Barriers and facilitators to delivering everyday personal hygiene care in residential settings: A systematic review

Abstract

Introduction

Globally, the population is ageing, and more people live in residential care. Best practice in personal hygiene care may reduce distressing and debilitating skin and oral problems and improve resident outcomes. Although there is guidance on personal hygiene care, implementation may be a challenge.

Aim

To identify barriers and facilitators to delivering personal hygiene care for older persons in residential care settings.

Methods

Systematic review reported according to PRISMA 2020 guidance. Databases MEDLINE, CIHAHL, and PsychINFO were systematically searched using terms and synonyms "barriers", "facilitators", "hygiene", "older adults" and "residential care". Only empirical studies, reporting everyday skin and oral care, in English, peer reviewed and published from 2000-2021 were included. Due to methodological heterogeneity a narrative synthesis was conducted.

Results

Sixteen papers yielded nine categories of barrier or facilitator. Five related to skin and oral care: i) knowledge, ii) skills relating to hygiene care, iii) skills relating to supporting "uncooperative" behaviours, iv) lack of resources and v) time, workload and staffing levels. The remainder related only to oral care: vi) resident, family or carer motivation, vii) dislike of hygiene care, viii) carer attitudes and beliefs and ix) social influences and communication. Six papers reported interventions to optimise care.

Conclusion

This review highlights the persistent dearth of research into everyday personal hygiene practices, in particular skin hygiene in residential care. Existing literature identifies a range of barriers, however, there is a mismatch between these and reported interventions to improve practice.

Relevance to Clinical Practice

Advances in implementation science to support optimal care have yet to be applied to interventions to support hygiene practices in care homes and it is imperative this is addressed. Future interventions should involve: i) systematically and theoretically assessing barriers, ii) application of tailored behaviour change techniques iii) using these co-design pragmatic, locally acceptable strategies.

KEYWORDS

Nursing, Personal Hygiene, Barriers and Facilitators, Behaviour Change, Residential Homes, Skin, Oral

What does this paper contribute to the wider global clinical community?

- Everyday hygiene care is a fundamental part of nursing in all areas
- Review of the limited available literature reveals barriers and facilitators to best practice internationally
- Approaches to improving practice using widely available implementation science approaches are offered

Barriers and facilitators to delivering everyday personal hygiene care in residential settings: A systematic review

INTRODUCTION

Globally our population is ageing; it is predicted that between 2015 to 2050 the proportion of world population aged over 60 years will rise from 12 to 22% (World Health Organisation, 2021). The majority of older people live independently or supported in their own homes; however, some require a higher level of care that can only be provided in residential settings.

Ageing has a degenerative effect on the skin and can impair skin integrity, defined as an "altered epidermis and/or dermis, destruction of skin layers (dermis) and disruption of skin surface (epidermis)" (North American Nursing Diagnosis Association, 2018). The combination of intrinsic and extrinsic ageing processes results in a compromised skin barrier function, risk of infection, delayed wound healing and increased vulnerability to damage (Vanzi & Toma, 2018; Zouboulis et al., 2019). Xerosis (skin dryness), pruritus (itching), intertrigo (rash and soreness in skin folds) and skin tears are common in older people, particularly those living in care settings. Table 1 summarises available evidence on the prevalence of skin conditions in 'well' (defined as those without existing skin conditions) older people including, where available, care home residents. It is well known these bothersome conditions often go untreated and can lead to further damage to skin integrity (Lawton, 2018). Compromised skin barrier function increases risk of infection (Watkins, 2016) and allows irritants and allergens into the skin (Van Onselen, 2011). Pruritus caused by irritants creates the desire to scratch, which then causes further damage to the skin in a vicious, escalating cycle (Harrison & Spada, 2019).

Table 1: Prevalence of skin conditions in the 'well' older population and care home residents.

First author (reference)	Method	Population	Key findings
Beauregard and Gilchrest 1987	Skin examination and questioning	68 non-institutionalised volunteers aged 50 to 91	66% of the whole group reported skin problems, rising to 83% for octogenarians. Most common disorder was pruritus (itch).
Fleischer et al., 1996	Skin examination and questioning	204 people over 64 years of age	70% reported pruritus in the week before the examination; 34% asserted that their pruritus could not be ignored; and 64% described a non-itching skin condition that bothered them
Cowdell et al., 2018	Self-completed survey	1116 community dwelling older people	Most common concerns were dry skin (80.7%; n = 146) and itching (56.9%; n = 103). Significant association between dry skin and itch (Chi^2 (1) = 6.9; P < 0.05

Lichterfeld et al., 2016	Skin examination using Overall Dry Skin Score (Serup, 1995)	1710 older people in hospital and home care settings	Estimated prevalence of dry skin 48.8%
Hahnel et al., 2017	Systematic review and secondary data analysis	Older people predominantly in care settings	Xerosis prevalence ranging from 5.4% to 85.5% (range may be explained by methodological weaknesses)

Maintaining hygiene and comfort is essential for health and wellbeing and is one of the activities of daily living with which older people are most likely to need assistance (NHS Indicator Facts, 2017). Although usually a private function, many care home residents require assistance with hygiene care, delivered by staff and sometimes overseen by registered nurses. Few people would choose to seek help with this most personal activity and it is vital that dignity and personal choice are maintained (Šaňáková & Čáp, 2019). Evidence about the prevalence of common skin conditions including xerosis, pruritus and skin tears suggests that skin care guidance is not always applied in practice.

There is currently no gold-standard for day-to-day hygiene and emollient practices for care home residents. In a systematic review of evidence-based skin care for older people, Lichterfeld, et al., (2015) concluded that little is known about the relative benefits of different cleansing and moisturising regimens; a message reiterated in a critical discussion of nursing practice and research (Kottner et al., 2015). Existing low-quality studies suggest some hygiene and emollient standardised interventions (moisturising soap bar; combinations of water soak, oil soak, and lotion) may be more effective in terms of clinical measurement of dryness when compared with no intervention or standard care (Cowdell, et al., 2020). The mission to develop a robust evidence base for skin hygiene and emollient practices for older people must continue. However, it is not reasonable to do nothing in the interim. At present available studies and consensus of expert clinical knowledge to guide and improve practice must be drawn upon. This knowledge has been distilled into an algorithm (Lichterfeld et al., 2015) an adapted version focusing on everyday skin care is presented in Figure 1.

