

Oral and Systemic Health in Older Adults: The Imperative Role of Nurses and Dentists in Integrated Smoking Cessation Programs

Musab Abdullah Alsulami¹, Ahmed Taher Shui Oraybi², Abeer Ahmad Alharbi³, SAUD NAHI ALQASIMI⁴, Roqaih Hussain Alnakle⁵, OTHMAN MOHAMMED SHAREEF⁶, Khaled Saad Misfer Al-Otaibi⁷, Nora Mohammed Najih Al-Balawi⁸, Ameera Saeed Habtar⁹, Heyala Yahya Sofyani¹⁰, Abdullah Munadi Alanzi¹¹, Mathkar Eid Alqahtani¹², Amad Jihad Alkhatib¹³, Areej Awwad Alharthy¹⁴

Abstract

Oral health is a critical component of overall health, particularly in older adults who face increased risks of oral and systemic diseases. Despite the preventability of many oral disorders, significant disparities exist, exacerbated by factors such as age, socioeconomic status, and access to care. Smoking and other lifestyle choices further complicate these health challenges. This review synthesizes current literature on the integration of oral health into general healthcare systems for elderly populations. A comprehensive analysis of studies from databases such as PubMed and Google Scholar was conducted, focusing on the roles of dental and nursing professionals in smoking cessation programs and their impact on oral and systemic health. Findings indicate that incorporating oral health into general healthcare services significantly improves health outcomes for older adults. Dental practitioners are essential in advocating for smoking cessation, which can mitigate risks of periodontal disease and other systemic conditions. The review highlights various strategies for integration, including multidisciplinary cooperation, patient education, and addressing common risk factors. The integration of oral health into overall healthcare is vital for enhancing the health of older individuals. By addressing shared risk factors and fostering collaboration among healthcare providers, it is possible to reduce the prevalence of oral disorders and improve quality of life. Policymakers and health organizations must prioritize these strategies to ensure effective healthcare delivery for aging populations.

Keywords: Oral Health, Smoking Cessation, Elderly Care, Integrated Healthcare, Systemic Health.

Introduction

The incidence of oral disorders, similar to other noncommunicable diseases, increases with age owing to cumulative exposure to many social and commercial variables of oral health [1]. Consequently, older persons possess an elevated chance of acquiring oral and systemic disorders relative to those in other age cohorts. Despite the preventability of oral illnesses, their prevalence among older persons remains excessive [1,2]. Nearly fifty percent of the worldwide elderly population suffers from untreated dental caries. Approximately two-thirds of elderly people in the United States and Germany suffer from periodontitis [3,4]. The FDI World Dental Federation General Assembly established a new concept of oral health,

¹ KSA, Ministry of Health, Taif

² KSA, Ministry of Health, Jizan

³ KSA, Ministry of Health, Alhemnah Hospital.

⁴ KSA, Ministry of Health, Hafar Al-Batin Health Center at East Al-Batin Health Center.

⁵ KSA, Ministry of Health, Women, Maternity and Children's Hospital

⁶ KSA, Ministry of Health, Farasan General Hospital

⁷ KSA, Ministry of Health, Rawda Al-Ard Hospital

⁸ KSA, Ministry of Health, Al Hamra Health Center

⁹ KSA, Ministry of Health, C1 Riyadh Health Cluster

¹⁰ KSA, Ministry of Health, King Saud Medical City Riyadh First Health Cluster

¹¹ KSA, Ministry of Health, Ramah General Hospital

¹² KSA, Ministry of Health, Alfarda PHC

¹³ KSA, Ministry of Health, General King Fahad hospital

¹⁴ KSA, Ministry of Health, Genral King Fahad hospital

acknowledging its significance for individuals' entire health and well-being [5]. Oral health is a crucial component of healthy aging and is linked to overall health, illness, and death in older persons [6].

