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BestPractice

Evidence Based Practice Information Sheets for Health Professionals

Oral hygiene care for adults with dementia in residential aged care facilities

Information source

This Best Practice Information Sheet is based upon a Systematic Review of research published by Blackwell Publishing Asia and conducted by Australian Centre for Evidence Based Residential Aged Care a collaborating centre of the Joanna Briggs Institute.[1] The primary references on which this information is based are available in the systematic review report available from Blackwell Publishing Asia and to members of the Institute via the website: **www.joannabriggs.edu.au**

This Information Sheet Covers the Following:

- Oral Diseases
- Assessment Tools
- Prevention Strategies
- Dental Treatment
- Ongoing Management

Grade of Recommendation

These Grades of Recommendation have been based upon the JBI developed Grades of Effectiveness:

Grade A: Effectiveness established to a degree that merits application

Grade B: Effectiveness established to a degree that suggests application

Grade C: Effectiveness established to a degree that warrants consideration of applying the findings

Grade D: Effectiveness established to a limited degree

Grade E: Effectiveness not established

Background

High levels of oral diseases and conditions are prevalent in sub-groups of older adults, including those who are financially disadvantaged, irregular dental attendees, are functionally dependent, have dementia, have nutritional problems, have swallowing problems, are smokers, have carers who are burdened, and have previous experience of oral diseases. These high levels of oral diseases and conditions are related to older adults' increasing functional dependence, physical frailty, medical co-morbidity, polypharmacy, cognitive impairment, and dependence upon carers. Thus, high levels of oral diseases and conditions commence when older adults are living in the community, and are present when they are admitted into residential care. However, these oral diseases and conditions are ongoing during institutionalisation. The impact of high levels of oral diseases and conditions is compounded in the residential care setting because of the rapidly decreasing edentulism rate (total tooth loss), decreased use of full dentures, and increasing numbers of natural teeth being retained. Poor oral health and dental pain impact on older adults' general well-being and their quality of life. They impact upon eating ability, diet type, weight changes, speech, hydration, behavioural problems, appearance, and social interactions.

For dependent and cognitively impaired older adults, the provision of regular oral hygiene care is a challenging task. The oral hygiene care task is complicated by older adults' reduced physical dexterity and impaired sensory

functions; these are further compounded by cognitive deficits and related communication and behaviour problems. Polypharmacy and co-morbid medical conditions have direct and indirect effects on oral health and oral hygiene care provision. Medications such as antidepressants and antipsychotics are just two of the many drugs with severe oral adverse effects that are taken by adults with dementia. These oral adverse effects include decreased saliva flow (salivary gland hypofunction), perceived dry mouth (xerostomia), tardive dyskinesia, and extrapyramidal symptoms (such as grinding of teeth and dentures, and higher prevalence of oral mucosal lesions). Medical conditions are also related to some oral diseases and conditions. Adults with Alzheimer's disease have a lowered salivary flow, and diabetics have higher levels of periodontal diseases. Recent research has identified further important relationships between oral diseases and general health in older adults. Periodontal diseases are related to cardiovascular disease, and oral plaque accumulation on natural teeth and dentures is related to aspiration pneumonia. Thus, the promotion of oral health for older adults with dementia is an imperative in residential aged care.

Objective

The objective of this systematic review was to report on the best available evidence for:

- documenting the prevalence and incidence, as well as the experiences and increments, of oral diseases and conditions in adults with dementia residing in residential aged care facilities
- use of assessment tools by carers to evaluate the oral health of adults with dementia residing in residential aged care facilities
- oral hygiene care strategies to prevent oral diseases and conditions in adults with dementia residing in residential aged care facilities
- the provision of dental treatment and the ongoing management of oral diseases and conditions in adults with dementia residing in residential aged care facilities.

Oral Diseases

Oral epidemiological studies provided evidence that there was an increase in oral diseases and conditions in adults with dementia when studied with comparative populations without dementia. These high levels of oral diseases and conditions were evident in adults with dementia when they were living in the community and continued to progress when they were institutionalised in residential care.

These studies found evidence of the following in adults with dementia:

- a decline in salivary gland function, particularly sub-mandibular salivary function in older adults with Alzheimer's disease
- a greater accumulation of dental plaque and calculus on natural teeth and dentures
- increased levels of behavioural problems during oral hygiene care in people with dementia
- increased need for assistance with oral hygiene care
- higher experience, prevalence, increments and incidence of dental caries (as evidenced by numbers of filled and decayed teeth), missing teeth, and retained tooth roots
- an increased experience and prevalence of periodontal (gum) diseases
- these higher levels of oral diseases and conditions were found in people with moderate to severe dementia, independent of dementia type and of residential location (ie. community or institutionalised)
- few differences in oral diseases and conditions among people living in the community without dementia and people living in the community with mild dementia
- greater dental treatment needs but decreased utilisation of dental services.