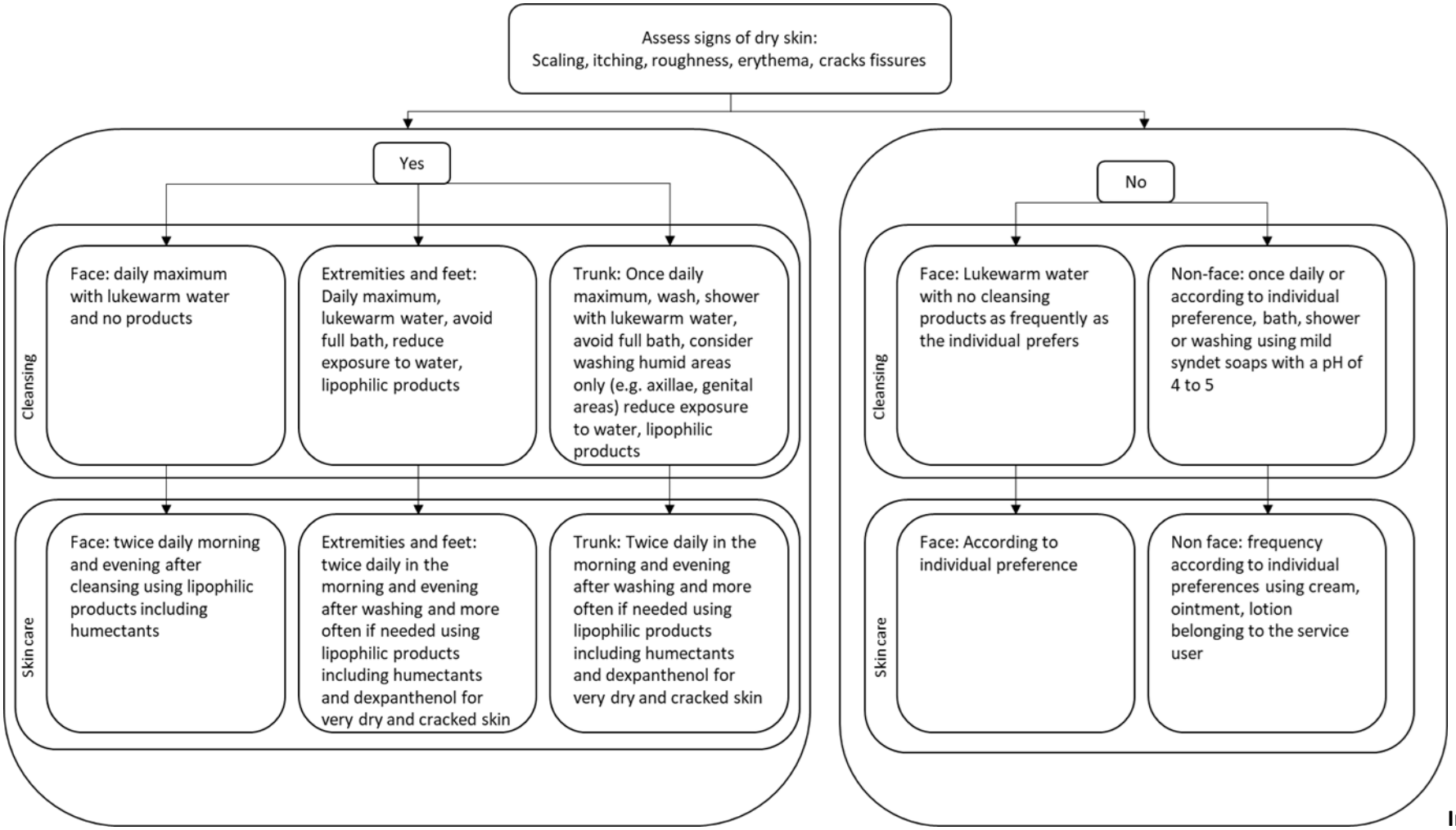

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Figure 1: Skin Care Algorithm dry skin only

In common with skin hygiene there is no 'gold standard' for oral hygiene practices for care home residents. However, it is recognised as a critical factor in maintaining health and wellbeing (Baumgartner et al 2015; Miegel & Wachtel 2009; Nihtilä et al 2017). Poor oral hygiene has adverse impact on quality of life. In one care home study residents with and without their own teeth reported oral problems over the previous month in 20.2 % and 30.9 % of cases respectively. Oral issues included tooth sensitivity, toothache, bleeding gums, dry mouth, loose natural teeth and loose or ill-fitting dentures (Porter et al 2015). Poor oral hygiene is also associated with colonisation of multiple potentially pathogenic microorganisms which can lead to significant systemic illness (Khadka et al 2021). Systematic review of interventions to promote delivery of best practice identified approaches including: i) one off in-house education sessions, ii) education with addition of 'train-the-trainer' and iii) education sessions with ongoing input from a dental hygienist. All studies were methodologically weak, intervention integrity was lacking and different outcome measure were used making it impossible to draw firm conclusions about effectiveness of interventions (Coker et al 2014).

In summary, the population is ageing and increasing numbers of older people are living in residential care. Xerosis, pruritus, intertrigo and skin tears are common and prevalence can be reduced by good skin hygiene care for which best practice guidance is available. However available data suggests best practice guidance is not always adopted. In relation to oral hygiene care it is known that prevalence of problems is significant and that these impact on health and quality of life for resident. Understanding barriers and facilitators to best practice may guide recommendations for interventions to support implementation of best practice by carers and nurses working in residential homes. The aim of this review was to identify the barriers and facilitators to delivering everyday personal hygiene care for older persons in residential care settings (with and without nursing).

Review question

What are the barriers and facilitators to delivering everyday personal hygiene care for older persons in residential care settings (with and without nursing)?

Methods

The search was conducted according to an adapted version of the Cochrane Handbook of Systematic Reviews (Higgins et al., 2022). Systematic review was appropriate to our aim as it requires explicit, prespecified and reproducible methods to systematically search for evidence and critically appraise,

summarise and synthesise findings to address a focused clinical question (Munn et al 2018; Nobel & Smith 2018). The review is reported according to The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) Checklist (Moher et al., 2009; Page et al., 2020) (Supplementary file 1). The review protocol was not registered.

Search strategy

The focus was on barriers and facilitators to skin and oral hygiene care likely to be delivered each day for residents, as opposed to condition focused care, for example skin care associated with incontinence or specific dermatological conditions. The search was conducted using the databases Cumulative Index of Nursing and Allied Health Literature (CINAHL complete), MEDLINE and PsychINFO. To be inclusive search dates were from 2000 to March 2021 for English language, empirical evidence papers published in peer reviewed journals. The Population (older people), Intervention (everyday skin or oral personal hygiene) and Context (barriers and facilitators) (PICo) framework (Moule et al., 2016) and Boolean operators and truncation were used. MeSH terms were not used to avoid exclusions. Inclusion and exclusion criteria are in Table 2. Backward and forward citation searching on included papers was conducted. Search strategy is presented in Table 3.

