STOMATOLOGY EDU JOURNAL
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BARRIERS TO GOOD ORAL HEALTH FOR NURSING HOME RESIDENTS: A LITERATURE REVIEW

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ABSTRACT

Background: Oral health in older adults who live in nursing homes is generally poor, with high rates of mainly preventable oral conditions.
Objective: The aim of this review was to present an overview of the barriers to good oral health for older nursing home residents.
Data sources: Electronic databased were used (PubMed, Google Scholar, ScienceDirect). Reference lists from relevant studies and cited papers were also investigated.
Study selection: The review included reports from national surveys and full papers of any study design, systematic reviews and guidelines published in peer-reviewed journals in English. Articles published until February 2019 were included.
Data extraction: The recorded barriers to good oral health were allocated to the main categories described in the socioecological model of health promotion.
Data synthesis: The identified barriers to oral health of nursing home residents were allocated into intrapersonal, interpersonal, organizational and public health policy issues. The main intrapersonal barriers included the residents' physical and mental disease, resistance to care, poor oral health literacy and difficulties in accessing dental care. Interpersonal factors included inadequate knowledge and training of caregivers and health professionals on oral health and care for frail older people, as well as negative attitudes of caregivers and family members towards oral hygiene provision in nursing homes. Organizational factors included low priority of oral health in nursing homes, limitations in time and numbers of staff and limited collaboration with dental professionals. Ineffective oral health policies included lack of priority for oral health and unsupportive oral care systems.

KEYWORDS

Barriers; Oral Health; Oral Hygiene; Nursing Homes; Older Adults.

Peer-Reviewed Article

Citation: Konstantopoulou C, Kossioni A, Karkazis H, Polyzois G. Barriers to good oral health for nursing home residents: a literature review.Stoma Edu J. 2020;7(2):xxx-xxx

Received: November 10, 2019
Revised: December 09, 2019
Accepted: May 22, 2020
Published: May 25, 2020

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1. INTRODUCTION

Oral diseases are a major global public health problem affecting individuals, communities, and the society as a whole, as over 3,5 billion people face chronic and progressive oral diseases [1]. Older adults who reside in nursing homes are a particularly vulnerable part of the population with high rates of oral diseases. Neglected oral health has severe consequences for the residents' general health and quality of life and has been associated with increased risk for aspiration pneumonia, diabetes mellitus, cardiovascular diseases and malnutrition [2-9].
Poor oral health has a considerable impact on the health care systems raising the health care costs [10-13]. In addition, poor oral health may have a negative impact on social relationships due to altered speech, aesthetics, and oral comfort [13-16]. Oral care for nursing home residents does not often meet best practice standards [17] and several factors seem to act as barriers.
The aim of this review was to offer an overview of the barriers to good oral health in older adults residing in nursing homes.

2. MATERIALS AND METHODS

A literature search in PubMed, Google Scholar and ScienceDirect electronic databases was performed. The following keywords were used: (barriers) AND (oral health OR oral care) AND (nursing home residents OR dependent older adults). Moreover, reference lists from relevant studies and cited papers were also investigated. The titles and the abstracts of the retrieved articles were screened to decide whether full-text reading was required, and full texts were retrieved for the selected articles. The review included reports from national surveys and

full papers of any study design, as well as guidelines, published in peer-reviewed journals in English. Articles published until February 2019 were included. According to the socioecological model of health promotion, poor oral health of residents in care units can be attributed to intrapersonal, interpersonal, organizational and public health policy issues. Therefore, the main barriers identified in the study were allocated to these specific categories.

3. RESULTS

The review has identified the following barriers to good oral health in nursing homes:

3.1. Intrapersonal factors

A number of barriers to oral health of nursing home residents are related to the residents themselves. Intrapersonal issues include physical illness, cognitive impairment and mobility problems leading to progressive self-care limitations and, subsequently, to difficulties in performing oral hygiene and accessing dental care [17-21]. Lower use of dental services may lead to the fast progression of oral diseases, delayed diagnosis and, as a result, to poor prognosis [22].

Studies in care units revealed poorer oral hygiene in functionally dependent older adults compared to residents with better self-care capacity [23,24,25]. Apart from the level of care dependency, increasing age, as well as communication and behavioral problems comprised additional barriers [8,26,27].

Polypharmacy is a major barrier to good oral health. In particular, cholinesterase inhibitors, atypical antipsychotics and antidepressants have significant oral side effects such as xerostomia or sialorrhea, stomatitis and dysgeusia. In addition, donepezil, galantamine, and risperidone interact with medications often administered by the dentist, such as erythromycin, clarithromycin and ketoconazole [28-30].

Individual factors also include unhealthy dietary habits, and smoking, as well as the social determinants of health such as low educational level and limited income [31-33].

The presence of natural teeth and dental implants have also been characterized as barriers to good oral health, because of the complexity of oral hygiene procedures compared to dentures However, poor retention and stability, and poor hygiene of the dentures may also negatively affect oral health causing denture-related stomatitis oral lesions [17,27,34-36].

