Need for Geriatric Dentistry Training Programs in Iran

Arash Poorsattar Bejeh Mir

Abstract: A shifting pattern from communicable diseases to the chronic noncommunicable diseases and increased life expectancy are being sensed throughout the world. Aged populations with multiple chronic diseases come up with their unique needs and require specific attention to be challenged by the health systems. Neglected orodental facts among the elders and the dearth of specific designated undergraduate and postgraduate courses of geriatric dentistry in Iran inevitably adversely affect the delivery of appropriate dental care service to elders by untrained dentists. In this article, a proposal for academic geriatric dentistry courses in Iran is introduced and highlighted with regards to elders' special needs.

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Today, Iran’s population exceeds 74 million. Located in the Mediterranean region limited to the Caspian Sea at north and Persian Gulf at south, Iran shares borders with Turkey and Iraq on the west and Afghanistan and Pakistan to the east. Iran is bordered by Turkmenistan, Azerbaijan, and Armenia on the north. It is estimated that 7,645,000 persons were living in Iran in 1880. Iran’s population, especially those sixty-five years of age and older, has grown remarkably in recent decades. Elderly people constituted 3.9 percent (751,607 persons) of the whole population in 1956 and had reached 5.1 percent (3,656,591 persons) by 2006 (Figure 1).1 It is expected that the population of those over sixty-five years in Iran will increase to 20-25 percent by 2050.2

Dependency rate is around 43.5 percent.2 This number has fluctuated over time mainly due to baby boomers, postponing of birth control programs, and the eight-year war in the country. One should note that the main constituent has changed from zero to fourteen years of age to an over sixty-five years of age population. A prospective of dependency rate related to over sixty-five-year-old population in 2040 is twenty-seven with a significant rise from the steady rate of seven during 2000-15. The mean annual rate of Iran’s population growth between 1956 and 2006 was 0.054 with a crude increase from 18,945,704 to 70,495,782 individuals. Meanwhile, the elderly population exceeded this rate by a mean annual rate of 0.077 with a 4.86-fold increase during the same period.1 The population pyramid of Iran has reversed in recent decades.3 By the midcentury, young and old people will constitute the total population with the same share (Figure 2).

Figure 1. Changing trend of population subclasses in Iran
attrition, and oral cancers should be addressed. Cervical and root caries are among the most common restorative problems. Aging increases the chances of losing a tooth as a result of periodontal disease, though the remaining number of natural teeth has improved in recent years. Physiologic xerostomia due to aging, depression, or neurologic problems enhances the probability of periodontitis and teeth to be missed. Moreover, a decreased ability in tasting may lead to depression and impaired quality of life.

Cigarette smoking and alcohol consumptions are two known risk factors for gastrointestinal (GI) cancers, especially upper GI. Fortunately, these are less frequent in Iran as a result of religious followings. Cautionary smoking habits with consequent oral cancers are increased among women. Further, contrary to developed countries, teenage and young adult smokers are increasing in developing countries. It is reported that the prevalence of current daily cigarette smoking is 12.5 percent (23.4 percent males and 1.4 percent females). The mean age of first attempts to smoke tobacco products is reported as low as age thirteen. An estimation of disability-adjusted life year (DALY) score for oropharynx cancers was 5,000 among sixty-plus year old population, while the total DALY score for all malignant neoplasms was 170,000 and DALYs for all causes were 1,542,000 in the year 2004 in Iran.

**Elderly Oral Health Complications**

Paralleled with recent advances in diagnosis, rehabilitation of medical problems, antibiotics, vaccination, and changing trends of mortality from contagious disease to the nontransmittable diseases, a significant increase in life expectancy is observed (men: seventy years, women: seventy-five years). General health and oral health are affected in a bidirectional manner. Among the highlighted oral complications of the elderly, caries, periodontal disease, xerostomia, and oral cancers should be addressed.

