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The best evidence for assisted bathing of older adults with dementia: A comprehensive systematic review

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Abstract

The objective of this thesis was to examine the best available evidence concerning how to minimise agitated behaviours in older adults with dementia who are being assisted with their bathing. Specifically, the goal was to develop a clinical guideline based on the identified evidence for formal and informal caregivers and nurses who supervise non-qualified caregivers. The comprehensive systematic review method was used to determine the best available evidence on this topic. To identify multi-dimensional evidence that can be used to develop useful and context-specific practices, textual opinion papers were considered as alternative sources of "knowing how" type of knowledge to augment the qualitative and quantitative evidence.

A search of various databases and hand-searching identified 299 papers. Twenty-eight papers were assessed for methodological quality and from this 15 papers were included for the review: five experimental and quasi-experimental studies, two qualitative studies and eight textual opinion papers. In the quantitative component, statistical pooling was not possible due to the clinical and methodological heterogeneities of the studies, and consequently findings were analysed in a narrative format. The identified quantitative evidence supports the person-centred showering approach and towel bath/thermal bath both for reducing agitated behaviours of people with dementia and improving caregivers' psychological status. Playing the preferred music of older adults who have dementia is also recommended for reducing the frequency of aggressive behaviours during bathing.

Regarding the qualitative component, 13 findings from the two included studies were aggregated into five categories and two meta-syntheses: 1) There should be a strategy to facilitate residents' sense of control and caregivers should have relevant assessment and communication skills; and 2) There should be a strategy to promote safe assisted bathing while the patient's dignity is respected. In the textual component, the eight included papers were aggregated into 63 findings and 14 categories, and from these four meta-syntheses were developed: 1) Assisted bathing should be considered an opportunity for positive and respectful

human interaction with a resident in order to minimise aggressive behaviour; 2) A creative and flexible care plan that is implemented with organisational support should be in place to provide effective assistance in minimising aggressive behaviours during bathing; 3) Practice should change from a rigid custodial task-oriented approach with a management perspective to a therapeutic person-centred approach with a prevention focus; 4) There should be a strategy to provide a safe, comfortable and private bathing environment with effective and appropriate management of orthopaedic pain.

Finally, a Best Practice Information Sheet was developed based on the evidence from the three components of the review to inform and support caregivers who provide direct assistance to people with dementia. The project successfully demonstrated that textual evidence can contribute to the identification of 'knowing how' type of evidence where there is a lack of qualitative evidence. The evidence-based healthcare movement has been criticised for failing to meet the needs of clinicians in the reality of everyday practice. In order to fill the evidence and practice gap, healthcare practice should be informed by multiple types of evidence, namely quantitative evidence, qualitative evidence and textual evidence.

Declaration:

This work contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution to Rie Konno and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying, subject to the provisions of the Copyright Act 1968.

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RIE KONNO

Date: / /

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My home town has been lost forever due to the tsunami but I believe that the loss of thousands of people made it all the more important for me to complete this thesis.

Chapter I: Introduction

The objective of this study was to examine the best available evidence on how to minimise agitated behaviours in older adults with dementia who are being assisted with their bathing. Specifically, the goal was to develop a clinical guideline based on a systematic review of the evidence. The target users of the clinical guideline were firstly, formal and informal caregivers either in residential aged care settings or community settings; and secondly, nurses who supervise non-qualified caregivers. In order to provide background information on this topic, the chapter briefly overviews agitated behaviours in older adults who have dementia and discusses the systematic review method, with a specific focus on two different types of knowledge required to provide optimal healthcare practice. An overview of the systematic review method used here is also presented. Finally, how this thesis is structured is described.

Background

Agitated behaviours are a commonly found dementia-related symptom. "Agitated behaviours" is in fact an umbrella term that encapsulates diverse disruptive behaviours related to dementia including verbally or non-verbally aggressive behaviours, and verbally or non-verbally agitated behaviours.[1-3] Agitated behaviours are the major cause of stress and burden for both formal and informal caregivers.[4-7] The stress and burden of dealing with dementia-related agitated behaviours often result in institutionalisation of family members with dementia. A significant link[6] was reported between the occurrence of agitation with increased institutionalisation ($p \leq 0.004$). Similar findings have been documented in other studies.[5,8]

Personal care-related agitated behaviours have a particularly high prevalence both in residential care and community settings.[9,10] Of all personal care activities, assisted bathing is one of the daily care responsibilities that is strongly related to the agitated behaviours of people who have dementia.[11-13] It was reported that 65% of older adults with dementia exhibited care-related behavioural symptoms of dementia, occurring weekly or more often in 31% of cases. Both verbally and physically aggressive behaviours were found in 50% and

46% of home care cases, respectively.[9] The incidence of care-related agitated behaviours ranged from 46.8% [14] to 89% in residential aged care settings.[10,15] Furthermore, dementia-related agitated behaviours during assisted bathing can represent a significant source of burden for caregivers who provide assistance to older people with dementia.[16]

Despite the high prevalence and the very real impact that agitated behaviours have on caregivers' psychological and physical well-being, to date no systematic reviews have been published concerning the best management approach/strategies of agitated behaviours during assisted bathing for older adults with dementia. Several systematic reviews have identified evidence to manage dementia-related behavioural symptoms of older adults with dementia. [17,18] However, the scope of such reviews tends to be broad and does not specifically address different care activities such as bathing, that require evidence to guide detailed practical elements of care. There is a clear need to examine the available evidence regarding the best management approach for dementia-related agitated behaviours during assisted bathing in order to improve outcomes for both older adults with dementia and their formal and informal caregivers.

Research Method

This study utilised the SR (systematic review) method to identify, appraise and synthesise currently available evidence on the topic of assisted bathing for older adults with dementia. SR is a secondary research method and it has become increasingly employed in healthcare disciplines in recent years. Historically the narrative review method used to be largely favoured in analysing and summarising research findings and related discussions on the clinical topic of interest. However, the SR method is superseding the narrative review following the rise of the EBHC (evidence-based health care) movement. The SR method is a superior review approach to the narrative review[19] in producing evidence-based recommendations/guidance for clinicians, in that SRs incorporate rigorous and systematic strategies to minimise bias.[20] Following the international promotion of EBHC, the SR method has become an established secondary research approach[21] that supports EBHC.

The Joanna Briggs Institute (JBI) comprehensive systematic review (CSR) method was used in this study. Nursing and other highly practical aspects of healthcare cannot be fully explored

by evidence derived from statistical research designs[22-24] since such an area is inevitably supported by clinicians' tacit knowledge derived from their clinical experiences or the dominant healthcare discourse at the time of practice. Since it is recognised that diverse knowledge/evidence types are required to inform practice, the CSR method was developed to embrace not only the evidence on the effectiveness of interventions ("knowing what" type of evidence)[25], but also evidence related to subjective human experiences, culture, values, ethics or the accepted discourse at the time of practice ("knowing how" type of evidence).[25]

Evidence, the practice gap and re-consideration of textual evidence

There is a clear gap between EBHC and practice in the practical-care area, specifically in the aged care context. Prior to this research study getting underway, a preliminary database search was conducted. No SR reports were identified regarding assisted bathing in older adults with dementia regardless of the study design used. Seven SRs were identified on non-pharmacological strategies for dementia-related symptoms[17,18,26-30] but these reports' scope is broad and does not specifically address different care activities such as bathing, which require evidence to guide detailed practical elements of care. In addition, even with broad inclusion criteria for such reviews, identifying strong research evidence is challenging to do because many researchers have reported difficulties in conducting high quality controlled trials in aged care settings.[26,27]

The results from the preliminary database search did identify a limited number of research articles reporting on assisted bathing for older adults with dementia. It was clear that the topic has rarely been explored in the form of a primary analysis, whether in the form of quantitative or qualitative studies.

The lack of quantitative studies may be related to the difficulty in applying rigorous scientific/statistical rules when investigating or developing an effective method in such a practical area that reflects the lived world. There are simply too many variables to control in planning rigorous controlled trials. Similarly, even the current popularity of qualitative research may have left the hands-on daily care area such as assisted bathing almost untouched. This could possibly be explained by: researchers' preferences for "glamorous topics"; lack of

recognition for daily hands-on care among clinicians and researchers; and lack of financial and human resources to conduct such research.

The so-called “knowledge and practice gap” has been often discussed in healthcare since the early 1990s, with specific reference to the nursing discipline.[31] Qualitative research was considered to be the best research strategy that could reinforce and add to the knowledge base of nursing. Two decades later, a large area of practice appears to have been left from the ignored by qualitative researchers and the EBHC movement. This is particularly the case in a highly practical and context-specific area such as assisted bathing for older adults with dementia.

