

## Oral health in dementia: clinical update

Item Type	Journal article
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Citation	Girgis, E., Mishriky, R. and Antoun Reyad, A. (2024) Oral health in dementia: clinical update. Arabian Journal of Older Adults Mental Health Disorders, October 2024.
Publisher	Hamad Medical Corporation for Educational Purposes
Journal	Arabian Journal of Older Adults Mental Health Disorders
Download date	2025-05-12 09:35:40
Link to Item	<a href="http://hdl.handle.net/2436/625846">http://hdl.handle.net/2436/625846</a>

## Oral health in Dementia: Clinical Update

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Dementia is a progressive and debilitating neurodegenerative condition leading to a negative impact on older people's quality of life and daily activities. Recently, there is interest in the bidirectional association between dementia and poor oral health. Research suggests higher incidence of gingivitis, plaque, periodontitis, mucosal lesions, reduced salivary flow and tooth loss in patients with dementia. Maintaining good oral health is visionary with disease progression and challenging behaviors. Good oral health could be achieved through appropriate oral care advice and education to carers/families with regular professional dental care. Standards of living are improving with increased life expectancy leading to an ageing population (1) which constitutes a risk factor for dementia, with a huge economic and social burden. Family members are negatively impacted, especially with disease progression and behavioral changes (2). Dementia is characterized by progressive cognitive impairment. Patients suffering from dementia usually present with dental conditions influenced by their impaired self-care, polypharmacy, co-existing morbidity, malnutrition, xerostomia, dysphasia, and dysphagia (2). Recent research suggested that dementia patients have higher incidence of caries, retained roots, and orofacial pain (3). There is increased risk of plaque, gingival bleeding, periodontal pockets, xerostomia, reduced salivary flow, stomatitis and oral lesions (3)

### **Oral Disorders Association with Systemic Diseases and Poor Oral Health**

Common oral health problems in older people are caries, periodontitis/periodontal disease, reduced salivary flow and mucosal lesions (3). Periodontitis has been associated with multiple systemic health conditions especially diabetes mellitus type 2, cardiovascular disease, arthritis, sepsis and aspiration pneumonia (4). Poor oral health could be the result of dementia or a causative factor for the onset of dementia (5) Patients with dementia have a higher risk of tooth loss due to difficulty with oral care. Tooth loss, periodontitis and occlusal dysfunction may be risk factors for cognitive decline and trigger dementia onset (6,7) There are several risk factors for xerostomia (dry mouth) in dementia patients such as ageing, reduced stimulated and

resting submandibular salivary flow rates, multiple medications or co-morbidity. The prevalence of xerostomia increases with age and range from 9.1 to 45.0% (8), Xerostomia leads to a higher prevalence of mucosa and parotid inflammation, plaque accumulation, candidiasis, dental caries and frictional lesions for dentures (9). The lower stimulated and unstimulated salivary flow rate with less buffering capacity could be due to neuropathological changes or autonomic nervous system dysfunction (10). Other complications of xerostomia include difficulty in swallowing, periodontal inflammation, halitosis, malnutrition, fungal infections, denture stomatitis and masticatory discomfort with negative impact on quality of life (11) Periodontal conditions are common in patients suffering from dementia and there is an association between periodontal disease/tooth loss (14) with impaired masticatory movement. Chronic periodontitis could cause cerebral inflammation and neurodegeneration (13). Oral cavity pathogens could invade the brain leading to inflammation and senile plaques especially with aging (12). Among oral mucosal lesions, denture-related lesions, such as stomatitis, angular cheilitis, ulcers, and hyperplasia, are most common (15). Poor oral health is a risk factor for malnutrition (3) as tooth loss and xerostomia impairs the sensory and masticatory functions (12). Older people's oral conditions are liable to worsen with age with more caries, restorations and oral facial pain manifestations (16). There is a reduced reporting due to a reduced pain perception, communication issues or cognitive decline (17). Patients living in residential care homes has higher percentage had calculus, plaque, and gingival bleeding (40.4%), when compared to people without dementia (26.2%). (3) Stomatitis was also common (18).

Aspiration pneumonia is a lung infection with risk factors including age, frailty, dysphagia, medication, impaired cognition, xerostomia, and inadequate oral hygiene (19). Impaired cognitive functions could influence the informed consent process, hence good communication with patients, carers and family members is essential and special arrangements through community dental services should be provided (20).

### **Prevention and Management of Dental Problems in Dementia**

Self-care is a major issue, especially as the disease progresses (12), which is further compounded by behavioral and cooperative issues leading to poor oral hygiene/health (3). The deterioration of cognitive functions such as executive functioning, memory, attention and apraxia (23) and functional changes such as declined hand grip strength and motor skills complicates oral care (18) Management could be hindered by limited mobility, accessibility and

frailty (23). It is essential to encourage daily removal of dental plaque by brushing the teeth with oral health care education and improve the knowledge and attitude of carers (25). The main management goals for dementia patients are control dental disease, preserve function and enhance quality of life while considering accessibility to services, costs/affordability, self-care, and co-morbidities (26). Using appropriate tools in dental management is essential such as a standardized method using guidelines for institutionalized older people for oral health assessment (22). There are available models for management and better understanding patients' statuses and needs such as OSCAR Five-Point Geriatric Dental Assessment which focuses on oral cavity, systemic (health history), capability for self-care, autonomy for consent to care and reality for financial, life expectancy, end-of-life care and Seattle Care Pathway for functional statuses and possible risks to oral health (12,20). Clinicians need to provide safe and effective dental management that takes into consideration patient's needs and preferences. Outcomes that need to be achieved include ease of maintenance, appropriate masticatory function, long-term successful outcome and prevention of further complications (27). Older people have compromised oral hygiene due to their impaired memory and functional abilities. Developing a care plan according to each stage is desirable by using risk assessment to incorporate preventive measures and minimally invasive dentistry (20). Prosthodontic care with fixed and removable prostheses allows appropriate nutrition (26). In Early Stage, the focus is on caries prevention with fluoride therapy, frequent dental examinations, with long-lasting results and easy maintenance for simple restorations (27). In moderate stages, the focus is on prevention and maintaining dental status with simple provisional treatments, atraumatic restorative techniques and sedation (2). In Later Stages, treatment is more palliative and emergency care with sedation/general anesthesia can be used if appropriate (21).

#### Dementia and Challenging Behaviors in Dental Care

Behavioral issues such as aggression and agitation are common, thus use of mouth props for safety, supine position to reduce aspiration and short appointments are recommended (21). Providing care is negatively influenced by challenging behavior, hence strategies such as threat perception, regular oral health assessment by dentists and carers are beneficial (22). Using oral health assessment tool helps to identify risk factors through observing behavior, planning, behavioral management and appreciating patient's perception of needs, assessing cognitive impairment degree and communicating with carers and multi-disciplinary team (23). An interdisciplinary approach with carer/patient education, professional oral hygiene must be designed taking individual circumstances (dexterity and memory issues) in consideration, while using available innovations such as electric toothbrushes, water flosser, labelled denture. In

conclusion, the literature suggests that older people with dementia suffer from high levels of oral health problems; their oral health could be improved by education of carers, use of oral health screening tools and regular professional dental care.

Conflict of Interest None declared

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