Oral health disparities are present both within and between nations, with specific demographic groups, such as those with special needs, the elderly, and those with poor incomes, exhibiting a greater incidence of oral disorders [7]. Older persons may exhibit cognitive impairment, functional disability, or medical compromise, complicating the delivery of oral health care. Moreover, functional and physical limitations impede dental access due to the need for additional services, including walking aids, wheelchairs, guides, or transportation for help [8]. Dental care is often excluded from national health systems or insurance policies, making it costly for elderly individuals [9]. The United Nations projects that the world elderly population will increase to 1.5 billion, with one in six individuals aged 65 or older by 2050. This would exacerbate the worldwide burden of oral illnesses among older persons and amplify health disparities. Oral healthcare practitioners must devise strategies to enhance oral health, mitigate oral health disparities, and alleviate the worldwide burden of oral illnesses in older persons within the next decade (Mansoor et al., 2021).

The World Health Organization (WHO) has identified the oral health of older persons as a critical issue due to the rising population of this demographic [10]. The World Health Organization has proposed that incorporating age-related oral health issues into general healthcare could enhance oral care for older adults, as both oral as well as noncommunicable illnesses share several modifiable risk factors (such as smoking as well as diet) and social determinants. This integration may also elevate awareness regarding the significance of oral health, ultimately improving the quality of healthcare for the elderly [11]. The FDI World Dental Federation has asserted that integrated healthcare for the elderly is the optimal strategy to enhance health outcomes and address the significant effects of population aging in the next decade [12]. It has included "integrating oral care into general care" as one of the eight strategic areas in the 2018 Roadmap for Healthy Ageing [13].

Integrated healthcare for older persons refers to the comprehensive provision of healthcare services that are coordinated across various stages of care and diverse experts and care settings within the medical system, involving long-term care institutions and residences. It does not imply the amalgamation of buildings, but rather the coordination of all healthcare professionals to collaboratively provide a comprehensive range of services to older individuals [12]. Additionally, it seeks to provide a thorough evaluation of elderly individuals, accompanied by a unified objective and a treatment strategy that is collaboratively developed by all healthcare practitioners. Thus, the thorough integration of oral health into mainstream health care would not only alleviate the worldwide burden of dental illnesses but also enhance overall health in older persons.

Incorporating dental care into general medical care is essential for oral healthcare practitioners to enhance oral health among older persons in the next decade. Oral healthcare experts must recognize the obstacles they encounter and delineate the strategies that others may use to guarantee the efficient, effective, and sustainable incorporation of oral and overall wellness services for the elderly [14]. This study aims to examine the advantages, identify the obstacles, and suggest methods for including oral health in overall health care for older individuals. This review utilized studies published in English, including reviews and communications, sourced from the PubMed and Google Scholar databases, along with the most recent information from the World Health Organization and FDI World Dental Federation Global Assembly websites regarding the incorporation of oral health into general health services for older adults.

Advantages of Incorporating Oral Health into General Health Services for Elderly Individuals

Oral disorders often coexist with other noncommunicable diseases that possess the same risk factors and societal and socioeconomic drivers [14]. Nonetheless, these noncommunicable illnesses may be mitigated by enhancing oral health in older persons and managing the related risk factors via nutritional guidance, cessation of smoking, and moderation of alcohol intake [15]. Tooth caries result from the degradation of hard tooth tissues due to acidic byproducts generated by bacterial metabolism of free carbohydrates. The intake of free sugars is a prevalent risk factor for root caries in older persons, as well as for obesity and

diabetes. Oral healthcare practitioners' dietary recommendations for lowering free-sugar consumption may help prevent dental caries, decrease overweight or obesity prevalence, and manage diabetes [16,17].

Oral healthcare specialists may provide further guidance on appropriate nutritional consumption for older persons to promote healthier lives. Smoking is associated with periodontal disease and cancers of the mouth and throat, and it serves as a risk factor for myocardial heart disease, respiratory disorders, stroke, and cancers of the lung, pancreas, renal, and urinary systems. Oral healthcare practitioners are essential in advocating for tobacco cessation to enhance the oral and overall health of older persons. Excessive alcohol intake increases the risk of mouth cancer along with other noncommunicable illnesses, including hypertension, liver cirrhosis, and cardiovascular disorders. It is also associated with cranial trauma, including mandibular and dental fractures [15]. Guidance on alcohol use from dental health specialists may diminish the prevalence of such oral and systemic illnesses. Incorporating oral healthcare into overall health services helps elevate oral healthcare practitioners within the broader healthcare framework, so enhancing both oral and overall health. Health promotion needs to prioritize the whole population instead of concentrating on disease-specific at-risk groups, and it should be executed in a more cost-effective, efficient, and impactful manner [15].