Whilst this evidence supported the anecdotal reports of poor oral and dental health in people with dementia living in residential aged care facilities, there was inadequate research profiling and predicting the risk factors for the onset and progression of these oral diseases and conditions. Possible risk factors identified included: saliva dysfunction, polypharmacy, co-morbid medical conditions, swallowing and dietary problems, increased functional dependence, need for assistance with oral hygiene care, and poor access and utilisation of dental care.

It remains for ongoing research to identify if the poorer oral health status of older adults with dementia living in residential care is attributable to specific biological, medical, and pharmacological factors, and/or a decrease since dementia diagnosis in the ability to maintain their oral hygiene care and provide adequate dental treatment for them. Further research is also needed to evaluate the impact of improved plaque removal and oral hygiene care on the development of aspiration pneumonia in Australian residents.

Assessment tools

Assessment of oral health is a challenge for people with dementia as generally such assessment is dependent upon an individual's ability to report signs and symptoms, and remain co-operative throughout a dental assessment and dental treatment. Unfortunately, people with dementia may not be able to self-report any symptoms or signs of dental pain and problems. If people have dental or other related pain they may not be cooperative during a dental assessment and dental treatment.

Whilst the need for reliable assessment of oral and dental status of adults with dementia is clear from the oral epidemiological evidence, there is only a developing small literature base providing quality evidence on the use of successful oral health assessment tools for people with dementia. Further, there is no evidence published to date that has directly associated the use of an assessment tool within residential aged care facilities with an increase in the standard of oral hygiene care and improvement in oral health for residents with dementia.

Evidence on the use of oral assessment screening tools showed that successful assessment of residents with and without dementia by nursing staff required appropriate staff training in association with a dental professional. Coupled with appropriate training, an oral assessment screening tool designed for residents with dementia, (considering expert opinions in dentistry and nursing), was successfully used by nursing and care staff to identify residents requiring further review by dental professionals; this tool has undergone further research and trialling in Australia during 2003-2004. Expert opinion in the field indicated that oral assessment screenings by a staff member and then by a dentist would ideally be undertaken upon admission to a facility, and regularly thereafter by staff and/or dentists as required. Further research is needed to evidence this expert opinion.

Care strategies

As there are many organisational and financial challenges when conducting research with residents with dementia, to date there has been little published evidence, including clinical trials, on the effectiveness, feasibility or implementation of dental preventive strategies specifically for use in managing the oral health of older adults with dementia, especially those living in residential care.

Clinicians and researchers suggested that the following preventive strategies, which had been researched and used with the general population as well as some populations of adults with special needs (both institutionalised and community-living), were found to be effective in preventing oral diseases, and thus were relevant for use in the resident with dementia:

- regular dental checkups, preferentially at the residential aged care facility
- assistance to perform oral hygiene care as required, using dementia communication and behaviour management techniques
- regular tooth brushing and denture cleaning
- use of fluoride in sources such as water, toothpastes (including high concentration 5000ppm fluoride toothpastes), mouth rinses and gels
- use of the antimicrobial chlorhexidine gluconate (without alcohol) gel or mouth rinse (as a spray) for both dental caries (decay) and periodontal (gum) diseases
- use of sugarless gums or candies to stimulate saliva flow, and a saliva substitute
- monitoring of polypharmacy and medications with adverse oral effects such as "dry mouth".

Dental treatment and ongoing management

Evidence on management of oral hygiene care and dental treatment included interventions for oral hygiene care and staffing issues relating to the management of residents' dental needs. Studies looking at staffing issues indicated that implementation of dental interventions was given a low priority amongst care staff and the care intervention was most likely to be neglected. The most frequent reasons cited for not undertaking oral hygiene care and dental treatment interventions were lack of time and staff, and challenging resident behaviours. Evidence suggested that providing staff training, with a hands-on practical focus on oral health issues, improved nursing and care staff attitudes to residents' oral health and increased the level and quality of staff intervention. Further research is needed into the required frequency and the related effectiveness of oral hygiene care attempts and interventions for residents with dementia. Further research is also needed on the feasibility and effectiveness of developing specifically trained individuals in residential care who are responsible for dental issues such as residents' oral assessments, monitoring the provision of regular oral hygiene care, staff training in oral health issues, and organising dental appointments. Development of specifically trained staff in facilities who are responsible for dental issues was also suggested.

Preventive aids

Evidence on specific interventions for management of oral health in residents with dementia was limited. The use of the following adjunctive and preventive aids were found to be effective when introduced in conjunction with a staff training program:

- mouth props and modified dental equipment to increase carer access into residents' mouths
- modified toothbrushes, such as backward-bent and suction toothbrushes
- electric toothbrushes
- fluoride products
- saliva substitutes
- chlorhexidine gluconate antimicrobial products.