3.2. Interpersonal factors

Caregivers should examine the oral health status of the residents and provide or supervise the implementation of oral hygiene at least once a day [37,38,39]. However, the oral health of nursing homes residents does not receive the necessary attention and oral care neglect is more frequently observed compared to community dwelling elders [40]. The role of formal caregivers in nursing homes is crucial for the everyday general and oral care of frail and functionally dependent residents. Inadequate theoretical and practical education of nursing home staff in oral health and care has been well documented [34,41-45]. Caregivers have poor knowledge and skills on oral hygiene advice and assistance [18,25]. Moreover, they do not have adequate knowledge in detecting common oral pathologies such as caries, periodontitis and stomatitis, and in the correct procedures for oral hygiene implementation [42,46]. Furthermore, they do not use the available educational resources on oral care. Some caregivers, also, do not understand the need for certain oral care activities and they think that the implementation of oral hygiene is based on their preexisting knowledge [19]. According to the caregivers' perceptions, a major barrier to oral hygiene provision is the residents' negative responsive behaviors and resistance (i.e. not opening their mouth, biting the toothbrush or the caregivers' hands, shouting, etc.). However, the caregivers' close relationships with the residents and a person-centered approach can play a key role in preventing or managing responsive behaviors of older adults with dementia. Nevertheless, care providers are deprived of proper education in overcoming care resistant behaviors and are unaware that aggressive behaviors of residents with dementia may express pain, fear or resentment [8,47-51]. Furthermore, caregivers believe that the residents experience oral hygiene as intimate or painful. The poor cooperation among caregivers may also cause communication problems [8,21,35,52-54].

Caregivers also consider oral care of low priority and believe that it is not included in their job responsibilities [19,20,43,55,56]. Oral care and removal of dentures is considered as an unpleasant and repulsive process, mainly due to oral halitosis and bacteria prevalence [20,25,34,57]. For some caregivers, oral care is considered as more unpleasant compared to general care (feeding, washing or changing diapers) and they feel exhausted after applying oral hygiene [44,58]. Other reported barriers include the lack of empathy, laziness and belief that residents can manage oral care themselves [44,59].

Lack of professional support is also associated with the insecurity of the dentists to provide oral care in medically compromised older people, particularly in domiciliary settings [39, 60, 67], as well as the limited knowledge of physicians to integrate oral health into the general medical assessment [39].

Interpersonal factors also include barriers related to the residents' family members. Family members' oral health literacy is often inadequate [20,61,62] and there is lack of understanding of the need to improve the quality of oral health and care [63]. They often do not support the formal caregivers in the provision of oral hygiene to the older family members [60,61,63], and do not purchase oral care supplies for their

relatives, due to their high cost or perceived low priority of oral care [8].

3.3. Organizational factors

Barriers to oral health associated with the organization of nursing home services include lack of oral care routines and instructions, and unclear rationale for implementing oral care recommendations [20,21,41,54,64]. The lack of a nursing team leader and of proper supervision, monitoring, enforcing and rewarding the caregivers' oral hygiene practices are important determinants of proper oral hygiene implementation [8, 21,65].

On the other hand, common findings in the care units are the low numbers of nursing staff and the limited time assigned to oral hygiene provision [19,20,25,34,35,52,53,62,65]. Caregivers face high workloads and are frequently interrupted while providing care to the residents [46,63,65]. Therefore, the number of residents in long-term care institutions seemed to have a negative impact on oral hygiene practices [26]. Despite the nursing staff's willingness to improve the oral health of the residents, their increased workload posed significant difficulties in integrating oral care into the daily care routine [17, 37]. The above factors may lead to the low caregivers' satisfaction with their work, burn-out and, consequently, to a low quality of care [8,46,63,65]. Moreover, the caregivers' rush to provide timely daily care may trigger the residents' aggressive behavior, especially those with dementia [47,51].

Additional barriers are the lack of financial resources to buy the necessary oral hygiene supplies [17,18,34,35], the lack of dentures' labelling [34] and the absence of a dental chair at the nursing homes' premises [66]. It should also be noticed that a significant barrier to good oral health in nursing homes is the lack of integration of oral health assessment into the general health examination provided by the unit's physician and the limited collaboration with a dental professional who will regularly assess the oral health of the residents and manage any urgent and routine oral problems [39].

3.4. Public policy issues

The lack of appropriate oral health policies is well documented. Public dental care coverage is limited in most countries, socio-economic inequalities reduce access to dental care and oral health literacy of the public is poor [39,67]. Finally, there is poor availability of domiciliary dental services and lack of appropriate legislation to support oral care for the older adults living in care units of being confined at home [37,39,67].

4. DISCUSSION

This review has identified several barriers to good oral health in nursing home residents related to intrapersonal, interpersonal, organizational and public policy issues. The caregivers' lack of oral health education and increased workload, along with limited access to dental care for the residents were the dominant barriers.