Older persons are more susceptible to acquiring various chronic medical diseases, and certain chronic systemic illnesses may remain undiagnosed in their initial stages. Nonetheless, some individuals may exhibit first signs and symptoms such as ulcers, white and red lesions, halitosis, gingival hemorrhage, or xerostomia in the oral cavity [18]. Diabetic individuals may have compromised periodontal health characterized by bleeding from the gingival area and clinical separation [19]. Individuals with leukemia may have a mucosal hemorrhage, ulcers, and localized or widespread gingival hypertrophy [19]. Oral healthcare providers may identify these medical disorders in their first stages via oral screenings and can obtain saliva specimens as biomarkers to diagnose systemic illnesses [20]. Saliva collection is expeditious, straightforward, and noninvasive, facilitating the prompt detection of diabetes mellitus, heart disease, pancreas cancer, cancer of the breast, lung cancer, as well as prostate cancer, while also enabling timely interventions to mitigate mortality and morbidity in the advanced stages of these conditions. This enables oral healthcare providers to engage with medical partners in screening and identifying systemic illnesses in older persons before their progression into severe medical issues.

Oral health is associated with overall health, death, and illness [6]. The reciprocal association between periodontal disorders as well as type 2 diabetes mellitus is well-documented [21]. Chronic progressive disorders, including gum disease along with other noncommunicable illnesses, release inflammatory chemicals into the bloodstream, hence intensifying systemic inflammation [22]. The same inflammatory pathway is thought to link periodontal disease with several systemic conditions, such as cardiovascular disorders, rheumatoid arthritis, Alzheimer's disease, and Parkinson's disease [8]. Aspiration of oral microorganisms induces pneumonia, particularly in hospitalized individuals and the elderly [22]. If tooth decay or periodontal disease remains untreated, germs from the cavities or gingival spaces may infiltrate the circulation, resulting in sepsis [23]. Consequently, promoting dental health in older persons may enhance both oral as well as systemic wellness.

The dental profession can engage with aging populations via routine dental examinations or community services to gather knowledge about oral health status, behavioral risk variables, medical history, and, if resources permit, biochemical information, including *Streptococcus mutans* amounts and salivary or serum indicators for oral health monitoring [24]. Given that oral disorders and non-communicable diseases have analogous risk factors, this data may also enhance the monitoring of chronic systemic illnesses [25]. Incorporating oral health within general health care would improve data exchange across other specialties. Oral healthcare practitioners might review patients' medical and pharmacological histories before a dental appointment to guarantee the appropriate and safe treatment of older persons. Moreover, medical teams might ascertain the oral disorders impacting a patient's present medical status and provide suitable guidance and therapy. Data from dentistry and medical practices may be effectively integrated for research to assess the prevalence and extent of oral as well as systemic disorders or to evaluate the impact of treatments on the health of aging populations.

Post-integration, the advancement of both oral as well as general wellness may be executed via a population-wide strategy instead of a disease-specific methodology. Preventive programs may be designed more cost-effectively by targeting the common, modifiable risk factors and the social and commercial drivers of both oral and systemic illnesses, especially in resource-limited countries [15]. Integrating oral healthcare professionals into healthcare communities would enable them to get the requisite knowledge and abilities for redeployment into other positions within health systems with other healthcare practitioners during unanticipated crises, including outbreaks and other catastrophic catastrophes. Dental practitioners provide expertise in clinical practice and infection control implementation, serving as a vital resource during the current COVID-19 pandemic intervention [26]. They have undertaken various front-line clinical responsibilities, such as screening suspected patients, performing swabbing procedures, administering immunization vaccinations, and offering consulting on infection control strategies in several countries [26]. Their contributions show that a comprehensive healthcare system may exhibit more resilience with additional personnel for clinical responsibilities.

