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A Call for Integrating of Oral Health & Overall Health of Older Adults With or Without Through The 4Ms Structure to Improve The Quality of Life

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A B S T R A C T

Background: By 2030, all boomers (born between 1946 to 1964) will be at least age 65 or older adults1. The number of older adults, the generation of baby boomers in the USA, will increase to 74 million. Over 22 million (30%) of older Americans need specialized geriatric care2. The oral health of older adults is the most neglected aspect of healthcare by providers across healthcare disciplines. As the cost of Medicare and prescription drugs increases, dental care gets pushed back further. In addition, this generation is the first with the highest percentage of cultural and racial diversity (Table 1)3. This article aims to respond to the urgency of integrating essential oral health into the general health of older adults to fit their needs, considering their cultural backgrounds, health beliefs, and other health conditions. We ask the question, "Is dental education preparing the current and future dentists for the new landscape of healthcare required by the generation of baby boomers and beyond?"

Method: A literature review from 2010 to 2020.

Results: The dental education is not preparing young dentists to provide necessary care to medically vulnerable older adults. As a result, many older adults end up in hospital emergency rooms for non-traumatic dental emergency visits at a very high cost to the healthcare.

Conclusion: Dental education in many U.S dental schools may provide basic and conventional dental, yet it is far from educating oral health providers that are culturally sensitive and medically competent to provide care to medically vulnerable older adults and prevent the high cost of healthcare for older adults living in the United States.

Discussion

In 2025, a national shortage of medical geriatricians will be close to 27,000 full-time positions (Table 2)[4]. This shortage significantly impacts oral health, often due to limited access, affordability, and shortage of trained dentists to manage patients with special needs, particularly those with cognitive declines.

Table 1: Population 65 years and over by Nativity: 1960 to 2060.

	Total Population 65 years and over (number in thousands)	Native-born Population 65 years and over (number in thousands)	Foreign-born Population 65 years and over (number in thousands)	Percent foreign-born Population 65 years and over (number in thousands)
1960	16,207	13,029	3,178	19.6
1970	20,101	17,026	3,075	15.3
1980	21,701	18,720	2,980	13.7

1990	31,810	29,115	2,696	8.5
2000	34,992	31,660	3,331	9.5
2010	40,434	35,471	4,963	12.3
2020	56,052	48,034	8,017	14.3
2030	73,138	60,849	12,289	16.8
2040	80,827	64,268	16,559	20.5
2050	85,675	65,838	19,837	23.2
2060	94,676	72,652	22,024	23.3

Note: For more information on the ACS, visit <www.census.gov/acs>.
Source: U. S. Census Bureau 1960 to 2000 Decennial Censuses; American Community Survey; 2020 to 2060, 2017 National Population Projections.

Table 2: Baseline and Projected Geriatrician Supply and Demand by Region, 2013 and 2025.

Region	2013 Baseline Estimates (FTEs)			2025 Projections (FTEs)		
	Supply	Demand[a]	Difference[b]	Supply	Demand	Difference[b]
Northeast	1,050	4,920	-3,870	1,490	4,380	-2,890
Midwest	650	4,920	-4,270	1,040	4,470	-3,430
South	1,150	8,050	-6,900	2,150	8,280	-6,130
West	740	5,050	-4,310	1,540	16,070	-14,530

Notes: Numbers may not sum to totals due to rounding. All estimates are rounded to the nearest 10. A) Baseline supply and demand are not in equilibrium in the regions because regional demands were estimated by prorating national geriatrician; demand based on regional population characteristics (e.g., age, sex, household income, insurance status, health status, etc.); b) Difference = (supply-demand); a negative difference reflects a shortage (i.e., supply is less than demand), while a positive difference indicates a surplus (i.e., supply is greater than demand).

Nevertheless, as the aging population grows, chronic diseases associated with aging also increase, including conditions such as heart disease, diabetes, and cognitive decline. Immunosuppression-related diseases include arthritis due to a decline in cellular homeostasis during aging[5,6]. There is an urgent need for innovation for workforce enhancement nationwide. Integrating basic oral care in overall healthcare may create a comprehensive and person-centered[7]. Health providers network for older adults. Person-centered care (P-CC) aims to provide the appropriate care customized to each older individual's needs and preferences with the best possible outcomes. According to the "Institute of Medicine identified patient-centered care as one of the six pillars of quality health care and described it as "providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions." P-CC rather than Patient Centered[8]. The concept of P-CC is a gold standard of healthcare because it allows the person to be the driving force in all healthcare decision-making and clinical treatments, ensuring all their needs and values are met. The P-CC incorporates the person's needs and preferences entirely beyond the clinical or medical. Person-centered care can expand and shift a conventional healthcare model from one where the provider is the primary decision-maker to one that supports individual choice and preference in healthcare decisions. This is the only healthcare model so far that includes the individual's cultural background and health beliefs, leading to patient cooperation, collaboration, and meeting clinical expectations.

The scope of practice has been expanded for healthcare professionals[9,10]. Practicing dentistry is no longer limited to the oral cavity, as dentists are "oral health physicians" who must be knowledgeable of chronic health conditions to manage their patients appropriately and adequately. Similarly, physicians or all other health disciplines cannot ignore the impact of oral health on overall health conditions and medications[10,11]. To facilitate collaborations across disciplines, many studies indicate that creating an interactive educational platform may prepare students in the healthcare area with a collaborative mindset[9-10]. Sharing care is essential in treating the aging population, particularly needing special care for underlying health conditions. Only when we close or minimize the knowledge gap between oral health providers and other health providers we have an adequate workforce ready to serve the aging population.