Table 2: Inclusion and exclusion criteria

Inclusion	**Exclusion**
Published from 2000	
Published in English Language	Published in non-English language (no resource for translation)
Peer reviewed empirical research	Opinion pieces, letters, commentary
Any research design	
Residential care homes (with or without nursing)	
Nurses and carers involved in hygiene care	

Table 3: Search strategy

barrier* OR obstacle OR challenge OR facilitator* OR lever* OR enabler* OR determinant AND Hygiene OR “skin care” OR “skin hygiene” OR “skin tear*” OR wash OR shower OR bath OR “bed bath” OR “dental hygiene” OR “dental care” OR “oral hygiene” OR “oral care” AND “older adult*” OR elderly or geriatric* OR aging or ageing OR senior* OR “older people” AND

"care home*" or "residential care" or "nursing home" or "long$term care"

Study Selection

Selection took place by two or more authors independently reviewing titles (MH, JD and FC), abstracts (JD and FC) and full texts (JD and FC) and reaching consensus. Two relevant systematic literature reviews, one relating to barriers and facilitators to *oral* hygiene care (Hoben et al., 2017) and another focusing on strategies (potential facilitators) to support *oral* hygiene care (Weening-Verbree et al., 2013) were identified and included. However, where the search returned papers covered in these reviews they were not included individually to avoid "double counting" results.

Quality assessment

Quality assessment was completed by JD on all included papers using the Centre for Evidence Based Management (2014) tool for surveys, the Template for Intervention Description and Replication (TIDieR checklist) (Hoffmann et al., 2014) for intervention development studies, the Joanna Briggs checklist for quasi-experimental studies (Joanna Briggs Institute, 2017) and the Critical Appraisal Skills Programme (CASP) tools (CASP, 2018) for all other included papers. Links to these tools are provided in Supplementary file 2. Exceptions to quality are reported in Table 4, summary of included papers. The most frequent exceptions to quality concerned lack of statistical precision and poor reporting about nature and tailoring of interventions.

Analysis

Data extraction was conducted by MH and JD into a bespoke spreadsheet to record the population and sample, aim, methods and findings relating to barriers and facilitators. Where possible, survey data were combined and reported percentages. Due to methodological heterogeneity the overall approach was a narrative synthesis (Ferrari, 2015).

Results

After removing duplicates, 1157 titles were screened and excluded 1096 as they did not address the review aim. Sixty-one abstracts were reviewed and 24 excluded leaving 37 for full text review. From these 21 were excluded leaving 16 papers in this review. Many of the excluded papers reported effectiveness of skin products for diagnosed skin conditions, some considered cosmetics and others

related to wound healing. Figure 2 outlines the selection process in an adapted PRISMA diagram and Table 4 presents a summary of included papers.