To overcome this dilemma, the present review has considered non-research-based textual papers as an alternative source of evidence related to the “knowing how” type of knowledge. The EBHC movement has dismissed out of hand the authority and value that is present in non-research textual evidence. Following the increased awareness of utilising research-based evidence in healthcare decision-making, textual evidence was then considered irrelevant to EBHC.

Some might argue that textual evidence should not be considered because it is not based on a rigorously conducted research design method. Such an argument is correct as far as “knowing what” type of knowledge is concerned. What intervention should be used, what strategies are more effective than others, can only be determined by rigorous quantitative research, where textual evidence has no role to play. With regard to “knowing what” type of knowledge, textual evidence only can provide evidence concerning “perceived effectiveness” in contrast to statistically proven effectiveness. For instance, for many years the use of a donut device used to be considered effective in preventing pressure ulcers. In recent years, however, the EBHC movement has eliminated the donut device from practice because the current evidence has indicated it actually interferes with the blood flow in the area where it is applied.[32] It is this kind of example that encourages clinicians to move beyond experience-based practice to the practice supported by the scientific evidence.

However, such an argument is valid only in the case of evidence concerning the effectiveness of healthcare interventions (knowing what evidence). As for "knowing how" type of evidence, textual evidence should be promoted in the absence or paucity of qualitative research reports. "Knowing how" refers to the type of knowledge related to "how the actual care should be provided" in a real life setting. Textual evidence should be understood as narratively expressed experiences/tacit knowledge on a topic of interest. Narrative knowledge does not fall into a conventional academic reasoning system of induction and deduction[33,34] but it is possible that clinicians and care providers can receive content-specific (e.g. bathing older adults with dementia) guidance and insights on how to improve their everyday practice in the form of narrative knowledge. [33]

Consequently, this project aimed to examine currently available literature regarding the approaches/strategies for minimising agitated behaviours during assisted bathing/showering of older adults with dementia. It was aimed to provide clinicians and caregivers with evidence-based recommendations and guidance to improve both clients' and clients' outcomes. The target readers of the evidence-based guidelines are formal and informal caregivers working with older adults with dementia as well as healthcare professionals who supervise caregivers.

Objectives of the project:

The objectives were to:

- develop evidence-based clinical recommendations that can be used by formal and informal caregivers of people with dementia as well as clinicians who supervise them; and
- through a systematic review of the evidence, determine the best available evidence regarding assisting bathing/showering of older adults with dementia in aged care facilities and community settings.

Review questions:

The quantitative component aimed to answer questions concerning effectiveness:

- What is the most effective bathing/showering method to reduce agitated or aggressive behaviours in older adults with dementia in aged care facilities and community settings?

- What are the most effective bathing/showering methods and related educational/ supportive interventions to improve the confidence and satisfaction level of nurses, care staff or family caregivers in assisting bathing/showering older adults with dementia?

The qualitative component aimed to answer questions of meaningfulness, appropriateness and feasibility:

- What are the bathing/showering experiences of older adults with dementia?
- What are the experiences of nurses, care staff and family caregivers in assisting bathing/showering older adults with dementia?

The textual component aimed to provide supplemental evidence that supports the qualitative component as an alternative source of 'knowing how' type of evidence.

Definitions:

The following operational definitions were used in the review.

Dementia:

Dementia is a condition in which there is a gradual loss of brain function; it is a decline in cognitive/intellectual functioning The main symptoms are usually loss of memory, confusion, problems with speech and understanding, changes in personality and behaviour and an increased reliance on others for the activities of daily living.[35]

Agitated behaviours:

Agitated behaviours are inappropriate verbal, vocal or motor activities that may be abusive or aggressive toward oneself or others and deviate from social norms. [3,36,] For the purpose of this study the term agitated behaviours serves as an umbrella term encompassing the following four types of behaviours: [37,38]

- verbally aggressive behaviours (e.g., cursing, making unpleasant noise, screaming, verbal sexual advances)
- physical aggressive behaviours (e.g., biting, grabbing, hitting, hurting oneself or others, kicking, spitting)

- verbally non-aggressive behaviours (e.g., negativism, complaining, repetitive sentences or questions, attention-seeking behaviours)
- physically non-aggressive behaviours (e.g., inappropriate dressing and/or disrobing, inappropriate eating or drinking, handling things, hiding things, pacing, restlessness).

The structure of the thesis

The thesis consists of six chapters. Chapter One presents a brief introduction to the study topic (agitated behaviours during assisted bathing in people with dementia) and the systematic review method. The rationale for the project and selection of the review method is described in more detail in Chapter Two. In Chapter Three the research method used is explained and Chapter Four reports on the results of the systematic review. Chapter Five further elaborates on the findings in the light of evidence-based health care. The thesis concludes with Chapter Six and it offers evidence-based clinical recommendations for caregivers and their supervisors. The implications for further research are addressed in this final chapter.

Summary of the chapter

This chapter has provided a brief introduction to the thesis. Assisted bathing is one of the major activities linked to the occurrence of agitated behaviours in older adults with dementia. In order to develop evidence-based practice recommendations for caregivers, a systematic review was conducted to identify the evidence base of the recommendations. Due to the paucity of research evidence, textual papers have been included as the alternative source of 'knowing how' type of evidence. In the next chapter, the background literature on this subject is presented in terms of a review, with specific emphasis on the epidemiology of agitated behaviours in older adults with dementia. Contemporary interpretations of agitated behaviours in the literature and aged care practice and various interventions are presented. Agitated behaviours resulting from assisted bathing will be elaborated. Finally, further methodological challenges and an alternative approach to evidence-based aged care will be analysed, with reference to the use of textual evidence.

Chapter II: Setting the Scene: Literature Review

This chapter reviews the literature concerning issues of agitated behaviours in older adults with dementia. From this review a new methodological approach is proposed to achieve evidence-based health care (EBHC) in daily nursing care. In the first section, definitions and prevalence of dementia-related behaviours, specifically agitation are addressed, followed by a discussion of contemporary interpretations of dementia-related agitated behaviours and commonly used management strategies. The high prevalence of care-related agitated behaviours is addressed, specifically in relation to assisted bathing. In order to do this, limitations of current approaches when using evidence-based health care are analysed with a specific focus on the concept of Aristotle's practical wisdom.

Dementia related symptoms and agitated behaviours

The management of dementia-related symptoms is a challenge in the provision of care for older adults suffering from dementia. The prevalence of dementia-related symptoms has been reported as being high. In one Australian study, 90% of residents in aged care facilities exhibited one or more dementia-related behavioural disturbances including psychosis (60%), depressed mood (42%) and active disturbances or aggression (82%).[39] Not surprisingly, residents with a clear diagnosis of psychosis demonstrated a higher frequency of symptoms than residents not diagnosed with this condition. Similarly, in a US study, 42% to 62% of residents in aged care facilities had disruptive behaviours.[40] Increased dementia-related symptoms have been linked to progression of dementia.[41,42]

Of the dementia-related symptoms,[43] agitation has been one of the most frequently observed problematic symptoms and often the reason for a psychiatric consultation.[44] Kverno et al.[30] conducted a retrospective chart review of 123 aged care residents with advanced dementia in the USA and the most prevalent dementia-related symptoms reported were aggression or agitation (50.4%), followed by depression (45.5%), and withdrawal/lethargy (43.1%). Another US study also reported that 87%[45] of people with cognitive impairment expressed verbal and agitation, which emerged as physical aggression at least once a week.

