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Barriers and facilitators in providing oral care to nursing home residents, from the perspective of care aides: A systematic review and meta-analysis

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ABSTRACT

Background: Oral health of nursing home residents is generally poor, with severe consequences for residents' general health and quality of life and for the health care system. Care aides in nursing homes provide up to 80% of direct care (including oral care) to residents, but providing oral care is often challenging. Interventions to improve oral care must tailor to identified barriers and facilitators to be effective. This review identifies and synthesizes the evidence on barriers and facilitators care aides perceive in providing oral care to nursing home residents.

Methods: We systematically searched the databases MEDLINE, Embase, Evidence Based Reviews—Cochrane Central Register of Controlled Trials, CINAHL, and Web of Science. We also searched by hand the contents of key journals, publications of key authors, and reference lists of all studies included. We included qualitative and quantitative research studies that assess barriers and facilitators, as perceived by care aides, to providing oral care to nursing home residents. We conducted a thematic analysis of barriers and facilitators, extracted prevalence of care aides reporting certain barriers and facilitators from studies reporting quantitative data, and conducted random-effects meta-analyses of prevalence.

Results: We included 45 references that represent 41 unique studies: 15 cross-sectional studies, 13 qualitative studies, 7 mixed methods studies, 3 one-group pre-post studies, and 3 randomized controlled trials. Methodological quality was generally weak. We identified barriers and facilitators related to residents, their family members, care providers, organization of care services, and social interactions. Pooled estimates (95% confidence intervals) of barriers were: residents resisting care = 45% (15%–77%); care providers' lack of knowledge, education or training in providing oral care = 24% (7%–47%); general difficulties in providing oral care = 26% (19%–33%); lack of time = 31% (17%–47%); general dislike of oral care = 19% (8%–33%); and lack of staff = 22% (13%–31%).

Conclusions: We found a lack of robust evidence on barriers and facilitators that care aides perceive in providing oral care to nursing home residents, suggesting a need for robust research studies in this area. Effective strategies to overcome barriers and to increase facilitators in providing oral care are one of the most critical research gaps in the area of improving oral care for nursing home residents. Strategies to prevent or manage residents' responsive behaviors and to improve care aides' oral care knowledge are especially needed.

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What is already known about the topic?

- Oral health is generally poor in nursing homes, and care aides − a largely untrained and unregulated workforce that provides up to 80% of the direct care (including oral care) to nursing home residents − encounter multiple barriers in providing oral care to nursing home residents.
- Interventions to improve oral care must tailor to barriers and facilitators as perceived by care aides in order to be effective.

What this paper adds

- The multiple barriers and facilitators in providing oral care to nursing home residents, as perceived by care aides, are related to 1 residents, 2 residents members, 3 care providers, 4 organization of care services, and 5 social interactions.
- Residents resisting oral care is the barrier most frequently reported, followed by care aides lack of time, and care aides lack of oral care knowledge, education or training.
- Effective strategies to help care aides prevent or manage residents responsive behaviors, and to improve care aides oral care knowledge are lacking.

1. Background

Oral care in nursing homes needs urgent improvement. Internationally, studies have reported persistently high rates of preventable or treatable oral/dental problems for decades:

a) Caries in residents with natural teeth: 41%–79% (Arpin et al., 2008; Chalmers et al., 2002; Matthews et al., 2012; Maupome et al., 2002; Patrick et al., 2010; Porter et al., 2015; Shimazaki et al., 2004; Wyatt, 2002)
b) Gingivitis: 66%–74% of all residents (Matthews et al., 2012; Patrick et al., 2010)
c) Need of periodontal treatment: 32%–49% (Adegbembo et al., 2002; Arpin et al., 2008; Matthews et al., 2012)
d) Dental pain: 5%–17% (Adegbembo et al., 2002; Matthews et al., 2012; Porter et al., 2015)
e) Gum pain or discomfort: 3% (Arpin et al., 2008).

Increasing age is one of the strongest risk factors for poor oral health (Canadian Academy of Health Sciences, 2014; MacEntee, 2011), and the most vulnerable nursing home residents are at particularly high risk for avoidable oral/dental pain and suffering (Canadian Academy of Health Sciences, 2014). Consequences of poor oral health go beyond immediate physical impacts to severe psychological and social consequences associated with bad breath, changing dental aesthetics, or altered speech that negatively affect self-image and self-esteem (Haumschild and Haumschild, 2009; Locker and Slade, 1993; Slade et al., 1996). Poor oral health also raises health care costs and is linked to increased risk for malnutrition, aspiration pneumonia, respiratory disease, diabetes, cardiovascular disease, and premature death (Awano et al., 2008; Azarpazhooh and Tenenbaum, 2012; Emami et al., 2013; Frenkel et al., 2010; Haumschild and Haumschild, 2009; Taylor et al., 2000; US Department of Health & Human Services, 2000).