Figure 2: PRISMA diagram

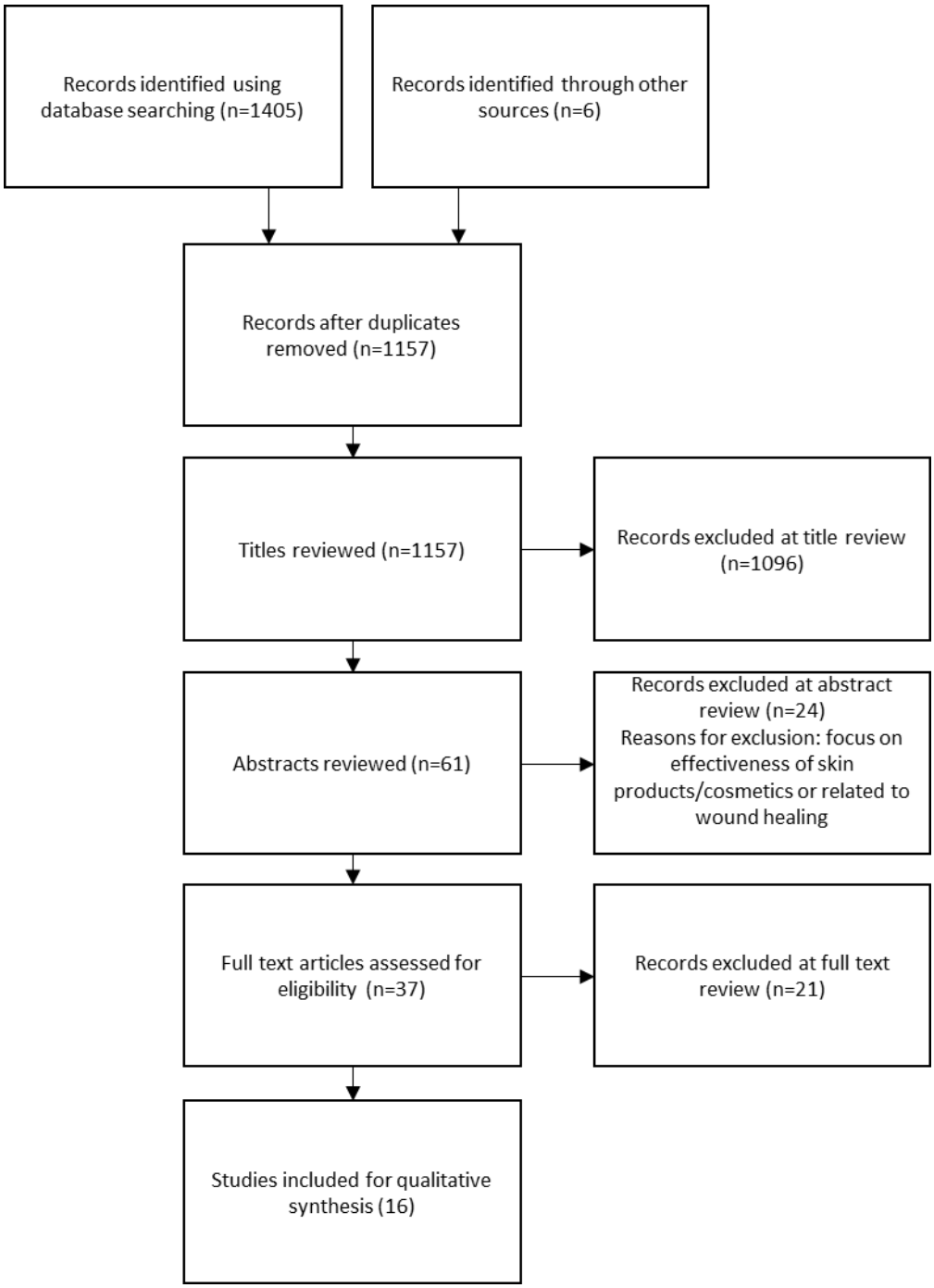

Table 4: Summary of included papers

First Author, year	Population and sample	Aim and *hygiene practice*	Method	Findings relating to Barriers and facilitators to personal hygiene care	Results relating to intervention impact (where relevant)	Quality appraisal
Calleson 2006	Intervention distributed to 15,453 nursing homes in the USA. Surveys distributed to 114 randomly selected homes.	Evaluate an intervention to support ***bathing*** older residents with dementia	Evaluation of a CD-ROM based intervention with optional exam' for credits	Facilitator: the training intervention evaluated well	639 nurses, 215 nursing assistants and 1143 administrators claimed credits during the one-year period. Exam' results were over 90% for each group. Users agreed that the materials would provide support in bathing residents.	8/12. Not named, no details on content and no modification or tailoring
D'Hont, 2012	Personal Support Workers in long term care facilities (n=8) in Canada	To understand incidents relating to ***bathing*** residents with dementia	Qualitative interviews	Barriers; lack of skills in managing service user behaviours such as refusal, physical and verbal abuse, lack of time, inadequate equipment/environment and communication difficulties. Facilitators; knowing the resident and developing knowledge and skills relating to dementia care.		8/10. It is unclear whether data saturation was achieved. The relationship of the interviewer with participants is not reported.
Fallon 2006	Staff (n=64) at two long term care facilities with a total of 111 beds for older people with dementia in Australia	To pilot an intervention (education, audit, care planning and reflection) to support ***oral hygiene***	Before and after study of the intervention. Measures were pre post knowledge questionnaires, care plan ratings and participant	Pre-intervention knowledge was good. Attitudinal barriers included a belief that tooth loss was inevitable with old age and it's wrong to brush if gums bleed.	Questionnaire: significant changes to beliefs. "Tooth loss is inevitable" agree pre-intervention 33.3%, post 16.7%. "I should stop brushing if gums bleed" agree pre 29.2 post 9.1. Significant improvement in care plan	10/12. No planned or actual intervention fidelity reported.

First Author, year	Population and sample	Aim and *hygiene practice*	Method	Findings relating to Barriers and facilitators to personal hygiene care	Results relating to intervention impact (where relevant)	Quality appraisal
			evaluation/critical feedback.		ratings in one home only 2.4-5.2/14. Critical feedback included: improved care plans, knowledge, relationships with oral health experts and practices.	
Goh 2016	Caregivers (qualified and unqualified) (n=94) in five nursing homes in Singapore	To investigate caregivers' views of ***oral health care***	Questionnaire survey	Barriers; lack of patient cooperation, poor self-efficacy, fear of harming the patient and high workload. Facilitators; sufficient knowledge and skills.		12/12. Although no validity testing of the questionnaire it was based on explanatory theory.
Hoang 2018	Care workers (n=20) from 13 residential facilities in Australia.	To establish the challenges to providing ***oral health care***	Qualitative interviews	Barriers; lack of time, competing priorities, high level of workload and too few staff. Facilitators; training.		10/10.
Hoben 2017	Care aides in residential settings. 45 papers (41 studies) were included and conducted in multiple countries. Participant	To establish the barriers and facilitators to providing ***oral care*** to residents	Systematic review of the literature	Barriers; residents resisting care, care providers' lack of knowledge, education or training in providing oral care, lack of time, a general dislike of oral care and lack of staff. Facilitators; residents who do not resist care, support from family, having sufficient time and supplies.		10/10.

First Author, year	Population and sample	Aim and *hygiene practice*	Method	Findings relating to Barriers and facilitators to personal hygiene care	Results relating to intervention impact (where relevant)	Quality appraisal
	numbers ranged from 3 to 1930					
Jablonski 2009	Nursing assistants (n=106) from two "not for profit" nursing homes in the USA	To examine knowledge, beliefs and engagement in ***oral hygiene care***	Questionnaire survey	Barriers; participant beliefs tooth loss was a natural part of ageing and some knowledge deficits. Facilitators; knowledge was generally good.		10/12. No statistical power calculation and no confidence intervals reported.
McKelvey 2003	Care assistants (n=15), nurses (n=2) and managers (n=3) at two residential facilities in New Zealand	To establish barriers to ***oral hygiene care***	Qualitative interviews	Barriers: Some knowledge deficits, time, inadequate skills and poor motivation. Facilitator; knowledge was generally adequate.		7/10. Relationship between researcher and participants not considered, not report of ethical approval and data analysis process not fully documented.
Simons 2000	18 residential homes in the UK, 7 of which participated in training to which 36 carers and 3 nurses attended. 213 residents were involved in pre/post oral examinations and questionnaires.	To establish the barriers to oral hygiene and the impact of an educational programme	90-minute educational sessions for groups of 4-8 carers involving demonstrations, assessment skills, information and samples. Pre and post training evaluation questionnaires.	Facilitator; training	Staff evaluated the programme positively and pre and 1 week post training. Questionnaires demonstrated knowledge gain. However, 1 week post training residents had noticed no difference to the oral care they received. At one year	8/12. No report of adaptation or modification and no planned or actual intervention fidelity.

First Author, year	Population and sample	Aim and *hygiene practice*	Method	Findings relating to Barriers and facilitators to personal hygiene care	Results relating to intervention impact (where relevant)	Quality appraisal
					follow up there was no significant difference in quality of oral hygiene care according to oral examinations of residents.	
Stančić, 2016	Caregivers (n=58) in four nursing homes in Serbia	To understand the attitudes and knowledge relating to ***oral care***	Questionnaire survey	Barriers: lack of time, uncooperative residents, lack of resources and residents being poorly motivated.		9/12. No pre-study consideration of statistical power, questionnaire not validated, no confidence intervals offered in the results.
Stein 2012	Nurses and nursing assistants in one long-term facility in USA. One nursing assistant completed the training	To develop a training programme, based on review of the literature aimed to support optimal ***oral hygiene care***	Intervention consisted leadership, information, "how to" instructions and strategies for managing resistant residents and a quiz. Trainee to coach others. Intervention evaluation methods not specified	Facilitator; train the trainer	The single person trained offered good oral hygiene care. They were unable to coach others due to workload and shift patterns.	10/12. The time the individual needed to devote and any tailoring of the intervention is not reported.
Thorne 2001	Administrators, care providers, residents and family	To identify elements of organisational	Secondary analysis of qualitative Interviews	Barriers; staff considering oral hygiene less important than other cares this was a barrier.		8/10. No detail of recruitment or ethics (not

First Author, year	Population and sample	Aim and *hygiene practice*	Method	Findings relating to Barriers and facilitators to personal hygiene care	Results relating to intervention impact (where relevant)	Quality appraisal
	(n=117) in 12 long term care facilities in Canada	culture associated with better adoption of ***oral hygiene care*** programmes by care staff		Facilitators; a visible presence and support of managers, an "oral health" champion, the home having a published philosophical or values statement.		expected given secondary analysis).
Tsunemi 2020	Non-registered care staff (n=19) who worked in elderly care facilities	To examine the impact of ***skin care*** training	Before and after study of an intervention consisting educational training; no other details are reported. Evaluated with before and after questionnaire and measures of skin health (e.g., dryness, scratch marks, Trans-epidermal water loss (TEWL), itching)	Facilitator; training for those delivering skin care.	Training increased the number of questions to residents about their skin, method, amount and frequency of moisturiser applied and more time was dedicated to skin care. There were significant improvements in dryness in lower extremities and TEWL.	7/9. No control group and only one pre and one post measurement.
Weening-Verbree 2013	Nurses and care assistants in nursing and care homes in Europe, USA, Australia and Canada. There were 20 included papers with participant	Review the effectiveness of strategies to support ***oral hygiene care***	Systematic review	Facilitator: Interventions focused on knowledge and self-efficacy and had a positive effect on knowledge and beliefs of carers. There was little evidence of improved oral hygiene care or improvements in oral health.		10/10.