Obstacles to Incorporating Oral Health into Comprehensive Health Services for Elderly Individuals

The 2008 World Health Report on Primary Medical Care advocated for the integration of the medical system, involving the oral health sector, into an integrated care pathway to enhance the efficacy of care for those with particular requirements, such as the elderly or individuals with mental or physical impairments [27]. The integrated medical system would offer universal access to a comprehensive array of health services to mitigate health disparities across populations. This integrated strategy is still in its infancy in several nations and has encountered opposition from some fields, particularly the oral healthcare sector, owing to difficulties in policymaking, education, organizational culture, and management [28].

The oral healthcare industry functions independently from mainstream healthcare and is funded differently; thus, the population's oral health consistently gets lesser priority in national government planning [29]. Oral healthcare is excluded from national healthcare insurance and is often absent from health benefit packages in several nations [29]. In several nations, dentistry mostly employs intervention-focused and dentist-centered methodologies instead of prevention-oriented strategies for the management of oral disorders [30]. Numerous dental schools instruct their dental learners to operate independently and seldom educate other proficient healthcare experts to meet the oral health requirements of the worldwide populace [30]. In contrast to medicine, basic medical care is not emphasized in dentistry, and dentists often operate alone rather than together. Divergences in educational systems and professional cultures, coupled with a lack of acquaintance with other working methodologies, establish further obstacles to integration.

Healthcare systems in numerous countries are structured in a disjointed and fragmented manner, characterized by inadequate referral systems, insufficient interprofessional connections, disparate recordkeeping systems, and a lack of coordinated personnel, which complicates the implementation of integration. To address these difficulties, changes will be essential and must be maintained via the collaboration of all healthcare providers, academic leaders, professional organizations, and policymakers to include oral health in overall medical care for older individuals.

Strategies for Incorporating Oral Health into Overall Health Services for Elderly Individuals

Multidisciplinary clinical environments that include both dentistry and medical professions may enhance multidisciplinary cooperation via streamlined referrals and communication. The collaborative process may be enhanced by the assistance of coordinating personnel [28]. The multidisciplinary team must convene routinely to exchange information, define clinical duties, and assess the efficacy of the integration [12]. Modern dentistry practices need to transition from a typically intervention-focused approach to a prevention-centered one, emphasizing the management of shared, controllable risk factors as well as the social and economic drivers. This may be accomplished by risk assessment, nutritional guidance, and smoking cessation. Dental healthcare practitioners must enhance older persons' understanding of general health concerns, including the connections between dental health and obesity, diabetes, heart disease, and other persistent medical disorders, while also conducting a thorough risk assessment. Customized nutritional guidance should be offered to avoid caries, manage overweight and diabetes, and encourage

good eating practices to provide proper nutrition in older persons. Oral healthcare professionals ought to promote tobacco cessation among older adult smokers by employing the 5A simulation (advise, ask, assist, arrange, and assess), facilitating behavioral counseling, utilizing nicotine replacement therapy, and providing suitable recommendations to their national smoking cessation organization if necessary [31]. Mouth healthcare practitioners have to establish a stronger collaboration with medical colleagues to promptly identify and address chronic medical diseases by recognizing early mouth symptoms and obtaining saliva samples as indicators for preliminary screening.

Universities should provide education for all healthcare workers, including dental, healthcare, nursing, and sociological disciplines. A fundamental understanding of geriatric health and dentistry must include prevalent medical and dental issues, strategies for their management in older persons, specific precautions for providing healthcare to this demographic, and competencies for aiding in everyday activities. The programs should also seek to cultivate competencies in multidisciplinary cooperation and communication. The dentistry curriculum should prioritize evidence-based practices, and preventive, and patient-centered care, rather than being intervention-focused.