Older residents face a rapid oral health deterioration due to several risk factors which include general health factors, oral conditions and lack of social and institutional support [68]. Poor oral hygiene implementation has been associated with the caregivers' inadequate knowledge, training and skills for oral hygiene assessment and provision, the limitations in the number of staff and their time availability for oral care, the poor communication with the residents, the residents' low interest or even their resistance to oral care [8,17, 19,21,25,34,35,52,53,69]. The main barriers regarding the provision of dental treatment are the limited collaboration of nursing homes with dental practitioners, the lack of suitable facilities for treatment on site, the difficulties in the transportation of the residents to the dental offices, their refusal to receive dental care, the limited preparedness of dentists to manage frail and care-dependent older people, the poor oral health policies including the lack of oral health integration into public health care coverage, and the limited provision of domiciliary care [39, 69].

The study of Hilton et al (2016) describes findings from a focus group of nurses and residential care workers identifying large discrepancies between the existing recommendations for oral care in nursing homes and their actual implementation [17]. The results revealed the caregivers' substantial gaps in oral care training, the limited access to appropriate equipment and professional support, the residents' resisting behaviors to oral hygiene, the inadequate staffing and the staff's negative attitudes towards the provision of oral care [17]. Difficulties in oral care provision regarding dysphagia, dementia and poor fit of the dentures are common and it is of utmost importance to be addressed [17]. Interestingly, the members of the focus group suggested that lack of time should not be a barrier in converting the daily implementation of oral health practices in residential care settings to a priority [17]. This study highlights the need for the implementation of appropriate oral health education programmes for nursing homes' staff and of the necessary organizational interventions based on the existing recommendations by the European College of Gerodontology (ECG) and the European Geriatric Medicine Society (EUGMS) [39]. These recommendations include a compulsory oral health assessment together with the medical entry assessment, daily oral hygiene provision, oral health education for the caregivers, availability of oral care products, accessibility to emergency and routine oral care, regular oral screenings and a healthy diet [39].

However, there is lack of robust evidence on the prevalence, predictors and consequences of the various barriers and facilitators to oral health in nursing homes [8,69]. Because of the specific

characteristics of the nursing home population with high levels of cognitive impairment, the implementation and testing of effective oral hygiene protocols raise significant difficulties and demand adapted procedures [70]. Based on systematic reviews' findings, most of the related studies generally have a low methodological quality and a high risk of bias especially in terms of sample size, research tools and assessment of confounding factors, while most studies were mainly conducted in high-income countries and, therefore, generalization of the findings is limited [8,68]. Future research should include studies on the existing and novel oral health practices in nursing homes to thoroughly determine the barriers to the residents' oral care [17]. The development of appropriate strategies to prevent and manage the residents' negative attitudes and behaviors and enhance the caregivers' oral care knowledge and attitudes is also crucial [8, 39, 71]. Moreover, appropriate legislation and policies for oral health prevention and promotion in institutional settings according to the recommendations of the European College of Gerodontology (ECG) and the European Geriatric Medicine Society (EUGMS) should be implemented [39].

5. CONCLUSIONS

Several barriers in oral health prevention and promotion for nursing home residents have been reported at an individual, interpersonal, organizational and public policy level. A more rigorous research and a thorough understanding of these barriers will lead to the design and implementation of effective oral health promotion strategies for the vulnerable older population.

CONFLICT OF INTEREST

We declare no conflict of interest of any kind.

AUTHORS CONTRIBUTIONS

CK: protocol, data gathering, data analysis, authoring the draft. AK: concept, protocol, critically revising the manuscript. HK, GP: critically revising the manuscript.

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Review Articles

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Calliope Konstantopoulou graduated from the School of Dentistry of the National and Kapodistrian University of Athens, Greece in 2016. In 2019, she obtained her master's degree in Health Promotion and Education from the Medical School of the National and Kapodistrian University of Athens and became a postgraduate student at the Department of Prosthodontics (School of Dentistry, National and Kapodistrian University of Athens, Athens, Greece).

Questions

1. According to the socioecological model in health promotion, which of the following factors may deteriorate oral health of older nursing home residents?

❑a. Factors associated with the residents themselves;
❑b. Interpersonal factors;
❑c. Organizational and public policy issues;
❑d. All of the aforementioned.

2. A common side effect of polypharmacy is:

❑a. Gingivitis;
❑b. Periodontitis;
❑c. Xerostomia;
❑d. Teeth discoloration.

3. According to caregivers' perceptions, which is the major barrier to oral care provision?

❑a. Lack of oral care supplies;
❑b. Residents' responsive behaviors and resistance;
❑c. Lack of support by residents' family members;
❑d. Poor cooperation among caregivers.

4.The lack of appropriate oral health policies is related to:

❑a. Poor availability of domiciliary dental services;
❑b. Lack of oral health integration into public health care coverage;
❑c. Poor oral health literacy of the public;
❑d. All of the aforementioned.