Agitation or agitated behaviours include a wide range of dementia-related symptoms.[38,42] Cohen-Mansfield has defined agitated behaviours as inappropriate verbal, vocal or motor activities that may be abusive or aggressive toward one's self or others and deviate from social norms.[3,36] Depending on the degree of aggression, the term 'agitated behaviours' encompasses four sub-groups: firstly, verbally aggressive behaviours (e.g., cursing, making unpleasant noise, screaming, verbal sexual advances); secondly, physical aggressive behaviours (e.g., biting, grabbing, hitting, hurting oneself or others, kicking, spitting); thirdly, verbally non-aggressive behaviours (e.g., negativism, complaining, iterating repetitive sentences or questions, attention-seeking behaviours); and fourthly, physical non-aggressive behaviours (e.g., inappropriate dressing and/or disrobing, inappropriate eating or drinking, handling things, hiding things, pacing, restlessness).[8,37]

Agitated behaviours and burden on caregivers

Agitated behaviours are the major cause of stress and psychological burdens for both formal and informal caregivers[4-8] Caregivers are reported to perceive both verbally and physically agitated/aggressive behaviours to be most disruptive among dementia-related symptoms.[12,46,47] Cohen-Mansfield[8] examined the relationship between type, frequency, and level of disruptiveness of various types of agitated behaviours. In total 191 residents with dementia from 11 residential aged care facilities participated in the study. The Cohen-Mansfield Agitation Inventory (CMAI)[48] was used to measure frequency and level of disruptiveness of the different types of agitated behaviours. Verbal aggression demonstrated the highest average disruptiveness perceived by caregivers. After frequency of behaviour was controlled, physically aggressive behaviour was the most disruptive behaviour as reported by staff across both night and day shifts.[8]

The stress and burden of dealing with dementia-related agitated behaviours often result in institutionalisation of family members with dementia. Kunik et al.[6] examined the impact of agitation on placement in residential aged care facilities in 215 older people with newly diagnosed dementia. A significant association was found between the occurrences of agitation with increased institutionalisation ($p \leq 0.004$). This particular finding was supported by other studies.[5,7]

Contemporary interpretation of agitated behaviours

In recent years, the traditional view that dementia-related agitated behaviours are symptoms of dysfunctional cognitive status, has been challenged. The current popular view is that dementia-related behaviours such as agitation should be seen as meaningful behaviour that requires validation of unmet needs or needs-driven behaviours[49] and appropriate intervention should be taken to meet the need.[16,50] Obviously, a shift has occurred in the discourse concerning the interpretation of agitated behaviours in older adults with dementia. Dementia-related agitated behaviours were once considered *problem behaviours* that healthcare providers and/or families needed to control in order to protect themselves from harm.[49] According to the new interpretation, carers are encouraged to interpret agitated behaviours as strategies for communicating physical or psychological distress and unmet needs.[49]

Algase (1996)[49] has provided a conceptual model of dementia-related agitated behaviours based on the need-driven approach. In this model, agitated behaviours develop as a consequence of the interaction between background factors and proximal factors in the context of the person with dementia and the environment. Background factors refer to stable or slowly changing characteristics of the person with dementia including neurological factors, cognitive ability, health status, and psychosocial factors; while proximal factors refer to more changeable characteristics such as physiological need states, psychological need states, physical environment and social environment.[53] Cohen-Mansfield[54] has also presented a similar model consisting of categories such as impact of dementia, unmet needs, behavioural factors and environmental vulnerability. Both models share the view that unmet needs and related agitated behaviours are complex phenomena involving multiple physical, psychological and environmental factors.

Moving toward a humanistic approach

This new interpretation of agitation in dementia has also facilitated a rapid transformation of care approaches from historical restraint-oriented care to a more humanistic approach. Historically, restraints that were pharmacological and physical in character were commonly used to control agitated behaviours among people with dementia. Due to increased public awareness of patients' rights and quality of life, together with the recent evidence-based

health care movement, both types of restraints have been challenged by healthcare professionals and patients' families, as well as the wider community.

In relation to physical restraint, the literature shows no strong evidence to support its continuous use despite nurses' preference for it.[55-57] Furthermore, employing physical restraints is likely to increase the risk of agitation[55] and falls. [11] In the case of pharmacological restraint, it has been argued that older adults are sensitive to adverse effects of drugs due to the physiological-pharmacokinetic changes of ageing. Some drugs however, are effective in managing symptoms of dementia. [5,58,59] Increased mortality rate has been reported when antipsychotic drugs were used for older adults with dementia.[60]

In the USA, The Omnibus Reconciliation Act (OBRA '87)[61], was passed in 1987 to discourage the use of pharmacological and physical restraints. Similarly in the UK, the Chief Medical Officer[62] released a recommendation for caution in prescribing anti-psychotic drugs to people with dementia. With strengthened guidelines and regulations aiming to reduce the use of both pharmacological and physical restraint, the trend to seek alternate management strategies has been accelerated in the management of dementia-related symptoms in older people with dementia.

In reality, changing the clinical culture that accepts the use of restraints, particularly pharmacological restraint, may require time and appropriate educational education for staff involved in care. Testad and his co-workers[56,57] reported that a 2-day no-restraints staff education program together with monthly guidance reduced the frequency of restraints ($p = .02$) and severity of agitation. However, no statistically significant difference was found in the use of antipsychotic drugs.[56,57]

Contemporary management strategies

The shift from restraint-oriented management to a non-pharmacological humanistic approach has accelerated. With the promotion of new approaches to manage dementia-related agitated behaviours, several types of non-pharmacological interventions have been proposed and examined. In the following section, some key management strategies will be discussed including communication and assessment skills, behavioural interventions, the person-centred

approach, sensory interventions, physical activities, psychosocial intervention and supportive/education interventions for caregivers.

Assessment skills

Based on the view that unmet needs are the major cause of agitated behaviours in dementia, a relevant level of assessment skill in care providers can be a critical factor in the prevention and management of such behaviours.[63,64] This view is also supported by research findings, for example where invalidation of a resident's feelings or needs was clearly associated with increased occurrence of agitated behaviours.[65] This reinforces the assumption that targeting care intervention to resolve unmet needs can minimise and control the occurrence of agitated behaviours in older adults experiencing dementia.

Identification of risk factors and triggers has been considered important for managing agitated behaviours in older adults with dementia.[36,66] Various personal background factors and environmental (proximal) factors have been discussed in the literature. Reported personal background factors include male gender,[1] lifelong history of being less agreeable, pre-morbid neuroticism,[67] clinical depression,[68] low mental status score (severe dementia),[12,36,69] reduced level of activities in daily living (ADLs),[65] and low level of language expression.[70] Environmental (proximal) factors including amount of night time sleep,[12] untreated pain,[71] shortage of nursing staff,[1] cold room temperature at night,[1] and inadequate social environment[1] have been reported as risk factors for agitated behaviours. Moreover, assistance in daily care such as bathing, dressing and toileting are reported to be major triggers of agitated behaviours in older people with dementia.[63]

Accurate assessment of agitated behaviours should be facilitated by using validated tools. Of various assessment tools, [48,67,70-75] the Cohen-Mansfield Agitation Inventory (CMAI)[67] is one of the most commonly used scales for assessing agitated behaviours in the nursing and aged care literature. Compared to concise tools such as PAS,[75] the CMAI can assist comprehensive assessment of the status of agitation. Nurses or caregivers are asked to answer 29-item questionnaires (e.g., hitting, grabbing onto people, pushing, throwing things, biting or kicking) and each item is rated on a 7-point scale of frequency (from 1. less than once a week to 7. several times an hour).[48] For busy clinicians and caregivers, the scale also has two short

versions that contain 14 items with a 5-point frequency scale,[73] and ten items with a four-point frequency scale.[76]

Interpersonal communication skills

The importance of caregivers' interpersonal communication skills has been emphasised in the prevention and management of agitated behaviour in dementia.[51,52,65,77,78] A US study has demonstrated that caregivers with an adequate set of communication skills are related to non-agitated behaviours. One hundred and five cases of physical aggression toward caregivers by residents with Alzheimer's disease were recorded by videotape, then analysed to determine the immediate antecedents of care-related physical aggression against caregivers. Caregivers' behaviours were assessed using the Interaction Behaviour Measure and Health Professionals'-Geriatric Patient Behaviour Rating scale, and the older adults' behaviours were assessed using a modified version of the Interaction Behaviour Measure. The outcome showed that when caregivers followed eight behavioural subscales, these were significantly related to older adults exhibiting calm or functional behaviours[65] including personal attending behaviours, social/flexible behaviours, relaxed behaviours, use of banter, procedural information, attends/comfort, use of praise, and number of smiles.

Caregivers' behaviours that were identified as triggers of aggressive behaviours included inappropriate verbal communication with residents, while spraying water without a verbal prompt also significantly increased the risk of agitated/aggressive behaviours.[78] Use of elderspeak which is a communication style involving a slow speed of speaking, simplified syntax, avoiding long words, exaggerated prosody[79] by caregivers was also reported to increase the occurrence of agitated behaviours during bathing.[7] In contrast, caregiver's relaxed and smiling behaviours were associated with less frequent occurrence of aggressive behaviours.[65]

Behavioural interventions

To manage dementia-related symptoms, various behavioural therapies have been introduced in aged care settings. The underlying assumption of behavioural therapy is that dementia-related behavioural symptoms can be managed by antecedents to the behaviour as well as response by others to the behaviour.[80,81] The following systematic review reports the effect of

two types of behavioural intervention therapies, namely cued-recall therapy and behavioural reinforcement. To date, no strong evidence has been identified that promotes the use of either cued-recall therapy or behavioural reinforcement. Further high quality studies will be required to generate a conclusive result.