First Author, year	Population and sample	Aim and *hygiene practice*	Method	Findings relating to Barriers and facilitators to personal hygiene care	Results relating to intervention impact (where relevant)	Quality appraisal
	numbers ranging from 41 to 2000.					
Weening-Verbree 2021	Staff in 21 nursing homes in the Netherlands participating in questionnaires (n=409) and focus groups (n=14)	To explore the perceived barriers and facilitators to daily ***oral health care***	Questionnaire surveys with nursing staff and managers and focus groups with nursing staff	Barriers; finding the task unpleasant, uncooperative behaviour of residents, lack of education, time and lack of products. Facilitators; perception of oral hygiene as important.		Questionnaire: 11/12. Not validated. Focus groups: 9/10. Saturation not discussed.
Young 2008	Registered nurses and managers (n=109) in 28 care homes in the UK	To establish barriers to ***oral health care*** and establish any changes in knowledge pre and post education	Telephone survey to establish barriers pre intervention and pre post intervention knowledge test	Barriers: Not receiving training (nurses 74%, managers 85%), lack of resident cooperation (nurses 76%, managers 82%) and time (nurses 86%, managers 79%)	There were pre and post improvements in knowledge with regard to care of oral mucosa, dry mouth, natural teeth and dentures.	10/12. No power calculation or confidence intervals.

Characteristics of included papers

Of the sixteen papers included in the review, only three related to skin hygiene care (Calleson et al., 2006; D'Hondt et al., 2012; Tsunemi et al., 2020) the remaining thirteen related to oral hygiene care Ten considered barriers, facilitators, challenges and experiences generally with delivering hygiene care (D'Hondt et al., 2012; Goh et al., 2016; Hoang et al., 2018; Jablonski et al., 2009; McKelvey et al., 2003; Stančić et al., 2016; Weening-Verbree et al., 2021; Young et al., 2008). Six studies focused on interventions to improve hygiene care practice (Calleson et al., 2006; Fallon et al., 2006; Simons et al., 2000; Stein et al., 2012; Tsunemi et al., 2020; Weening-Verbree et al., 2013). Studies were conducted between 2000 and 2021 in; USA (Calleson et al., 2006; Jablonski et al., 2009; Stein et al., 2012) Canada (D'Hondt et al., 2012; Thorne et al., 2001), Singapore (Goh et al., 2016), Australia (Fallon et al., 2006; Hoang et al., 2018), Japan (Tsunemi et al., 2020), New Zealand (McKelvey et al., 2003) the UK (Simons et al., 2000; Young et al., 2008), multiple countries (including Europe, USA, Australia, Canada and Japan) (Hoben et al., 2017; Weening-Verbree et al., 2013), Serbia and the Netherlands (Weening-Verbree et al., 2021). All included care staff with seven specifying the inclusion of registered nurses (Calleson et al., 2006; McKelvey et al., 2003; Simons et al., 2000; Stein et al., 2012; Thorne et al., 2001; Weening-Verbree et al., 2013; Young et al., 2008). Number of participants ranged from 1 to 2000. Method of enquiry included seven questionnaire studies (Calleson et al., 2006; Goh et al., 2016; Jablonski et al., 2009; Stančić et al., 2016; Tsunemi et al., 2020; Weening-Verbree et al., 2021), one telephone survey (Young et al., 2008) two systematic reviews (Hoben et al., 2017; Weening-Verbree et al., 2013) (including 52 and 20 studies respectively), four interview studies (D'Hondt et al., 2012; Hoang et al., 2018; McKelvey et al., 2003; Thorne et al., 2001), two that included data from questionnaires and interviews/critical reflection (Fallon et al., 2006; Simons et al., 2000) and in one study the methods of intervention evaluation were unclear (Stein et al., 2012). Of the two systematic reviews one related to *barriers and facilitators* to oral hygiene (Hoben et al., 2017) and the other focused on *interventions* to support oral care (Weening-Verbree et al., 2013).

Nine categories of barrier and facilitator were identified as illustrated in Figure 3. Five of these related to both skin and oral care (illustrated in green): i) knowledge, ii) skills relating to hygiene care, iii) skills relating to supporting "uncooperative" or "aggressive" residents, iv) lack of resources and v) time, workload and staffing levels. The remainder related only to oral care (illustrated in blue) vi) resident, family or carer motivation, vii) dislike of hygiene care, viii) carer attitudes and beliefs and ix) social influences and communication. Each of these are presented in turn. It was possible to combine data from eight survey papers (Fallon et al., 2006; Goh et al., 2016; Jablonski et

al., 2009; Stančić et al., 2016; Tsunemi et al., 2020; Weening-Verbree et al., 2021; Young et al., 2008) and one systematic review (pooled estimates) (Hoben et al., 2017) numerically to give some indication of the degree of influence each factor has. These are presented in rank order according to mean percentage across papers (Table 5). Where survey questions were positively framed (e.g., I have sufficient knowledge relating to hygiene) results were reversed in order synthesise and present results consistently as barriers. In one survey study (Goh et al., 2016) a Likert scale was used and responses for "strongly agree" and "agree" were combined to allow synthesis of data with other studies.