Chronologically, the population in the United States maps a high percentage of foreign-born of the total population 65 years and over in 1960. But then the percentage continued to decrease for forty years until 2000. Immigration has historically played an essential role in shaping the United States, socially, economically, politically, and certainly in the healthcare landscape. Since 2000, a continuous increase in foreign-born Americans has occurred, leading to the highest number of foreign-born older adults aged 65 and older[3]. See (**Figure 1)**.

Enhance Training in Dental Schools. The Council on Dental Accreditation (CODA) defines people with special needs as individuals with developmental disabilities, cognitive impairment, complex medical problems, significant physical limitations, and the vulnerable elderly. The National Council on Disability (NCD) reported that more than 50% of dental schools did not equip their students with the competency to treat medically compromised individuals with special needs. Therefore, the CODA recently voted to require dental schools to train their students to manage treating patients with disabilities. Adequate training should also incorporate the evidence-based 4Ms model (what Matters most, Medication, Mentation, Mobility) so that dental professionals are aware of the needs of older adults[12].

This new healthcare landscape requires an innovative response to healthcare; oral health is no exception. To address and operationalize age-friendly care, the John A. Hartford Foundation, in collaboration with the Institute for Healthcare Improvement, supported an initiative known as the Age-Friendly

Health System. The 4Ms What Matters, Medication, Mentation, and Mobility framework promotes a person-centered approach to care and operates on the concept of treating the elderly as a whole person, including oral health[13]. See (**Figure 2**).

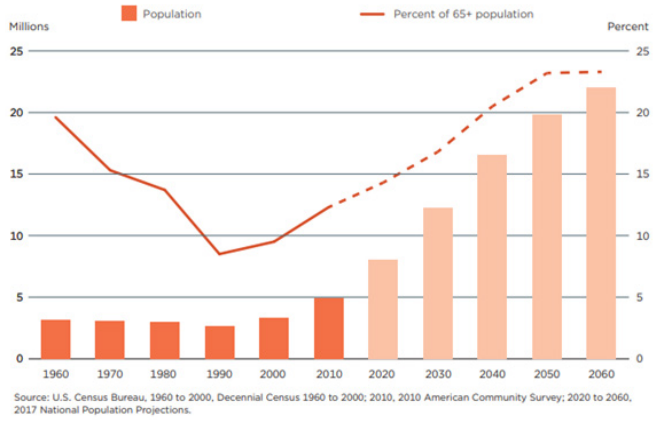

Figure 1: Foreign-Born Population 65 years and Over: 1960 to 2010 and 2020 to 2060 (Projected).

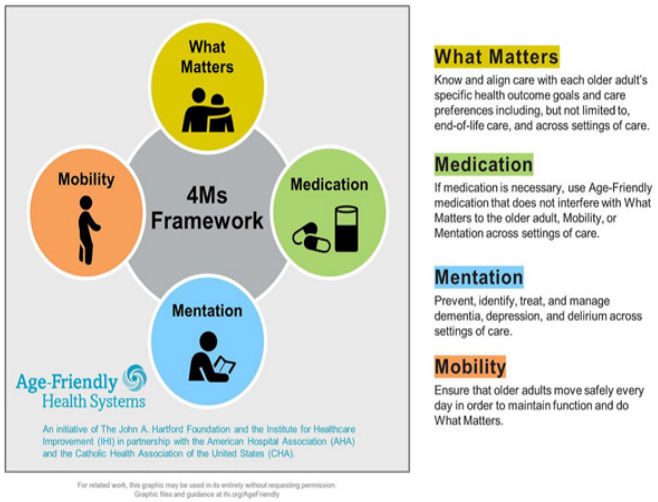

Figure 2: 4Ms Framework of an Age-Friendly Health System.

Much scientific literature supports an association or even direct casualty between chronic health conditions/medications and oral health. Thus, any healthcare provider needs to recognize abnormalities in the mouth and assist older adults to achieve total health.

To address the shortage of specialists in rural communities, Professor Sanjeev Arora, MD, developed a program delivery system with an impactful clinical education called Project ECHO, Extension for Community Healthcare Outcomes (ECHO). Project ECHO is a telementoring guided practice model that revolutionizes health education and increases the workforce to provide best-practice specialty care by reducing health disparities. Utilization of Project ECHO among community dentists makes transformation richly effective. Training oral health providers to utilize the project ECHO model is a logical response to the shortage and to increase oral health access. Project ECHO trains general dentists & dental hygienists to provide specialty care services. This means the elderly can obtain the care they need in the right place and time, with better treatment outcomes and reduced costs. The primary goal of Project ECHO is to demonstrate how a partnership of academic medicine, public health, corrections, and community health centers can foster the capacity of rural physician partners to provide safe and effective treatment[14].

Conclusion

Current dental education is insufficient for training general dentists to be a part of the health team to share care for older adults. Education lacks adequate integration in general healthcare, particularly for vulnerable older adults who are also considered as patients with special needs.

Recommendations

Dental education requires expanding into overall healthcare and medical knowledge to prepare the future generation of dentists as oral health physicians. Interprofessional education (IPE) is necessary for Interprofessional collaboration (IPC). To address oral health challenges of medically vulnerable individuals, IPC through the integration of oral health into overall health.

Conflicts of Interest

The authors have declares that there are no conflict of interest.

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