Cued-recall is one type of behavioural intervention involving the person with dementia learning an association between a cue (e.g., sound of a bell) and its meaning (e.g., toilet). Stern and Gibb [26] conducted a systematic review to determine the effects of using cued-recall strategies in managing behaviours related to dementia. The review identified only three papers with low methodological quality, including one quasi-experimental and two case studies. Overall, weak evidence was found to support the use of the cued-recall approach in controlling dementia-related behaviours such as demanding and repetitive verbalisations and aggression.

Another systematic review by Stern et al.[27] examined studies of a behaviour therapy modality that used reinforcement techniques to manage dementia-related symptoms. Positive reinforcement utilises a stimuli to strengthen a behaviour while negative reinforcement is intended to weaken a behaviour. The review identified only five studies of low methodological quality including quasi-experimental study, three case studies and one case report. Only weak evidence was found to support the use of behavioural reinforcement techniques. The authors noted the use of clinical judgement in adopting a behavioural reinforcement technique for managing dementia-related symptoms.

Sensory interventions

Sensory interventions aim to provide relaxation by stimulating the senses[37] including sight, hearing, taste, smell and touch. Various types of sensory intervention have been introduced for the behavioural management of older adults with dementia. Sensory interventions can be provided as a single intervention or multiple interventions.

Kong et al.[29] conducted a systematic review to determine the effectiveness of various non-pharmacological interventions in the management of dementia-related agitated behaviours. The review reported the statistically significant effect of sensory interventions in reducing agitation (standardized mean difference: SMD -1.07; 95% confidence interval (CI) : -1.76 to -

0.38, p = 0.002).[29] However, the review pooled data from clinically heterogeneous studies including studies on aromatherapy with essential oils,[82] thermal bath [83] and calming music and hand massage. [84] Further research is required to provide sufficient evidence to determine the effectiveness of each sensory intervention. Commonly used sensory interventions are presented in the following section.

Hearing

Music is commonly used to manage agitation in aged care. A Dutch descriptive study[85] reported that music was offered often in the communal living room during morning and afternoon tea times. During patient-centred personal care activities in the early morning and before bed time, tailored music was played based on the preference of the individual resident.

Several studies[86-88] have examined the impact of music therapy sessions run by music therapists[87,88] or nurses[62] aiming to reduce agitated behaviours in people with dementia. Overall, the use of music therapy demonstrated a positive impact on agitated behaviours and other dementia-related symptoms in older adults. However, not all aged care facilities may have access to a music therapist. Further investigation is necessary in order to develop an evidence base for music therapy specifically by non-qualified therapists such as nurses.

Smell

Aromatherapy has been used since ancient times to improve health and wellbeing. The assumption is that volatile substances in the essential oils are absorbed through the skin or respiratory system causing physiological and psychological effects.[89] Studies[82,90,91] have demonstrated the beneficial effect of aromatherapy in reducing agitated behaviours in dementia despite aromatherapy not being fully understood in terms of how it actually works to bring about such outcomes. Aromatherapy is considered to be relatively easy to administer, however, further rigorous studies are needed to provide a scientific base for the therapy.

Touch

The use of therapeutic touch in contemporary nursing and aged care practice is founded largely on the East Indian Vedic healing tradition.[92] Some scientific evidence is available to support the use of therapeutic touch in the management of agitated behaviours.[93,94]

A double-blind RCT [95] of 65 aged care residents compared therapeutic touch with a placebo in the management of dementia-related symptoms, including agitation. The experimental group received therapeutic touch on the neck and shoulders twice daily for 3 days, for two separate periods. A statistically significant reduction in symptoms was found in the therapeutic touch group compared to the control group ($p = 0.03$). Other forms of touch-related therapies identified in the literature were massage with essential oils[96] and slow stroke massage.[97] Aromatherapy is a relatively easy intervention to provide in aged care centres. However, further high quality research should be conducted to determine a robust evidence base for the therapy.

Seeing, hearing, smelling and tasting: multi-sensory stimulation (MSS)

Two or more sensory interventions can be provided together in order to improve the control of dementia-related symptoms such as agitation. Baker et al. compared activity sessions and multi-sensory stimulation program (MSS), involving stimulation of the senses through the provision of unpatterned visual, auditory, olfactory and tactile stimuli.[98] Two RCTs were reported from the project.[98,99] Both studies showed a reduction in dementia-related behaviours with MSS.

Physical activities

Exercise may be one possible approach to manage dementia patients' agitated behaviours.[100] The Tailored Activity Program (TAP) was reported[101] to have a beneficial effect on both family members and caregivers. The program involved eight occupational therapy interventions with a test of neuropsychological and functional status of people with dementia. The study also included determination of an activity plan and instructions to caregivers.

Psychosocial intervention

Enhanced social interaction has been used as an intervention that aims to reduce agitated behaviours. The systematic review by Kong et al.[29] did not find a statistically significant effect of psychosocial interventions in controlling dementia-related agitated behaviours (SMD -0.19; 95%CI -0.71 to 0.33) but this result should be interpreted with caution. The meta-analysis pooled the data from two clinically heterogeneous interventions: simulated presence[102] and the use of a dog.[103] The clinical implication of the meta-analysis is not clear since the two

types of intervention differ to a large extent. Further studies should be encouraged to determine the quality of evidence from each intervention.

Support/education programs for family caregivers

Several training/education programs have been introduced for family caregivers aiming to improve their management skills for dementia-related symptoms and to reduce agitated behaviours of family members who have dementia. Psycho-educative group intervention[104] and management skill interventions[105-108] were identified. Overall, education/support programs for family caregivers are reported to improve their stress and burden of caregiving, while problem behaviours of family members with dementia generally show some improvement.

Care-related agitated behaviours

Building on the discussion of the status of dementia-related agitated behaviours and commonly reported management strategies, the focus of this chapter will now moves on to explore care-related agitated behaviours in aged care. The prevalence and nature of care related agitated behaviours, specifically in the context of assisted bathing is addressed. This is followed by further discussion on the problems of securing high quality studies in aged care settings, particularly in the context of daily care.

Assistance with daily care such as bathing, eating, dressing and toileting are reported to be major triggers of agitated behaviours in older people with dementia. [63,83,109] Bathing/showering is important in maintaining the physiological, social and psychological wellbeing of individuals. A primary purpose of bathing is to maintain personal hygiene. Bathing involves cleaning accumulated dead skin or waste that might lead to infection or more serious conditions. Bathing/showering also serves the social purpose of maintaining an acceptable standard of cleanliness and provides individuals with the opportunity to revive and refresh through the washing process.[110,111]

Many older adults come to need assistance in bathing/showering as their physiology changes due to increased co-morbidities.[36] Not surprisingly, older adults anticipate future loss of independence in bathing with mixed feelings. A qualitative study examined the perception of 23 community-dwelling older adults toward their possible future need for assistance for

bathing.[111] Many participants shared the view that they would inevitably be faced with bathing disability in the future[111] together with two ambivalent concerns regarding assisted bathing: the need to maintain independence in related activities and the need for safe bathing experience.

High prevalence of agitated behaviours during bathing

A high prevalence of agitated behaviours has been reported for older adults with dementia during personal care and bathing.[12,13,112] In one cross-sectional survey study in the USA where family caregivers were interviewed, verbally agitated behaviours were found (50%) and physically agitated behaviours were reported in 46% of the 183 people sample.[9] In aged care settings, incidence of care-related agitated behaviours ranged from 46.8%[14] to 89%.[10,15]

A cross-sectional study of 9 residential aged care facilities in the USA reported bathing was the only care event significantly related to aggressive behaviour ($F = 6.9$, $p < .001$).[12] Another cross-sectional study in aged care facilities in the USA also reported a large proportion of residents exhibiting agitated/aggressive behaviours during bathing.[112]

Caregivers' burden

Assisted bathing can be a highly unpleasant occasion for both formal and informal caregivers who provide assistance to older people with dementia.[16] Commonly reported agitated behaviours during bathing include kicking, scratching, grabbing, screaming, and cursing at caregivers and others.[113] Caregivers can also become soaked as a result of clients pulling on shower hoses, and pounding the bathwater.[113] It is evident that assisting bathing can cause emotional and physical distress for caregivers while their physical/occupational safety can be in danger.

Toward new evidence-based aged care

To establish EBHC (evidence-based health care) in the management of dementia-related agitated behaviours during assisted bathing, a search was conducted for previously published systematic reviews. Systematic review is a type of secondary research that connects results from primary studies to evidence-based recommendations for busy clinicians.[21] However, no systematic review was identified regarding assisted bathing in older adults with dementia. Instead, seven reviews were identified on non-pharmacological strategies for dementia-related

symptoms.[17,18,26-30] In addition, no indisputable evidence was identified in any specific intervention, largely due to the limited number of methodologically high quality studies.