Figure 3: Barriers and facilitators to personal hygiene care

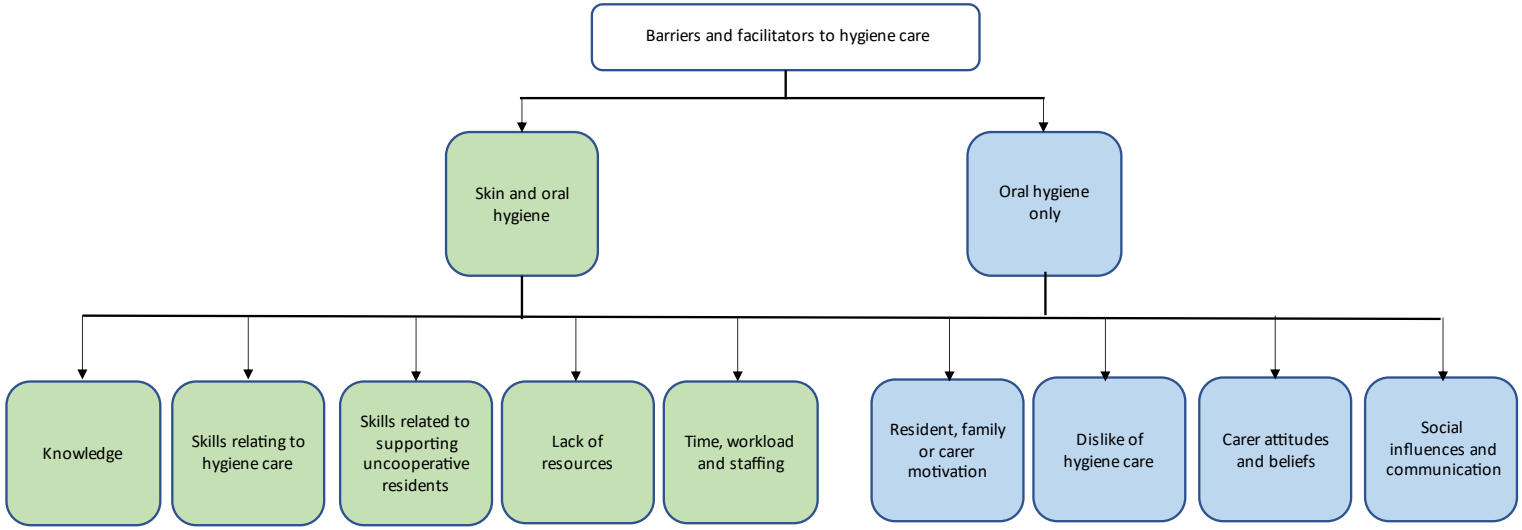

Table 5: Survey results of barriers to personal hygiene care (ranked %)

Barriers	Fallon 2006 (oral) pre post (combined data 2 sites)	Goh 2016 (oral)	Hoben 2017 (oral) pooled estimates	Jablonski 2009 (oral)	Stančić 2016 (oral)	Tsunemi 2020 (skin) pre/post	Weening-Verbree 2021 (oral)	Young 2008 (oral) pre/post	Mean %
Carer lack of motivation	-	96.9	-	-	-	-	-		96.9
Lack of skills		-	26 (19-33)	-	-	Moisturiser: Pre 100 Post 89.5	83		74.6
Lack of confidence/ fear of harming	-	51.1	-	-	-	-	-		51.1
Resident lack of cooperation	-	12.5	45 (15-77)	-	32.8	-	85	79	50.8
Lack of time	-	8.5	31 (17-47)	-	39.7	-	-	82.5	40.4
Attitudes and beliefs	Tooth loss inevitable Pre 32.5 Post 23	85.1	-	16.3	-	-	-		39.2
Insufficient knowledge	Stop brushing if bleeding: Pre 33.6 Post 9.5 Use toothpaste on dentures: Pre 83.8 Post 58.2		24 (7-47)	-	-	Dry skin: Pre 63.2 Post 36.8	58	Dental mucosa: Pre 67 Post 9 Dry Mouth: Pre 48 Post 0 Teeth: Pre 70 post 24 Denture: Pre 64 Post 28	38.6
Resident lack of motivation	-	54.2	-	-	6.9	-	-		30.5
Lack of staff		-	22 (13-31)	-	-	-	-		22
Dislike delivering hygiene care		-	19 (8-33)	-	-	-	10		14.5
Lack of resources		6.4	-	-	20.7	-	-		13.5

Barriers and facilitators to everyday personal hygiene care

i) Knowledge

Knowledge about hygiene care was identified as either a barrier or a facilitator in ten studies whether this was relating to skin (D'Hondt et al., 2012; Tsunemi et al., 2020) or oral care (Fallon et al., 2006; Goh et al., 2016; Hoang et al., 2018; Hoben et al., 2017; Jablonski et al., 2009; McKelvey et al., 2003; Weening-Verbree et al., 2021; Young et al., 2008). Where surveys asked about knowledge deficit, responses ranged from 7% (Hoben et al., 2017) to 58% (Weening-Verbree et al., 2021). The nature of the knowledge deficit varied across studies for skin hygiene and included knowledge on bathing people with dementia (D'Hondt et al., 2012) and ability to recognise dry skin, problems with skin and the use of moisturisers (Tsunemi et al., 2020). Where the specific nature of knowledge deficits was reported for oral hygiene the majority of these related to modes of delivery of oral care (Fallon et al., 2006; Hoang et al., 2018; Hoben et al., 2017; Jablonski et al., 2009; Weening-Verbree et al., 2021; Young et al., 2008) and in particular the use of products (Hoang et al., 2018; Jablonski et al., 2009). There was some lack of clarity on how to clean dentures (Fallon et al., 2006; Jablonski et al., 2009; Young et al., 2008), the benefits of fluoride and signs of disease (McKelvey et al., 2003). When participants engaged in training this enhanced their knowledge (Fallon et al., 2006; Goh et al., 2016; Hoang et al., 2018; Simons et al., 2000; Stančić et al., 2016; Stein et al., 2012) but not all participants had access to formal or on-the-job training (Hoang et al., 2018) and workload and time constraints meant bringing staff together for training could be difficult (Fallon et al., 2006). One study found training resulted in improved skin health for residents with dryness in lower extremities and trans-epidermal water loss being significantly improved (Tsunemi et al., 2020). Another found improved care planning (Fallon et al., 2006). A third found no difference in oral hygiene behaviours despite increased knowledge (Simons et al., 2000). A review of strategies to support oral health identified almost exclusively educational strategies, which had a positive effect on knowledge and health care beliefs but no impact on outcome measures relating to oral health (Weening-Verbree et al., 2013). Staff reported knowledge deficits particularly in relation to oral hygiene care. However, improvements in knowledge did not consistently lead to changes in practice.

ii) Skills relating to hygiene care

Skills deficits were reported as barriers in three studies and related to both skin (D'Hondt et al., 2012) and oral (Goh et al., 2016; Hoben et al., 2017) hygiene. A review reported oral hygiene skills deficits ranging from 19 to 33% (Hoben et al., 2017). There was some evidence that training addressed skill deficits (Stein et al., 2012; Tsunemi et al., 2020) in one study participants reported they understood how to apply moisturising agent *"sufficiently to instruct"* improving from 0 to 10.5%

(p=0.003) (Tsunemi et al., 2020). Evidence about the impact of skills training relating to hygiene care remains weak.