**Oral Health Status in Iran**

Total health expenditure, per capita, is 300 USD (50 percent of GPD), of which half is covered by the government. According to the latest World Health Organization report, from a total of 1,542,000 DALY scores, 13,000 scores were specified to the
oral and dental health problems among the sixty-plus year-old population in Iran in 2004 (i.e., caries: 7,000 periodontitis, and edentulism: 6,000). Other research from northern Iran reported a considerable prevalence of 60 percent edentulism among people aged sixty and over. It is noteworthy to mention that d/D (decays) component of DMFT scores constitutes the major part in developing countries such as Iran; meanwhile, F (filling) component is more prominent in developed countries. There are 1.9 dentists per 10,000 individuals.

No comprehensive research exists on elderly oral health in Iran. There are few reports from senior home residents' oral health status. Most recently reported is a respective rate of 44 percent and 86 percent stating dental and oral problems. The most self-reported complaint was dry mouth, and 56 percent were completely edentulous.

### Oral Health Delivery to Elders

Currently in Iran, the oral health delivery system is incorporated into the general health. Nevertheless, in addition to administrative problems, this special class of patients creates its own requirement and problems. There are four main organizations (i.e., social security, medical service, military personal insurance, and Emdade-Imam committee) providing health insurance to the people. These organizations do not offer a wide range of dentistry coverage, and no specific complementary dentistry insurance is provided that supports adequate coverage. A recently added insurance named “Golden Insurance” is available just for governmental employees. This covers a predetermined list of dental procedures. Fortunately, a screening program for preschoolers and toddlers is incorporated into the community-based dentistry course in which year six dentistry students visit kindergartners and recall them back in the dental school to follow and supervise the progress of their dental treatments in the case of positive findings during a first visit. Yet there is no systematic nation-wide screening program for the aged population in Iran.

More than two-thirds of individuals who are sixty-five-plus years of age suffer from at least one chronic illness. In a survey from Iran, 86.8 percent, 19.3 percent, and 9.5 percent of over sixty-year-old population had one, three, or four chronic illnesses, respectively. Movement disorders, stroke, Parkinsonism-induced dystonia, and impaired vision prevent efficient and adequate brushing or flossing. Medications, depression, and drug interactions may lead to reduced salivary secretion and xerostomia. Multi-drug medication is common, and drug interactions and their side effects, especially oral side effects such as xerostomia, should be considered. This should especially be noted when analgesics and antibiotics are to be prescribed. Dementia, impaired vision and hearing, and labile emotion adversely affect chair-side patient-clinician relation. High cost dental services with poor dental insurance coverage is a crucial obstacle for just and desirable delivery of health care. It has been found that there is a positive relation between having dental insurance and the frequency of dental visits. One must remember that multiple medications for systemic diseases may make elderly patients uncooperative to take the extra medications for the oral conditions or even turn them combative to these additive medications.

### Dental Education in Iran

At present, dental education in Iran consists of a six-year continuous program, which offers a D.D.S degree. It has three levels: basic sciences (two years) and preclinical and clinical courses (four years). The curriculum was established in 1988 and was revised in 2001 by the Ministry of Health and Medical Education. It includes general courses (twenty-two credits), basic science (forty-six credits), and specific dental courses (149 credits). More than twenty dental schools offer a D.D.S program, which is held by both public and semi-private schools. Many dental schools offer postgraduate programs in a wide range of specialty disciplines, and a few offer Ph.D., M.P.H., and fellowship programs.