Two barriers have become evident in promoting EBHC in practical and highly context-specific areas such as assisted bathing of older adults with dementia. Firstly, the scope of such systematic review reports tends to be broad. Hence it does not address specific care activities such as bathing, which require evidence to guide practical elements of care. Secondly, when broad inclusion criteria were used for such reviews, identification of strong research evidence is difficult. This may be due to difficulties in conducting high quality controlled trials in aged care settings. In addition, most interventions that may be effective in reducing agitation cannot be directly applied to the setting of assisted bathing (e.g., exercise, psychosocial interventions and sensory interventions). Most identified interventions require further work in the context of assisted bathing.

Evidence required to provide aged care

The limitations of previous systematic reviews in providing effective guidelines for assisted bathing are largely due to a lack of sufficient experimental research reports. Hands-on nursing care in assisting bathing for older people with dementia has probably received little attention from the research community. This may be due to the difficulty in applying rigorous scientific/statistical rules when investigating or developing an effective method in such a practical area of care; there are simply too many variables to control in planning rigorous controlled trials.

However, simply increasing the number of high quality RCTs may not be enough to produce sufficient and relevant knowledge for the development of EBHC practice guidelines in hands-on care areas such as assisted bathing. The type of knowledge required to carry out such care activities is complex and cannot be produced only from a positivist/statistical research method.[22-24,114] Patricia Benner[22,115] has introduced Heidegger's philosophy of hermeneutic phenomenology to the discourse of nursing in order to provide an alternative methodology to develop the foundations of nursing knowledge. With this kind of methodological approach, it was hoped that complex and multilayered knowledge embodied in nursing practice would be successfully articulated.

Knowing what and knowing how

Heidegger[116] adopted Aristotle's two types of knowledge to demonstrate what knowing/understanding mean in a hermeneutic perspective. Heidegger used the notion of a hammer in highlighting the difference between two types of knowledge, namely knowing what and knowing how.[116] Knowing what is concerned with the ability to describe what the hammer is, taking into account the variables of weight, colour, size, temperature or ratio. Knowing how is related to how to use the hammer in real life settings/the lived world. According to Heidegger, understanding something is not only concerned with knowing what it is, but also knowing how to use it in the lived world (understanding). For Heidegger understanding is not a simple cognitive activity -- but practical knowledge and a kind of competence.[117]

Benner elaborated Heidegger's argument in the context of modern nursing practice.[22,115] In the nursing context, knowing what is related to bio-medical knowledge that can be developed using quantitative statistical research designs (e.g., the best dressing material to manage pressure sores). Knowing how, in contrast, is how best care should be practised or how care should be delivered. This type of knowledge is largely based on a clinician's clinical experience/clinical wisdom and cannot be articulated through a statistical research design. Introducing the notion of the knowing-how type of knowledge has promoted the rise of a qualitative research tradition in the nursing profession worldwide.

However, even the current popularity of qualitative research might have left the hands-on daily care area (e.g., assisted bathing) almost untouched. Indeed, the present review project has only identified a limited number of qualitative studies concerning assisted bathing for people with dementia. This might be explained by: researchers' preferences for "glamorous topics", lack of recognition for daily hands-on care among clinicians and researchers, and lack of financial and human resources to conduct research. This appears to be déjà vu for researchers in nursing who have worked to promote a qualitative research paradigm as opposed to the dominant-positivist/biomedical view. In the early 1990s, Street[31] referred to nursing practice as a 'messy swamp' in confusion and chaos while researchers conducted clean and scientific research that had no connection with the realities of messy everyday practice. She advocated the power of qualitative research for improving practice in real life scenarios [31] to fill the so-called research and practice gap.

Two decades later, qualitative research is being recognised as a rigorous methodological approach in nursing and other healthcare disciplines. However, some areas of nursing practice appear to have been left in the messy swamp with little light being shone by the qualitative research community and the EBHC movement. This is particularly the case in a highly practical and context-specific area such as assisted bathing for older adults with dementia.

Exploring the knowing-how type of knowledge in Textual evidence

To overcome this dilemma, the review has explored a new interpretation of textual-opinion papers in the light of narrative knowledge. Historically, the EBHC movement has advocated a shift away from traditional experience-based healthcare to practice supported by the best available research evidence. However, a large part of the knowing-how type of knowledge necessary to provide healthcare in the real world might not fully fit into the academic reasoning system that seeks methodological purity and rigour in both quantitative and qualitative traditions.[114]

Aristotle[118] presented two types of reasoning systems people use in articulating knowledge; one is discursive reasoning and the other is narrative reasoning. Discursive reasoning employs logical and direct arguments in order to establish formal and empirical truth through deductive (quantitative) or inductive (qualitative) reasoning approaches.[33,34] In general, the main concern of discursive reasoning is understanding phenomena in terms of general causes.[34] However, reasoning in the real world does not always match with this formal reasoning approach.[119] In contrast, narrative reasoning makes sense beyond traditional academic paradigms[114] and is largely used in non-research opinion papers. Narrative reasoning is concerned with human experience in the real world but does not attempt to establish formal truth based on empirical data.[33] Instead, narratives help us understand the lived world of the storyteller by showing how something might have come to be in some cases.[33]

This type of knowledge is crucial to healthcare practice[34] and textual opinion papers can be considered a rich source of narrative knowledge based on clinicians' experiences[34] in the lived

world. Furthermore, this type of knowledge can be considered as stories about clinicians' practical experiences that can be also termed tacit knowledge or what Aristotle called "Practical Wisdom"[25] – a type of knowledge that also reflects unexamined cultures and discourses around the bathing of older adults with dementia. Although such papers are not based on rigorous research methods, it is likely that clinicians and care providers can receive highly content-specific (bathing older adults with dementia) insights to improve their everyday practice.

Consequently, this project aims to examine currently available quantitative research reports and qualitative research reports, as well as textual opinion papers regarding the assisted bathing/showering of older adults with dementia. The ultimate aim of the project is to provide clinicians and caregivers with evidence-based recommendations and guidance to improve both clients' and caregivers' outcomes.

Summary of the chapter

In order to set the scene for the present systematic review project, this chapter has provided a review of the background literature concerning agitated behaviours in older adults with dementia in general, followed by a focused examination of the status of assisted bathing in this population. Limitations of existing methodological approaches to EBHC have been highlighted with the proposal of a new interpretation of textual opinion evidence in the daily care area, specifically concerning assisted bathing. In the following chapter, the actual review method utilised in the present project will be presented in detail.

Chapter III: Review Method

In this chapter, the systematic review method employed in this project is discussed in detail. The review was conducted based on the comprehensive systematic review method developed by the Joanna Briggs Institute (JBI). In the following section a brief overview of the development of evidence-based health care (EBHC) is presented, followed by the expected role of systematic reviews in the EBHC movement. The difference between the Cochrane Collaboration approach to evidence and the JBI's approach is highlighted with a specific focus on the nature of knowledge with which both groups are concerned. Finally, the actual review method utilised here is described including review objectives, review questions, inclusion criteria, and literature search strategies.

Evidence-Based Health Care and Systematic Reviews

In the following section, a brief overview of EBHC (evidence-based health care) and the SR (systematic review) is discussed to provide background knowledge for readers who are not familiar with them.

Development of evidence-based health care and systematic review methods

EBHC was initiated by a Welsh medical practitioner, Archie Cochrane, who worked on Evidence Based Medicine. Cochrane criticised the lack of information about the effects of healthcare interventions and advocated the effective use of medical resources to provide patient care so that the best outcomes emerged.[21] Cochrane specifically highlighted the importance of evidence in the effectiveness of healthcare interventions by examining the use of randomised controlled trials (RCTs). The RCT study design has been considered the best research method for determining the effectiveness of a specific intervention in that it is able to minimise bias. The international leading organisation in the field of EBHC, Cochrane Collaboration, has developed its SR methodology following Cochrane's work on the synthesis of evidence concerning the effectiveness of healthcare interventions.

Systematic review (SR) is a research method used to identify the currently available best evidence concerning a topic of interest. Historically the narrative review has been used to analyse and summarise research findings and related discussions on a clinical topic of interest. Despite being considered a secondary research method together with the narrative review approach, the actual method and process of the SR are rather close to the primary study with its strictly systematic strategies to minimise bias in the course of review project. [20] In this way, the SR method is a superior review approach to the narrative review [19] in producing evidence-based guidelines for clinicians. With the international promotion of EBHC in healthcare professions, the SR has been promoted[21] in order to establish healthcare practice based on evidence derived from rigorous research findings.

