governmental and community planners as options to the tripling of our elderly population? Do we advice them to triple the number of nursing homes? Educate three times as many nurses? Three times as many dentists? There must be better options.

Approaches to Improve

Improved oral health will lead to improved quality of life through increased personal dignity, improved nutrition, better appearance, greater cleanliness, and greater comfort or relief from pain. But meeting the oral health needs of the elderly adults require new approaches to dental treatment planning that take into consideration their special needs.

Burg, Garcia and Berkey[26] have described a process called "spectrum of care treatment planning". This model emphasizes essential steps in clinical decision making for both patient and dentist. This process addresses four domains of subjective and objective needs: function, symptoms, pathology and aesthetics. Eliciting this information may require considerable skills as the older patients are often completely unaware of pathology that would otherwise create dramatic symptoms in younger patients. This is in contrast with a popular misconception that the elderly are prone to exaggerate their healthcare complaints. The next step in treatment planning is the objective assessment of the patient by the dentist so that all possible treatment options are explored fully.

A thorough medical history must be integrated with the oral health findings while dental treatment options are developed. In addition, the dentist must assess the patient's ability to tolerate the potential stress of treatment. The dentist must also evaluate the patient's functional capability and resources for maintaining oral health. All risk factors that could cause treatment failures need to be assessed.

In geriatric treatment planning, the focus should be on identifying levels of care and seeking a level of care that is optimal for the patient, given all the factors that have been assessed. The goal of geriatric treatment planning is to seek the highest level of care that is appropriate and necessary to maintain the individual patient's oral and general health. The final step in treatment planning is reviewing the treatment options with patient and/or their caregivers. The principles of informed consent[27] and patient autonomy must be clearly understood by the dentist, and agreement must be reached before treatment is started.

The use of fluoride offers probably the greatest scope for intervention designed to prevent dental caries among all age groups. Existing efforts to promote the fluoridation of public water supplies[28] should be maintained and extended where possible. Enabling individuals to maintain good oral hygiene is an important preventive strategy for reducing gingival inflammation particularly for dependant older people and others who may have problem maintaining adequate self-care. Aids such as electric toothbrushes are a useful strategy for individuals with decreased dexterity and visual acuity, but the initial outlay for these may be beyond the reach of some. Dietary modification[29] suitable to the oral condition is another health promotion strategy among the elderly.

Many old adults can be seen at a dental clinic, provided that they are mobile and the clinic is accessible and senior friendly. While most dental clinics are suitable for children and adults, some modifications are needed to accommodate the frail elderly adult[29]. Functionally dependant older adults are often best served by bringing dental service to them rather than transporting them to the dental clinic.

The provision of on-site dental care[30] involves not only dental staff but also nursing staff, primary care physicians, patient representatives, and third party payers who each have important roles to play. In addition, on-site delivery systems must assist in establishing preventive programs, provide education for nursing staff, and participate actively in the medical-dental management of medically compromised patients. They should have in place, and ensure continued use of, oral care policies, the goal of which is to provide these institutions with a required set of services and materials to ensure that the oral health of residents does not deteriorate.

New agreements and regulations are needed to clarify dental and nursing staff responsibilities and assure ethical and legal compliance. New methods of communicating, care planning, record keeping, and scheduling are needed for on-site teams to function smoothly. To maintain and improve quality, new team management structures, levels of accountability and management information systems are essential. On-site providers must provide documentation that meets the needs of the nursing home and can be incorporated into the medical records. Interpretation of dental records and typical follow-up orders should be included in the training of nursing personnel. Visits must be scheduled with sufficient frequency to keep facilities up-to-date while effectively utilizing the time of dental personnel. Non-dental personnel in the long-term care setting are critical in identifying their residents' oral health needs and connecting them to dental personnel who can address those needs.

The contribution of the interdisciplinary care planning team are valuable adjunct in the provision of appropriate oral healthcare to the functionally dependant adult. Physiotherapists can evaluate existing function and make recommendations regarding the resident's oral self-care ability. Social workers can provide insights into family interactions and discharge potential. Physicians and nurses can provide critical information about the resident's medical condition and nursing interventions. These professionals should be made to understand the importance of oral health care to general health, stress that oral disease can exacerbate other health problem, and dispel the misconception that oral disease and tooth loss are unavoidable part of aging.

Because oral health problems are increasingly linked to general health pathologies there is clearly a need to include dental benefits under insurance coverage or other government/private sector aids, extending past retirement into old age. It is well known that people with coverage tend to utilize more preventive services than those without. Policies and guidelines should provide benefits that are appropriate and necessary to maintain the health of the recipient[31].

The health care providers and caregivers should be given training at all levels, including both didactic and hands-on. Further, the training experience must be long enough and of appropriate intensity that trainees feel comfortable providing the care. Inter disciplinary training in the learning environment fosters inter disciplinary collaboration in the work place.

Health education material which is directly relevant to older people needs to be available. It must be remembered that health education approaches in isolation are unlikely to be effective[32]. They need to be part of an overall health promotion strategy.

Conclusion

As the population ages and an increasing proportion becomes functionally dependant, there will likely be an increase in under treatment of caries, periodontal

disease and partial and complete edentulousness. The threat exists for oral health to be compromised due to diverse medical, behavioral and financial factors.

An integrated approach is critical for the maintenance of an acceptable level of health for the elderly. Coordinated medical support is vital, as is support from the various dental specialties. Communication with family and other healthcare providers such as pharmacists, physiotherapists and caregivers is essential. An adequate number of trained and competent hygienist, dental assistants and administrators are also of paramount importance.

Adequate government funding and active participation need to be available to provide oral health care and training programs in geriatric care. Ideally, more extensive government policies should be implemented to allow reimbursement and delivery of oral health services to a functionally dependent elderly population unable to access oral healthcare services in the traditional manner. Dental schools must go beyond superficial references to geriatric concerns within both the undergraduate and graduate curricula and give this growing area of dental education and service the recognition it deserves by fully integrating geriatric dentistry into their programs. Perhaps, long term care facilities affiliated with a dental school should become academic and resource centers providing research and education in geriatrics.

Investigations are needed to determine various delivery options, specific treatment modalities and appropriate guidelines for care. Clinical trials of old and new dental materials are also needed to understand and demonstrate their effectiveness and to help understand the effects of aging on oral health. These strategies may help formulate policies that will land financial support to this growing section of the population and allow the necessary delivery of oral health care services for the elderly.

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For further reading, refer

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Multiple Choice Questions (MCQs)

1. Factors contributing to oral health problems in the elderly include
a. Edentulism
b. Salivary hyperfunction
c. Joint disabilities
d. Cardiovascular disease
e. Poor availability of oral health services

2. Lack of quality oral health care for the elderly may be due to
a. Mobile dentistry
b. Decreased exposure among dental students
c. Inadequate training of medical personnel to recognize oral problems
d. Lack of awareness of oral problems among elderly
e. Poor dental office facilities

3. Regarding aging of oral tissues
a. Includes changes in soft tissues only
b. Results in decreasing salivary secretion
c. Causes lichenoid reaction
d. Affects choice of restorative material
e. Demands modified diagnostic skills

4. Strategies to facilitate improved oral health care in the elderly may include
a. Individualized assessment of resources to maintain oral health
b. Reviewing treatment options with caregivers
c. Dietary modification
d. Provision of 'on site' oral health care
e. Increasing the number of dentists

5. Personnel involved in interdisciplinary care for elderly may include
a. physiotherapists
b. social workers
c. psychologist
d. physician
e. anesthesiologist