International evidence-based best practice guidelines for oral care of older adults suggest that care providers conduct regular assessments of residents' oral health status and provide, or supervise the provision of, oral care at least once daily (De Visschere et al., 2011; Johnson, 2012; O'Connor, 2012; Registered Nurses' Association of Ontario (RNAO), 2008). However, oral care for nursing home residents does often not meet best practice standards. In Canada, 59% of care providers surveyed felt rushed in their last shift when providing oral care to residents and 19% left oral care undone (Knopp-Sihota et al., 2015). In Norway, up to 50% of dentate residents and up to 30% of residents with dentures had an unacceptable oral hygiene status (Willumsen et al., 2012; Zuluaga et al., 2012). A US study reports that only 16% of residents had their teeth brushed and none had their teeth brushed for a minimum of two minutes (Coleman and Watson, 2006). In Norway (Willumsen et al., 2012; Zuluaga et al., 2012) and Australia (Philip et al., 2012), oral hygiene was significantly worse for residents who needed help with oral care than for independent residents, and worse for residents who resisted oral care. Observed oral care practices that are inconsistent with best practice standards include insufficient brushing of teeth or dentures, using fingers instead of a toothbrush, not wearing clean gloves, using improper tools and substances, not looking into residents' mouths, and not removing food leftovers (Chalmers and Pearson, 2005,,2012; Coleman and Watson, 2006).

Providing oral care to nursing home residents is a complex and challenging care task. With improved dental services, increasing numbers of residents enter nursing homes with some natural teeth and with more complex prostheses and bridges, leading to more complex oral care needs (McNally et al., 2014). Oral care is further complicated by cognitive or behavioral impairments. Two thirds of nursing home residents have dementia (a rising trend) (Estabrooks et al., 2013; Hirdes et al., 2011; Hoffmann et al., 2014; Stewart et al., 2014), a figure likely underestimated by at least 11% (Bartfay et al., 2013). They need extra assistance with oral care, and their lack of cooperation is a dominant and challenging barrier to providing oral care (Chalmers and Pearson, 2005; Jablonski et al., 2011a, 2011b; Mancini et al., 2010; Wardh et al., 2012).

Nursing home care providers often lack knowledge and training in providing proper oral care to residents (Blinkhorn et al., 2012; Boczko et al., 2009; Dharamsi et al., 2009; Preston et al., 2006; Sloane et al., 2013; Vanobbergen and De Visschere, 2005; Wardh et al., 2012; Young et al., 2008). Care aides (also called certified nursing assistants, personal care or support workers, or direct care providers (Hewko et al., 2015)) provide up to 80% of paid direct care, including oral care, in North American nursing homes (Berta et al., 2013; Bureau of Labor Statistics, 2014; Estabrooks et al., 2015a, 2015b, 2015c). They are a non-professional, largely unregulated workforce (Berta et al., 2013; Bureau of Labor Statistics, 2014; Estabrooks et al., 2015a, 2015b, 2015c; Hewko et al., 2015; Paraprofessional Healthcare Institute (PHI), 2013). Minimum training requirements vary substantially (Baughman and Smith, 2012; Berta et al., 2013; Hewko et al., 2015). For example, in Canada, required training hours for care aide programs range between 485 h (Alberta) and 840 h (Nova Scotia) (Association of Canadian Community Colleges (ACCC), 2012). In the US, training requirements for certified nursing assistants range between 75 h (federal minimum, accepted in 23 states) and 275 h (Missouri) (Baughman and Smith, 2012; Office of Inspector General et al., 2002). Up to 43% of care aides in Swedish nursing homes have little or no formal training (Daly and Szebehely, 2012). Care aides experience high workloads and frequent interruptions throughout their process of care; tasks last less than three minutes in over 40% of their work time (Mallidou et al., 2013). Therefore, the risk for reduced job satisfaction (Squires et al., 2015) and burnout (Estabrooks et al., 2013) is high for care aides, which may negatively affect their health and ultimately the quality of care (Kerr et al., 2005).

International research priorities for nursing homes highlight putting evidence-based care into practice and improving oral health (Morley et al., 2014). As outlined above, care aides play an important (yet largely unrecognized) role in improving oral health by providing proper oral care. Research on effective improvement of oral care in nursing homes is lacking (Albrecht et al., 2016; Coker et al., 2014; de Lugt-Lustig et al., 2014; Weening-Verbree et al., 2013), and tailoring interventions to barriers and facilitators is crucial to achieve desired change (Baker et al., 2015; Bartholomew et al., 2011; Hulscher et al., 2013). Care aides are central in providing oral care to nursing home residents, therefore care aides' perceptions of barriers and facilitators for better quality care are paramount in designing effective improve-