The JBI comprehensive systematic review method

The present project has adopted the JBI comprehensive systematic review (CSR) method that is based on the JBI model of EBHC. JBI adopted Cochrane's approach to EBM in nursing. However, a fundamental limitation was soon identified in importing Cochrane's approach to the effectiveness of healthcare interventions in the nursing discipline, and this concerned the holistic nature of human beings. The type of knowledge required to practice medicine may be largely related to the effectiveness of medical interventions such as the effectiveness of new drugs or new surgical techniques on physiological outcomes or cost outcomes, which can be tested under a positivistic research methodology. However, nursing and highly practical aspects of healthcare cannot be fully explored through a statistical research design [22-24] since this area is inevitably supported by clinicians' tacit knowledge or healthcare discourse at the time of practice.

With the recognition of the need for diverse knowledge/evidence types to inform practice, the JBI has developed its own CSR method that embraces not only the evidence on the effectiveness of interventions ("knowing what" type of evidence), but also evidence related to subjective human experiences, culture, values or the accepted discourse at the time of practice including: evidence concerning feasibility, appropriateness and meaningfulness of healthcare practice ("knowing how" type of evidence). This comprehensive and inclusive

approach to EBHC and the CSR method is also seen in other international research organisations as well.[20,120]

Furthermore, as discussed in the previous chapter, some areas of healthcare practice, specifically practical and complex topics such as assisted bathing for people with dementia, have been rarely explored in the form of a primary qualitative study. Therefore, the present project has considered including textual opinion papers as alternative sources of the "knowing how" type of knowledge. Although such papers are not based on rigorous research methods, it is likely that clinicians and care providers can receive content-specific (e.g. bathing older adults with dementia) guidance and insights to improve their everyday practice.

In a practical methodical sense, CSR is a mixed method research strategy that takes both quantitative and qualitative data into consideration. The only difference between mixed method primary studies and mixed method SR is the use of raw data or processed data. For both primary and secondary studies, the mixed method study design is founded on the philosophy of pragmatism that focuses on practical benefit/merit, thus philosophical coherence between included study paradigms such as "positivist vs. interpretivist" may not be a primary concern. Mixed method studies aim to examine and capture the complexity of healthcare phenomena beyond issues connected with the so-called paradigm war.[121]

Review method

Objective:

The objective of this systematic review was to determine the best available evidence regarding assisting bathing/showering of older adults with dementia in aged care facilities and community settings.

Review questions:

The quantitative component aimed to answer questions of effectiveness:

- What is the most effective bathing/showering method in reducing agitated or aggressive behaviours in older adults with dementia in aged care facilities and community settings?

- What are the most effective bathing/showering method and related educational/ supportive interventions in improving the confidence and satisfaction level of nurses, care staff or family caregivers in assisting bathing/showering older adults with dementia?

The qualitative component aimed to answer questions of meaningfulness, appropriateness and feasibility:

- What are the bathing/showering experiences of older adults with dementia?
- What are the experiences of nurses, care staff and family caregivers in assisting bathing/showering older adults with dementia?

The textual component aimed to provide supplemental evidence to the quantitative and qualitative components.

Definitions:

The following operational definitions were used in the review.

Dementia:

Dementia is a condition in which there is a gradual loss of brain function; it is a decline in cognitive/intellectual functioning The main symptoms are usually loss of memory, confusion, problems with speech and understanding, changes in personality and behaviour and an increased reliance on others for the activities of daily living.[35]

Agitated behaviours:

Agitated behaviours are inappropriate verbal, vocal or motor activities that may be abusive or aggressive toward oneself or others and deviate from social norms.[36,122] In this review project, the term agitated behaviours has been used as an umbrella term encompassing the following four types of behaviours: [37,38]

- verbally aggressive behaviours (e.g., cursing, making unpleasant noise, screaming, verbal sexual advances)
- physical aggressive behaviours (e.g., biting, grabbing, hitting, hurting oneself or others, kicking, spitting)
- verbally non-aggressive behaviours (e.g., negativism, complaining repetitive sentences or questions, attention-seeking behaviours)

- physically non-aggressive behaviours (e.g., inappropriate dressing and/or disrobing, inappropriate eating or drinking, handling things, hiding things, pacing, restlessness).

Inclusion Criteria

Participants:

- Older adults with dementia (assessed using scales such as Mini Mental Score Examination, Global Deterioration Scale) in aged care and home settings
- Nurses and formal care staff
- Family caregivers

Type of studies:

The quantitative component of the review considered any randomised controlled trial (RCT); due to the number of identified RCTs, other research designs such as pseudo-controlled trials and before and after-studies, were also considered for inclusion.

The qualitative component of this review considered studies focused on qualitative data including, but not limited to, designs such as phenomenology, grounded theory, ethnography, action research and feminist research.

The textual component included non-research opinion papers, discussion papers and clinical guidelines for inclusion.

Intervention: phenomena of interest

Assisting bathing/showering of older adults with dementia and related educational or supportive interventions for nurses, formal care staff and family caregivers.

Comparison (quantitative component)

- Usual care

Outcome measures

The quantitative component considered the following outcomes:

- Frequency and severity of aggressive or agitated behaviours measured by scales such as RAGE (Rating Scale for Aggressive Behaviour in Elderly).

- Satisfaction rating by residents, family caregivers or nursing/formal care staff.
- Confidence rating by residents, family caregivers or nursing/formal care staff.

The qualitative component considered the following outcomes:

- Subjective accounts of nurses/formal care staff or family caregivers in assisting bathing/showering older adults with dementia.
- Subjective accounts of nurses/formal care staff or family caregivers to have received educational or supportive interventions related to bathing/showering older adults with dementia.
- Subjective accounts of older adults with dementia in receiving assistance in bathing/showering.
- Subjective accounts of older adults with dementia in receiving interventions aiming to improve bathing/showering experiences/outcomes.

The textual component considered the following outcomes:

- Discourses or perceptions related to the provision of assisting bathing/showering for older adults with dementia, that have been derived from clinical experience (i.e. tacit knowledge of clinicians).

Search strategy:

The search strategy aimed to find both published and unpublished studies. A three-step search strategy were utilised in each component of this review. An initial limited search of MEDLINE and CINAHL was undertaken followed by an analysis of the text words contained in the title and abstract, and of the index terms used to describe the article. A second search using all identified keywords and index terms was then undertaken across all included databases. Thirdly the reference list of all identified reports and articles were searched for additional studies.

The databases to be searched included:

- MEDLINE
- CINAHL

- EMBASE
- Cochrane Library of Systematic Reviews
- JBI Library of Systematic Reviews

Grey literature was searched using:

- Conference Proceedings
- Dissertation International
- TRIP
- Mednar
- Google Scholar (included in Mednar) and Google
- Websites of professional bodies in the aged care field

Australia

  - Aged and Community Services in Australia
  - Aged Care Association Australia
  - Council on the Ageing
  - Carers Australia
  - Aged Care Standards and Accreditation Agency
  - National Ageing Research Institute

UK

  - Department of Health
  - NHS Your Health Your Choices
  - English Community Care Association
  - Help the Aged
  - National Care Association
  - National Care Forum

USA

  - American Health Care Association
  - American Association of Homes and Services for the Aging
  - National Long Term Care Ombudsman Resource Center
  - Nursing Homes magazine

- Resource Centers for Minority Aging Research (RCMAR)

Critical appraisal:

Quantitative papers selected for retrieval were assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardised critical appraisal instruments from the Joanna Briggs Institute Meta-Analysis Assessment and Review Instrument (JBI-MAStARI). (Appendix I)

Qualitative papers were assessed using the Joanna Briggs Institute Qualitative Assessment and Review Instrument (JBI-QARI) (Appendix II) and textual papers were assessed using the Narrative, Opinion and Text Assessment and Review Instrument (JBI-NOTARI). (Appendix III) Evidence-based guidelines were planned to be assessed using AGREE (Appraisal of Guidelines and Evaluation) (Appendix IV) but no such publications were identified in the database search.

It was planned that any disagreements between the reviewers would be resolved through discussion, or with a third reviewer. However, there was no disagreement between the two reviewers.

Data extraction:

Quantitative data were extracted from papers included in the review using the standardised data extraction tool from JBI-MAStARI. (Appendix V) Qualitative data were extracted using the standardised data extraction tool from the JBI-QARI (Appendix VI) and textual data were extracted using the JBI-NOTARI. (Appendix VII) The data extracted included specific details about the interventions/phenomena of interest, populations, study methods and outcomes of significance to the review question and specific objectives.

Data synthesis:

The data obtained from aged care settings and community settings were analysed and presented separately.