The absence of interdisciplinary education and training diminishes the capacity of healthcare workers for integration [28]. Consequently, dental and other healthcare experts have to be motivated to participate in conferences outside their specialty to enhance their knowledge and proficiency in other fields. Engaging in frequent seminars and multidisciplinary case discussions may facilitate information sharing among interprofessional teams.

Information and communication technology enhance access, quality, safety, and, crucially, the incorporation of healthcare services [12]. Integrated practice-management software solutions enable professionals to input, exchange, and consolidate electronic patient information from dental and other healthcare providers. This collaborative data system is comprehensible and promotes interprofessional collaboration, while the consolidated data may be used to assess and monitor patient requirements. Automated alerts from this health software program may assist healthcare personnel in providing services more efficiently and safely, particularly about the specific measures necessary for managing the medical problems of older persons.

Oral healthcare will become more empowering and grounded in evidence during the coming decade [32]. Consequently, it is essential to provide information that substantiates oral health strategy and its incorporation into comprehensive healthcare services. Further research is necessary to explore the relationship between oral hygiene, noncommunicable illnesses, and frailty, as well as to assess the medical economics of unified healthcare systems to inform modifications to oral health compensation systems that promote incorporation with overall wellness services. Research data collecting necessitates a dependable surveillance and tracking system using a standardized set of oral health indicators. Oral healthcare practitioners must routinely gather prevalent oral health indicators and document them in a monitoring network accessible to other healthcare providers. This data may be used to assess the oral health status of older persons and to evaluate the efficacy of integrated health services, as well as the preventive measures and therapies for oral illnesses in this population.

Professional oral healthcare providers need to advocate for oral health outside the confines of dentistry by conducting seminars or activities within other healthcare organizations to enhance knowledge of the significance of oral health and its correlation with overall health. They should also engage in practical activities with elderly medicine groups for transdisciplinary skill training to enhance their proficiency in delivering oral and overall medical services to older persons. In recent years, the European Association of Periodontology conducted multidisciplinary awareness initiatives, including “The Perio and Cardio Project” in collaboration with the World Heart Confederation and the “Perio and Diabetes” initiative. These campaigns enhanced awareness of the connections between periodontal and systemic disorders and offered explicit guidance for oral health experts, medical practitioners, patients, and the general public. These activities are crucial for fostering multidisciplinary teamwork. Furthermore, professional oral medical groups can promote oral health by addressing prevalent oral diseases, including caries and gingivitis, while also highlighting severe oral conditions, including tooth decay and oral cancer, which are more common in older adults, to illustrate the interconnections between oral and systemic illnesses. The National Oral

Healthcare Association must advocate for the prioritization of oral health and its incorporation into general medical care for older adults within policy agendas, as well as support and facilitate all-sugar-free regulations and administration of tobacco cessation programs.

The efficacy of every suggested program depends on endorsement from higher-level policy, financial assistance, and collaborative accountability across teams [12]. The government needs to establish broad health insurance policies that offer accessible and inexpensive healthcare services, including both dental and general care, for all individuals, particularly marginalized populations such as the elderly. It should emphasize the comprehensive healthcare of older persons and devise techniques for combining oral health with general health, starting with the management of their common risk factors. Oral healthcare needs to be included in general health coverage or payment programs to enhance affordability for older persons and facilitate its integration with overall health services. The government should establish comprehensive health policies to increase awareness of prevalent risk factors for oral and noncommunicable illnesses, and it should execute health programs in communities, senior daycare centers, and nursing homes to promote oral and overall health among older adults. The Hong Kong government initiated the "Outreach Dental Care Programme" to provide fundamental dental services in residential facilities for senior citizens. The initiative provides dental care training for caregivers in long-term care institutions and conducts oral health education sessions for older persons and their families to improve their understanding of oral health. The national healthcare paradigm must be restructured to emphasize patient-centered treatment, integrating all stakeholders to enhance both oral and general health in aging populations.

The commercial factors that contribute to oral and noncommunicable illnesses can only be successfully addressed by government laws and regulations. Policies aimed at diminishing sugar intake and enhancing smoke cessation should be implemented and reinforced. The pricing of sugar-sweetened drinks, sugary items, and tobacco effectively mitigates risk factors [32]. The authority and impact of the global sugar and tobacco sectors may be curtailed by the enactment of stringent laws and legislation. Clear and open norms for conflicts of interest should be created to mitigate their impact on academic research, health policy, and professional healthcare organizations.