The importance of the geriatric dental education in under- and postgraduate and continuing education programs was first proposed as early as the 1980s and 1990s. An updated comprehensive guideline was published in 1989 in the United States. In the United States, all dental schools mandate teaching courses for geriatric dentistry, and a considerable percentage of these schools provide clinical and field practical courses or geriatric clinic within their faculties. Currently, there are neither theoretical nor practical geriatric dentistry courses in either undergraduate or postgraduate levels in Iran. Previously, a four-hour theoretical gerodontology was taught in the fifth year, which has been removed based upon a new edition of undergraduate oral medicine reference (Burket’s Oral Medicine: Diagnosis and Treatment, 1989).
Conclusions

Good oral health is essential for maintaining general health, especially among the elderly population. In recent decades, designation of primary health care and reinforcement of oral and dental health services have significantly improved general health as well as oral health. Iran’s population is becoming older, and that is parallel to worldwide aging and a decreased fertility rate. In 1950, only 130 million people were over sixty-five years of age worldwide, and it is estimated that the elderly population will reach 1.4 billion (10 percent of population) in 2050.

Iran’s general population would be doubled by mid-century (2050), while the over sixty-five years of age population would see a sixfold increase. It is expected that those born between 1965 and 1986 will soon reach the age of sixty-five years between 2025 and 2045 (Figure 1). Notably, refugees from Iraq and Afghanistan should be kept in mind when a nationwide proposal on health topics is decided. According to the report of U.S. Committee for Refugees, Iran has the largest number of refugees living in its territory. In addition, with better screening programs and anti-retroviral therapies, a higher percent of patients with HIV/AIDS may reach the elderly years. Of course, this special category requires professional attention to meet their special needs. This means that dental care providers should be trained and educated regarding this specific chronic disease and related oral cavity burdens by either the disease or the consequent diseases or therapies. A better template could be obtained from Europe than the United States since the European countries are slightly ahead of the United States in terms of managing the elderly.

I conclude with the following suggestions. A proper undergraduate gerodontology program with both theoretical and clinical aspects should be designated. This may aid in improving attitudes and behavior towards approaching an elderly patient in the future. Incorporation of geriatric dentistry program as an adjunct into periodontics, restorative dentistry, and prosthodontics specialty programs may be considered. Specialty or fellowship of gerodontology may be incorporated into the current postgraduate program, as well as holding continuous medical education programs and workshops specified to geriatric dentistry for graduated dentists. It is wise to incorporate clinical and practical courses of gerodontology into the current community-based dentistry courses (currently, this course is presented in the sixth year and is mainly devoted to preschoolers’ preventive dental services), as well as senior home dental visits. It seems that oral problems in senior home residents are approached only when a complaint is reported. A U.S. report indicated that up to 70 percent of oral problems among residents of nursing home are unmet. Performing a pilot and sophisticated geriatric dentistry rotation in predefined schools over the country may broaden the scope of geriatric dentistry for both students and officers or coordinators. An updated nationwide research on the oral health of those sixty-five years of age and older and their needs should take place. A structured and divided province-by-province assessment program would provide the principal officers a better estimation. This approach may be more feasible at a lower cost. A practical chair-side psychiatry training considering how to approach and communicate with the elderly is recommended. This adjunct training would also serve specific patients, especially those with concomitant physical and mental disabilities. Allocation of a proper national annual budget for senior dental insurance is suggested. Establishing disabled and senior dental home would improve the delivery of health services to this group. An interactive educational program for daily oral care at a national level would ensure better oral care and perhaps lessen the burden of disease derived by oral problems.

No systematic and problem-oriented academic course dedicated to gerodontology is incorporated into Iran’s dentistry curricula to face the needs of this particular and significantly increasing subgroup of the population. A comprehensive program to extend and facilitate the delivery of oral health to frail elders should be promptly started, and a suitable budget should be specified for this purpose. According to this, screening programs as early as school entrance and later once he or she passes the age of sixty-five will be a suitable horizons for dental preventive programs and screening purposes. Such preventive approaches would help the health systems to lessen the subsequent heavy burden of remedial plans. Moreover, making competent and confident dentists to approach an aged patient in terms of medical, dental, and psychiatric knowledge indeed increase the quality of oral
health care being delivered. Of importance, this may be achieved via a quality academic training during dentistry school or by means of continuing education programs for graduated dentists.

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