Due to clinical and methodological heterogeneity, statistical pooling was not possible. Therefore, quantitative data were analysed and presented in a narrative format.

Qualitative research findings were pooled using the JBI-QARI. This involved the aggregation or synthesis of findings to generate a set of statements that represent that aggregation, through assembling the findings (Level 3 findings) rating them according to their quality, and categorising these findings on the basis of similarity in meaning (Level 2 findings). These categories are then subjected to a meta-aggregation in order to produce a single comprehensive set of aggregated findings (Level 1 findings) that can be used as a basis for evidence-based practice.

Textual papers were pooled using the JBI-NOTARI. Parallel to the qualitative synthesis method, pooling of textual papers involves categorisation and meta-aggregation/synthesis to produce a single comprehensive set of aggregated/synthesised findings that can directly guide practice.
Identified evidence was assigned a level of evidence based on the grade of evidence developed by the JBI. (Appendix VIII)

Conflict of interest

No conflict of interest is anticipated.

Development of Best Practice Information Sheet

Development of an evidence-based clinical information sheet (Best Practice Information Sheet) is the ultimate goal of this project based on the results from the systematic review.

Summary of the chapter

In this chapter, the JBI approach to the systematic review and the actual method utilised in this particular systematic review project have been discussed. In the following chapter, results of the quantitative component of the review will be presented followed by the results of the qualitative and textual components.

Chapter IV: Results

This chapter is concerned with discussing the results of the systematic review. Firstly, the process of how the studies were selected will be described, and this is followed by an overview of included studies that were quantitative, qualitative and textual in character. The actual results for each type of study will then be presented separately.

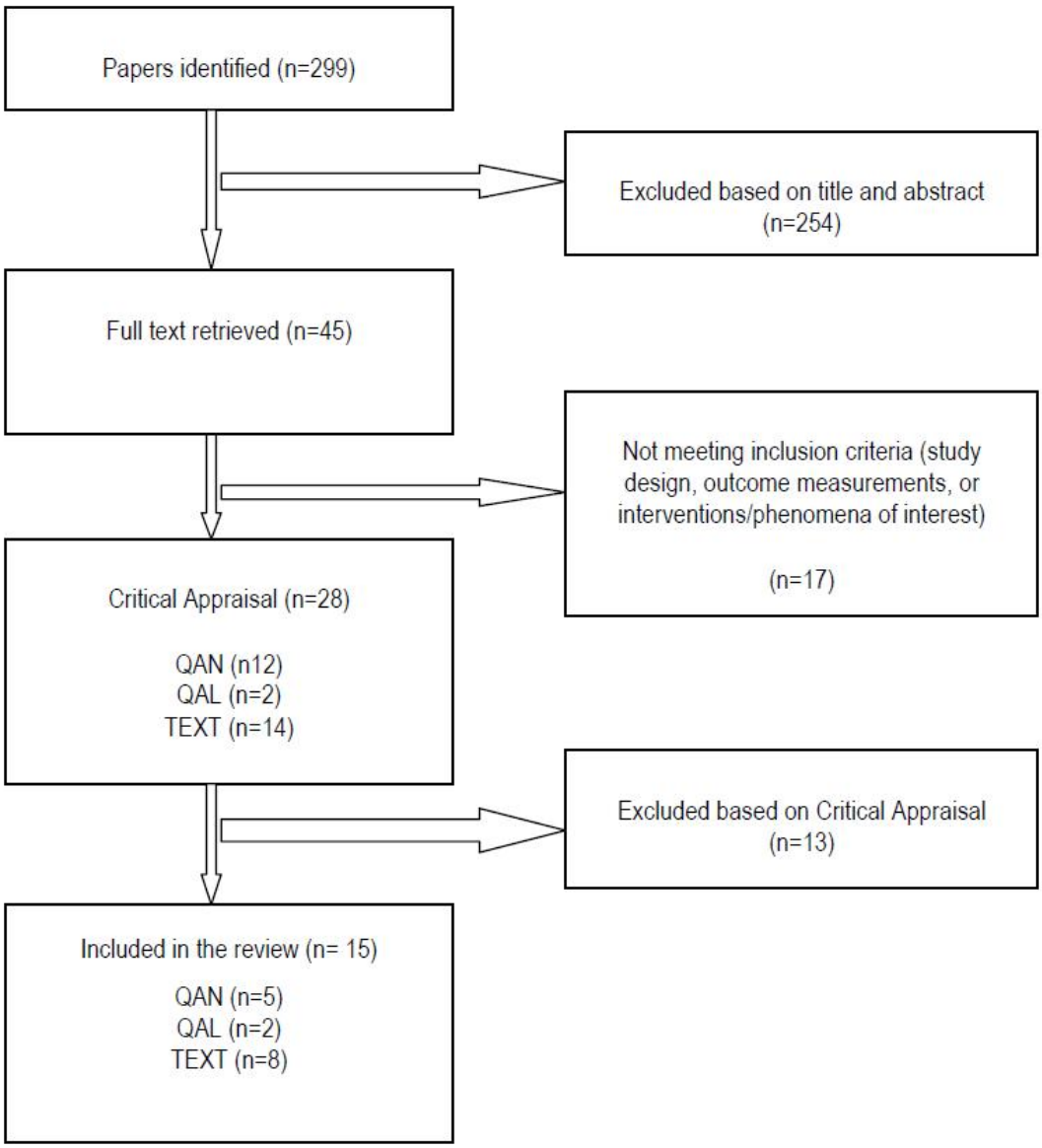


Table 1: Selction process

Selection process

Table 1 on page 32 illustrates the selection process and numbers identified for each phase of the process.

A total of 299 abstracts were identified from the database search. Twenty-eight studies met the inclusion criteria and critically appraised for their methodology. This review focused on 15 articles, comprising five quantitative studies, two qualitative studies and eight textual opinion papers (Appendix IX). A list of the excluded studies and the reasons why they were excluded is attached (Appendix X).

Description of studies

The included studies are briefly described in this section of the review: firstly, quantitative; secondly, qualitative; and thirdly, textual.

The quantitative component

Five studies met the inclusion criteria of the quantitative component including two RCTs (randomised controlled trials),[123,124] one quasi-experimental study with a cross-over design[83] and two within group pre- and post-studies.[5,11]

The methodological quality of the quantitative studies was generally moderate to poor. Both RCTs[123,124] scored five out of 10 for the assessment criteria, which included: comparability of the control and treatment groups; use of the same outcomes measurement and same intervention for both groups; reliable outcomes measurement; and using an appropriate statistical analysis method. Furthermore, both studies did not meet the criteria concerning the explicitly stated method of randomisation (e.g., using a computer system), utilising blinding for participants and/or researchers who conducted the outcome assessment, practise of allocation concealment, or description of people who withdrew from the study. The included quasi-experimental study by Dunn et al.[83] also scored five out of 10 for the same criteria.

The two within group pre- and post-studies[5,11] scored only three out of 10. They failed to meet the same criteria as the three experimental and quasi-experimental studies above. No randomisation or allocation concealment was possible since no separate control group was employed. The outcome measurement was not reliable in either study. In Mickus et al.[5] observation was only conducted by one researcher[5] while nursing assistants conducted the data collection with no clear indication of observation skills or inter-observer reliability in other study.[11] Furthermore, it was not possible to determine whether partipants had been treated identically before and after the intervention phases.[11]

In the controlled studies where two[83,123] or three[124] separate groups were compared, the sample size ranged from 16[83] to 73 while the two within group pre- and post-studies comprised samples of 11[11] and 23[5] respectively. All studies included residents of aged care facilities who were experiencing various levels of cognitive impairment. Some studies only included participants with a history of agitated behaviours[5,11] while other studies included participants who did not have such a history.[11,83] The studies were conducted in the USA[5,11,123,124] and Canada. [83]

Types of interventions were:

- towel bath followed by a person-centred approach[124]
- playing preferred music during bathing episode[123]
- tub bath and thermal bath[83]
- person-centred bathing method (i.e. a bedside consultation model and individualised bathing care plan, that aimed to alter psychosocial environment and physical environment)[11] and
- the PRIDE approach (Privacy, Reassurance, Information, Distraction and Evaluation).[5]

Outcome measures included:

- agitated and aggressive behaviours assessed by The Care Recipient Behaviour Assessment (CAREBA), discomfort assessed by a modified version of the Discomfort Scale for Dementia of the Alzheimer type[124]

- 14 types of behaviours coded from a combination of the Cohen-Mansfield Agitation Inventory and the Ryden Aggression Scale as well as observations in preliminary trials[83]
- aggressive behaviours assessed by a revised version of the Ryden Aggression Scale (RAS) with 10 physically and three verbally aggressive behaviours;[11] and
- agitated behaviours using five of 12 items from the Neuropsychiatric Inventory (NPI), specifically agitation, anxiety, apathy, irritability and disinhibition.[5]

In the study by Clark et al.[123] the tool used was not stated. However, target behaviours were listed on a checklist including hitting, biting, yelling or screaming, crying, abusive language, wandering away, spitting, verbal and physical refusals to cooperate, pinching, scratching, gouging, kicking, throwing of objects, and grabbing. The observers placed tally marks on the observed behaviours.