Countries exhibit diverse cultural backgrounds and social systems, as well as variations in available resources and labor forces. Consequently, the aforementioned tactics may not be efficacious in every country or place. They have to be chosen and modified by the specific conditions of each country. Policymakers, international healthcare organizations, national dental associations, public health professionals, researchers, academics, and individual healthcare practitioners should collectively aim to incorporate oral health into general health services to deliver patient-centered care to aging populations, thereby enhancing their oral health and overall well-being in the forthcoming decade [12]. All individual oral healthcare practitioners must be ready to assume increasingly significant, leadership responsibilities within the medical field to enhance both oral and overall health in older adult populations.

Conclusions

The prevalence of oral disorders in elderly individuals globally is significant and is projected to increase in the next decade. Oral health is associated with overall health, death, and morbidity in elderly individuals. Prioritizing preventive healthcare treatments is essential. Integrating oral health with overall health care is an effective strategy to enhance oral health in older persons by addressing common risk factors and facilitating efficient treatment of oral illnesses via a patient-centered approach throughout the next decade. This integration would facilitate the reallocation of assets and staff within the healthcare system, enhancing the accessibility and affordability of oral healthcare for everyone, particularly for marginalized populations such as the elderly.

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صحة الفم والجسم لدى كبار السن: الدور الحتمي للمرضين وأطباء الأسنان في برامج الإقلاع عن التدخين المتكاملة

الملخص

الخلفية: تعد صحة الفم عنصرًا أساسيًا في الصحة العامة، خاصة لدى كبار السن الذين يواجهون مخاطر متزايدة للإصابة بأمراض الفم والجسم. وعلى الرغم من إمكانية الوقاية من العديد من اضطرابات الفم، إلا أن هناك تفاوتات كبيرة في هذا المجال، تتفاقم بسبب عوامل مثل العمر، والوضع الاجتماعي والاقتصادي، وإمكانية الوصول إلى الرعاية. ويزيد التدخين وخيارات نمط الحياة الأخرى من تعقيد هذه التحديات الصحية.

الطرق: تستعرض هذه المراجعة الأدبيات الحالية حول دمج صحة الفم في أنظمة الرعاية الصحية العامة لكبار السن. تم إجراء تحليل شامل للدراسات من قواعد بيانات مثل PubMed وGoogle Scholar، مع التركيز على أدوار أطباء الأسنان والمرضى في برامج الإقلاع عن التدخين وتأثيرها على صحة الفم والجسم.

النتائج: تشير النتائج إلى أن دمج صحة الفم في خدمات الرعاية الصحية العامة يُحسن بشكل كبير من نتائج الصحة لدى كبار السن. يلعب أطباء الأسنان دورًا أساسيًا في تعزيز الإقلاع عن التدخين، مما يساهم في تقليل مخاطر أمراض اللثة والحالات الصحية النظامية الأخرى. تسلط المراجعة الضوء على استراتيجيات متعددة للتكامل، بما في ذلك التعاون بين التخصصات، وتنقيف المرضى، ومعالجة عوامل الخطر المشتركة.

الاستنتاج: يُعد دمج صحة الفم في الرعاية الصحية العامة أمرًا حيويًا لتحسين صحة كبار السن. ومن خلال معالجة عوامل الخطر المشتركة وتعزيز التعاون بين مقدمي الرعاية الصحية، يمكن تقليل انتشار اضطرابات الفم وتحسين جودة الحياة. يجب على صانعي السياسات والمنظمات الصحية إعطاء الأولوية لهذه الاستراتيجيات لضمان تقديم رعاية صحية فعّالة للفئات المتقدمة في العمر.

الكلمات المفتاحية: صحة الفم، الإقلاع عن التدخين، رعاية كبار السن، الرعاية الصحية المتكاملة، الصحة النظامية.