Management techniques

Evidence on impactors on the provision of oral health interventions showed that resident behaviours frequently impeded staff from performing oral care. Behaviours such as refusing to open the mouth, refusing oral hygiene care, not understanding directions, biting the toothbrush, being unable to rinse and physical/verbal aggressive responses were a problem when addressing oral hygiene care in residents with dementia. Despite the fact that behaviour problems were significantly evidenced as impacting upon the oral health status of adults with dementia, further research is needed to identify the best strategies to manage resident behaviour whilst attempting to provide oral hygiene care.

Expert opinion suggested that the following communication and behaviour management techniques would increase the potential for successfully performing oral hygiene care interventions, minimise resident "uncooperativeness", and maximise residents' abilities:

- developing a routine with oral hygiene care at the same time every day, not necessarily at bathing time and using several carers if required
- undertaking oral care in a quiet distraction-free environment
- use of short, simple sentences and directions

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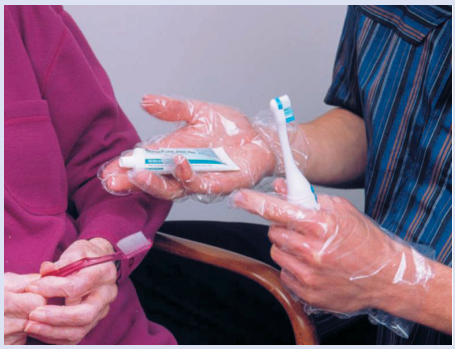
- use of task-breakdown and one-step instructions
- use of non-verbal cues eg. facial expressions, reassuring body contact
- gentle touch to promote trust
- using reminders and prompts for oral hygiene care
- providing diversion to occupy hands and prevent grabbing behaviours.
- use of dementia communication techniques such as chaining, bridging, and rescuing

Chaining involves a carer starting an oral hygiene care task, and the resident then helping to finish the task. Bridging uses several of the resident's senses, especially sight and touch, to help them better understand the task such as by placing a spare toothbrush in their hands. Rescuing is often used to help with completing hygiene care tasks for residents with dementia. If attempts at oral hygiene care are not going well, a carer can walk off and then have another carer come in and attempt the task - this is almost like "playing a goody and a baddy", but can work well with some uncooperative residents.



Implications for practice

This review highlighted a growing interest in the oral health of older Australians, especially those with dementia and those who are institutionalised. Whilst there was little specific evidence on the management of oral hygiene care for residents with dementia in residential aged care facilities, oral epidemiological studies highlighted the important need for the maintenance of oral health for this population. Three key oral health components in residential care were identified, with the responsibility for each component needing clear delineation: **oral assessment, oral hygiene care and dental treatment**. Research indicated that training of staff in the form of a comprehensive practically-oriented program addressing areas such as basic oral diseases, oral screening assessment, and hands-on demonstration of practical oral hygiene techniques and products was likely to have a positive impact on the management of oral hygiene care within residential aged care facilities.

There remains a paucity of evidence addressing the long-term effectiveness of preventive interventions for this specific population, and a lack of clinical trial evidence. Regular brushing with fluoride toothpaste, use of therapeutic fluoride products and application of therapeutic chlorhexidine gluconate products have been validated by research as effective for the general population and some populations with special needs. Until further research in this area of geriatric dentistry and specifically dementia is undertaken, these interventions remain the best option for providing oral hygiene care and maintaining oral health for adults with dementia in residential aged care facilities.

Recommendations

- regular toothbrushing with fluoride toothpaste **(Grade A)**
- drinking and use of fluoridated water in cooking etc **(Grade A)**
- application of therapeutic fluoride as an extra-strength 5000ppm toothpaste, a mouth rinse (in spray bottle) or, application of gel **(Grade B)**
- reducing intake and frequency of sugar consumption **(Grade A)**
- regular dental check ups and professional cleaning **(Grade A)**
- provision of hands-on oral health training programs for nursing and care staff to improve oral hygiene care provision to residents of residential aged care facilities **(Grade B)**
- use of antimicrobial chlorhexidine gluconate gel or mouth rinse/spray **(Grade B)**
- use of saliva substitutes or regular chewing of sugarless gum where appropriate to reduce xerostomia **(Grade B)**
- regular physical cleaning of dentures, naming of dentures, and removal of dentures at night **(Grade B)**
- use of mouth props and modified dental equipment to help with stabilising the jaw, break chewing or biting reflexes, improving mouth access **(Grade C)**
- staff to conduct a dental screening assessment and/or completion of a dental examination by a dentist upon residents' admission to facility and regularly thereafter **(Grade B)**
- improved relationships between dental professionals and residential care facility staff to ensure the dental team becomes a part of the residential care team **(Grade C)**
- development of specifically trained individuals in residential care who are responsible for dental issues such as residents' oral assessments, monitoring the provision of regular oral hygiene care, staff training in oral health issues, and organising dental appointments **(Grade C)**

Reference: 1. Pearson A, Chalmers J (2004) Oral hygiene care for adults with dementia in residential aged care facilities JBI Reports 2:65-113.

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