iii) Skills relating to supporting uncooperative or aggressive residents

More frequently reported skills deficits related to supporting residents with challenging behaviours rather than delivering the care in and of itself. Again these related to both oral (Fallon et al., 2006; Goh et al., 2016; Hoang et al., 2018; Hoben et al., 2017; Stančić et al., 2016; Stein et al., 2012; Weening-Verbree et al., 2021; Young et al., 2008) and skin hygiene (D'Hondt et al., 2012). Reports of challenging behaviours included hitting, throwing objects, punching, kicking, slapping, spitting or being verbally aggressive through swearing, name calling or crying (D'Hondt et al., 2012; Hoben et al., 2017). These behaviours were often attributed to the resident having cognitive problems such as dementia (D'Hondt et al., 2012; Hoang et al., 2018) and were frequently encountered, for example one study reported that in a typical shift a carer would experience these reactions approximately three times (Hoben et al., 2017). These behaviours were distressing to care staff and meant they were less likely to deliver hygiene care (Goh et al., 2016). Carers recognised they had a duty to deliver optimal hygiene (D'Hondt et al., 2012) but 32.8% respondents in one study reported delivering care to *"aggressive"* residents *"impossible"* (D'Hondt et al., 2012). Carers felt conflicted. In one study a participant said: *"It felt like we were neglecting her needs but in a way you couldn't go beyond what she wanted"* (D'Hondt et al., 2012). Study participants suggested some strategies for managing these behaviours, for example, coaxing, choosing a time the resident is calm and distracting the resident (D'Hondt et al., 2012). However, although interventions to address hygiene skills deficits were reported (Stein et al., 2012; Tsunemi et al., 2020; Weening-Verbree et al., 2013) few strategies addressed how to support residents who have aggressive behaviours. Calleson et al., (2008) distributed a CD-ROM relating to skin hygiene with people with dementia. Those who accessed this evaluated the programme well and considered it may have an impact on practice, however, no specific practice measures (self-report or otherwise) were assessed. The review of interventions to support oral health care (Weening-Verbree et al., 2013) included 20 papers only three of which (Boczko et al., 2009; Fallon et al., 2006; Kullberg et al., 2010) reported an intervention to support residents with dementia or behaviour problems. The study by Stein et al., (2012) included material on supporting uncooperative residents but was received and evaluated by only one carer. The impact of interventions relating to uncooperative behaviour is unclear.

iv) Lack of resources

Four studies relating to both skin (D'Hondt et al., 2012) and oral hygiene (Goh et al., 2016; Stančić et al., 2016; Tsunemi et al., 2020) identified lack of resources as a barrier. In the case of skin hygiene

this related to equipment challenges such as poor or uncomfortable shower commodes, equipment not being suitable for bigger people and too few mechanical lifts (D'Hondt et al., 2012). For oral care resource deficits related to equipment to clean teeth and dentures (Goh et al., 2016). In one study 95.7% of participants agreed or strongly agreed that they would do their *"best to care for the older's teeth/dentures"* regardless of resource limitations (Goh et al., 2016). Reports of inadequate resources ranged from 6.3% (Goh et al., 2016) to 20.7% (Stančić et al., 2016). Lack of resources was an issue in several studies but there is no evidence of resolution of the problem.

v) Time, workload and staffing

Time, workload or understaffing was identified as a barrier in eight papers, relating to both oral (Goh et al., 2016; Hoang et al., 2018; Hoben et al., 2017; McKelvey et al., 2003; Stančić et al., 2016; Weening-Verbree et al., 2021) and skin hygiene care (D'Hondt et al., 2012 by between 8.5 (Goh et al., 2016) and 29.7% (Stančić et al., 2016) of participants. Staff reported conflicts between competing priorities and the pressure of time whilst acknowledging rushing a bath would compromise safety (D'Hondt et al., 2012). Similarly for oral hygiene time constraints were a challenge with many tasks to complete in too little time with too few staff (Hoang et al., 2018). Participants reported this being worse during times of staff sickness, absence or during periods of staff turnover and acknowledged the impact this had on the quality of oral hygiene provided. In one study a participant said *"I can't really say "yes we're doing a good job all the time" because we've got lots of new staff"* (Hoang et al., 2018). One paper reported oral care being left undone due to lack of time (Hoben et al., 2017). As is often the case in health and social care time is often cited as a barrier to delivering best care, this is exacerbated by high staff turnover. Therefore, interventions to improve care need to be designed in partnership with staff and adapted to context to increase uptake.

vi) Resident, family and carer motivation

Where resident, family or carer motivation was a barrier this related to *oral* rather than skin care. Three studies reported resident motivation as a barrier to oral hygiene delivery (Goh et al., 2016; Hoang et al., 2018; Stančić et al., 2016). Between 6.9% (Stančić et al., 2016) and 54.2% (Goh et al., 2016) of study participants reported that residents lacked motivation for oral hygiene and did not want their help. Where residents did not see oral health as a priority they did not spend money on dental care making it difficult for staff to maintain oral hygiene (Hoang et al., 2018). In one study a participant reported *"basically, those who have their original teeth, are very reluctant to spend a cent on their care . . . they don't value their oral health"* (Hoang et al., 2018). Similarly, when family members did not see oral hygiene as important or as a priority, they did not buy the additional products necessary (Hoben et al., 2017). Four papers reported oral hygiene as being of low priority

to carers (Hoang et al., 2018; Hoben et al., 2017; McKelvey et al., 2003; Weening-Verbree et al., 2013). In one 66% agreed and 30.9% strongly agreed with the statement *"brushing the older's teeth/dentures to maintain oral health is not important to me"* (Goh et al., 2016), in another a carer reported *"I'd say it's very much a token gesture"* (McKelvey et al., 2003). As skin and oral care is essential for health and wellbeing motivation as a specific barrier for different groups must be addressed when designing interventions.

vii) A dislike of providing hygiene care

Two papers reported carers dislike of providing oral care as a barrier in between 10% (Weening-Verbree et al., 2021) and 19% (Hoben et al., 2017) of carers. This was due to beliefs about the priority of oral care, fear of causing injury or pain, fear of being bitten and disgust or repulsion (Hoben et al., 2017). This barrier was not reported for skin hygiene care. Dislike of the procedure was related to oral hygiene care only. Future interventions need to emphasise why this care is so important and how it can best be delivered skilfully to minimise likelihood of adverse outcomes for residents or staff.

viii) Carer attitudes and beliefs

Carer attitudes and beliefs were barriers identified in four studies for oral care only (Fallon et al., 2006; Goh et al., 2016; Hoben et al., 2017; Jablonski et al., 2009). A significant belief was tooth loss being an expected part of ageing (81.5% (Goh et al., 2016), 60.6% (Jablonski et al., 2009), 32.5% (Fallon et al., 2006)). However, in one study all caregivers agreed or strongly agreed that optimal oral hygiene would improve the health of older people (Goh et al., 2016) and in another participants had believed the value of brushing, flossing and the link between healthy mouth and body (Jablonski et al., 2009). These reported barriers are comparable with Hoben's literature review where it is suggested educational interventions are effective in changing these (Hoben et al., 2017). In addition to beliefs about the lack of effectiveness of oral hygiene care, there were fears that oral care may cause harm for the older person (Goh et al., 2016; Hoben et al., 2017). Carers attitudes and beliefs need further exploration to understand their origin and begin to address them.

ix) Social influences and communication

Three papers reported social influences and communication as facilitators to optimal oral hygiene care (Goh et al., 2016; Hoben et al., 2017; Thorne et al., 2001). No study reported this for skin hygiene. The positive expectations of their manager, the residents and their families (Goh et al., 2016), leadership, culture (Hoben et al., 2017; Thorne et al., 2001) and feedback on performance (Hoben et al., 2017) were considered positive influencers of good oral care. Good relationships with

team members facilitated good communication which in turn led to the provision of quality oral care. This theme offers some useful indicators of potential facilitators to best practice across both oral and skin hygiene care.

Discussion

Sixteen papers addressed the question: What are the barriers and facilitators to the delivery of everyday personal hygiene care in residential settings? Thirteen papers related to oral hygiene care including two systematic reviews, one relating to barriers and facilitators and one to interventions to support oral care. These included 52 and 20 papers respectively, resulting in consideration of data from a total of 75 papers. There were only three included papers addressing skin hygiene care. Nine categories were derived. Five related to both skin and oral hygiene care the remainder related only to oral hygiene only.

Perhaps the most important finding from this review is the wealth of literature relating to barriers and facilitators to oral hygiene and the dearth relating to skin hygiene. It is not possible to account for this deficiency. It is unlikely to be attributable to prevalence of oral versus skin problems. Up to 50% of residents with their own teeth and up to 30% of residents with dentures have unacceptable oral hygiene status (Willumsen et al., 2012). This compares with prevalence estimates of up to 85.5% of older people living in care homes having skin problems (Hahnel et al., 2017). Equally, there is little difference between the severities of resulting health consequences when there is a failure to deliver either of these hygiene cares. If oral care is omitted the result may be malnutrition, respiratory disease, diabetes and cardiovascular disease (Azarpazhooh & Tenenbaum, 2012). Failure to provide skin care can result in skin cracks and tears, infection and chronic wounds such as ulcers (Blume-Peytavi et al., 2016). It is possible to speculate that skin hygiene care is "taken for granted" by practitioners and researchers. There is a clear need to raise awareness on the importance of this to the health and wellbeing of care home residents.

The second finding worthy of discussion is the mismatch between identified barriers and strategies to address these. Several of the included studies cite being unable to manage the frequent, "*uncooperative*" behaviours of residents as a key barrier to personal hygiene care (D'Hondt et al., 2012; Goh et al., 2016; Hoang et al., 2018; Hoben et al., 2017; Stančić et al., 2016; Stein et al., 2012; Weening-Verbree et al., 2021). Yet, of 20 studies included in a review of interventions to support personal care, only three include content relating to uncooperative residents (Hoben et al., 2017). Whilst educational interventions were frequent (Stein et al., 2012; Tsunemi et al., 2020; Weening-Verbree et al., 2013) they focused on addressing knowledge, skills and attitudinal deficits. No studies were identified that sought to address barriers relating to the other identified themes

including lack of resources, time, workload, staffing, lack of motivation or a dislike of providing personal hygiene care. Interventions tailored according to assessed barriers are known to be more effective than those that are not (Baker et al., 2015). It is therefore suggested, in relation to oral hygiene, where there are well documented barriers to optimal practice, interventions are designed to *address* these. Two interventions to improve skin hygiene care in residential homes (Calleson et al., 2006; Tsunemi et al., 2020) were identified both of which were "educational". One intervention impacted on carers' knowledge about dry skin, the time dedicated to skin care and the amount and frequency of moisturiser applied (Tsunemi et al., 2020) the other evaluated well but no other outcomes were measured (Calleson et al., 2006). Finally, none of the included survey papers used a validated questionnaire. One was *"based on topics described in the current guidelines"* (Weening-Verbree et al., 2021); one was underpinned with the Theory of Planned Behaviour and reported good test-retest reliability (Goh et al., 2016).

There were a number of strengths and limitations to this review. The approach was systematic, robust, inclusive and transparently reported. As with all searches, databases may not capture all eligible studies due to inconsistent terminology and indexing. To be comprehensive papers from 2000 onwards were identified. However, in doing so papers that report outdated practices, for example restraining or medicating people who are "aggressive" to allow hygiene care to be delivered have been included. Furthermore, with the evolution of technology, some reported interventions are now redundant, for example the use of CD-ROMs. Many included papers were surveys that offered "tick box" responses allowing little interpretation of findings. It is not known whether the barriers identified for oral hygiene practices are transferrable to skin hygiene practice, thus potentially limiting the transferability of the findings. Included studies took place in a range of countries with different cultures and health and social care policy and practice, again potentially limiting transferability. There was insufficient research for us to make comparisons between barriers for qualified (e.g., registered nurses) and unqualified carers; it is possible that barriers differ for these groups.

Conclusion

Globally, the population is ageing, and more people are living in residential care. Personal hygiene care is fundamental to nursing practice and can reduce the prevalence of common skin and oral conditions which are distressing, costly and increase morbidity. Published best practice guidance is not always adopted. The persistent dearth of research into barriers and facilitators to best practice in personal hygiene care in residential homes is highlighted. Existing literature identifies a range of barriers, however, there is a mismatch between these and the reported interventions to improve

practice. There is a need for further research to identify best practice and better understand barriers and facilitators to implementation, and future interventions should be developed in line with existing, theory-based approaches to implementation science.

Relevance to clinical practice

Nevertheless, recommendations for practice can be offered. Knowledge of how best to implement optimal care has increased exponentially over the last 15 years. There is evidence that theoretically underpinned interventions (Skivington et al., 2021) tailored (Baker et al., 2015) to assessed barriers and facilitators (Michie et al., 2005) are likely to have more impact and be more cost effective (omitting unnecessary intervention components). This new knowledge has not yet been applied to intervention to support hygiene practices in care homes. It is therefore suggested in planning and testing future interventions should follow the process of: i) systematically and theoretically assessing barriers (Michie et al., 2005; Skivington et al., 2021) which will require development of a valid and reliable questionnaire instrument, ii) from assessed barriers mapping to (practice) behaviour change techniques (Michie et al., 2008) iii) and from these co-designing (Cowdell et al., 2020) with practitioners and service users pragmatic, tailored (Baker et al., 2015) locally acceptable support strategies (Sekhon et al., 2017). Using this approach maximises opportunities to improve the skin health practice and therefore the health and wellbeing of care home residents.

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