The qualitative component

Two studies met the inclusion criteria for the qualitative component and these consisted of one study employing grounded theory,[125] and one qualitative descriptive study.[63] The phenomena being investigated included behaviours of clients with cognitive impairment during bath time. A comparative approach was implemented in order to describe the experiences of tub, bath, and shower,[125] and the nursing staff's responses to patient physical aggression and the effects that physical aggression had on the nursing staff.[63]

Data collection methods were non-participant observation[125] and individual in-depth interviews.[63] Data analysis methods were constant comparative analysis[125] and thematic analysis as described by Miles and Huberman.[63] The participants were in aged care facilities and consisted of: firstly, residents with moderate levels of cognitive impairment [125]; and secondly, nursing staff.[63]

A study by Kovach[125] scored eight out of ten regarding methodological assessment. This particular study was of high quality but there was no statement locating the researcher culturally or theoretically, and neither were participants adequately represented in terms of their statements being directly quoted. Another study by Miller[63] scored only six out of ten for methodological assessment because it failed to employ a philosophical and methodological

framework. Additionally, it lacked a description of the researcher's theoretical and cultural perspective and an acknowledgement of the researcher's socio-cultural assumptions that could have influenced the research.

The textual component

Eight non-research articles were included in the textual component of the review. Generally the authors (first author in case of multiple authors) of the eight articles had a high level of expertise in their professional field, such as specialists in aged care[47,11,127], Professor of Geriatrics (geropsychologist) and family medicine,[13] Professor of Psychology (geropsychologist),[128] and a Competency Assessor in Geriatric Care.[129] One study's author worked as an emergency department nurse at a US Air Force Base but did not indicate her level of expertise in aged care.[130] All authors were deemed as having credibility in this topic since six of the eight authors had been actively involved in research projects on issues relating to assisted bathing for older adults with dementia. The remaining two authors were specialist nurses in aged care and - based on their clinical experience - understood older people's behaviours during assisted bathing.

All papers narratively described and discussed the perceived effective and appropriate strategies to minimise agitated behaviours. The articles in this review addressed practical tips and recommendations[130,47,131,132] for towel bath technique,[127] CRAFT bathing approach,[133] person-centred bathing approach.[128] And one paper identified the need for a uniform bathing policy where the dignity and needs of residents were respected.[129] In terms of date range the studies were published between 1994[47] and 2006.[131]

These studies generally demonstrated high methodological quality with assessment scores of seven out of seven,[133, 127,128,131,132] while two articles met six out of the seven criteria: in one case the author's expertise in aged care was not clear[130] and in the other no sufficient reference used to support the author's argument.[129]

Findings

The quantitative component

Pooling of data was not possible for the included five studies because the interventions (clinical heterogeneity) and/or research designs (methodological heterogeneity) varied considerably. For this reason the results representing the quantitative component will be presented in a narrative format.

Person-centred showering vs. tub bath plus person-centred bathing training vs. shower (control)

Sloane et al.[124] examined the effectiveness of two non-pharmacological techniques in reducing agitation, aggression, and discomfort in aged care residents with dementia. Specifically, they analysed nine skilled nursing facilities in Oregon and six in North Carolina. Seventy-three residents with previous histories of agitated behaviour during bathing and 37 nursing assistants who assisted bathing participated in the study. A randomised controlled cross-over study design was used, consisting of a usual-care control group and two experimental arms.

Firstly, intervention group A received person-centred showering training that focused on the needs-based approach. With the person-centred showering method, behavioural symptoms such as aggressive behaviours were seen as expressing unmet needs. A goal of this approach was to provide comfort to and respect the preferences of residents with particular emphasis on improved interpersonal communication. The following strategies were promoted as having practical efficacy, such as providing choices for residents, covering residents with towels to maintain warmth, distract their attention or using alternative approaches, for example no-rinse soap and shower spray.

Intervention group B received the towel bath as a first experimental intervention. The towel bath was an in–bed method in which the caregiver used two bath blankets, two bath towels and no-rinse soap, and two quarters of warm water, while the resident was kept covered at all times. The body was cleansed using a gentle massage technique. Training in person-centred showering was included as a component of the towel bath method.

Group A received person-centred showering during the first six weeks and then the towel bath during the second intervention period. Group B received the same interventions in the reverse order. The control condition was having a shower without person-centred training. Clinical nurse specialists or psychologists instructed the caregivers on person-centred showering interventions. These specialists worked alongside the caregivers (certified nursing assistants) 2 days per week for 4 weeks. Training methods included short didactic training sessions, videotapes to identify behavioural symptoms and their causes, and hands-on supervision during subsequent baths to trial potential solutions. Videotaping of assisted bathing episodes was conducted during the 2 weeks following the completion of the intervention training by research assistants who were not familiar with the study.

Outcome measurements focused on agitation and aggression using the Care Recipient Behaviour Assessment, a tool for rating behavioural symptoms based on a modification of Cohen-Mansfield Agitation Inventory.[45] Discomfort was assessed using a modification of the Discomfort Scale for Dementia of the Alzheimer Type. This scale consists of six items (negative vocalisation, content facial expression, sad facial expression, relaxed body language, tense body language, and fidgeting body language). Blinded rating was conducted with raters watching recorded videotapes and coded what they saw.

The results indicated that all outcome measures decreased numerically for both intervention groups. In the person-centred showering method, aggressive incidents fell by 53% ($P<0.001$) while a 60% decline was recorded for the towel bath strategy ($P<0.001$). Discomfort scores also declined significantly in both interventions ($P<0.001$). The control group did not demonstrate a statistical difference in any outcome measures. Furthermore, significantly less discomfort was associated with the towel bath ($P=0.003$) compared to person-centred bathing. Duration of average procedure time increased significantly (by a mean of 3.3 minutes) with person-centred showering while the towel bath group showed no change.

The authors concluded that person-centred showering and towel bath are safe and effective methods in reducing agitation, aggression, and discomfort during bathing of older adults with dementia. Bathing methods such as these should therefore be promoted.

	Intervention vs. Control: Change from baseline to intervention period		Towel bath cs. Shower: Change from baseline to intervention
	Shower intervention	Towel bath intervention	
	P-value for difference (Wilcoxon rank sum test / Wilcoxon sighed rank test)		
Overall agitation and aggression (% time)	0.02*	0.01*	0.43
Physical agitation/aggression			
Any physical agitation or aggression (rate/15min)	0.06	0.01*	0.17
Any aggression	0.007*	0.002*	0.34
Hit, bite, kick, throw, or spit (rate/15min)	0.49	0.57	0.58
Other aggression (attempts/grabbing) (rate/15min)	0.03*	0.003*	0.23
Verbal agitation			
Yelling, crying, moaning, etc (% time)	0.47	0.19	0.15
Complaints, threats (rate/15min)	0.35	0.10	0.12
Discomfort (Means discomfort sore)	0.001*	<0.001*	0.003*

Table 2: Observed behaviours and discomfort according to intervention status [124]

***Statistically significant based on the Bonferroni-Holm method of adjusting for multiple tests.**

Overall, encouraging results were reported in that the person-centred showering and the towel bath methods reduced agitation, aggression, and discomfort while performing assisted bathing for older adults with dementia. However, applying this result to practice will require careful consideration due to the methodological flaws discussed in the section on description of studies.

Identified Evidence

The person-centred showering approach and towel bath method are effective in reducing overall agitation and aggression, specifically both physical and verbal agitation/aggression, and discomfort during bathing of older adults with dementia. (Level II)

Person-centred bathing in reducing aggressive behaviours

Hoeffer et al. (1997)[11] examined the impact of the person-centred approach in reducing aggressive behaviours of people with dementia during bathing/showering. A pre-post test study design was used with 11 residents in a proprietary intermediate care facility in the USA. The participants had a history of physically or verbally aggressive behaviours during two of four bathing episodes. Informed consent was obtained from a family member of the residents. All residents had moderate to severe cognitive impairment with a score of 21 or less on the MMSE (Mini Mental State Exam).

Two major components of intervention included a bedside consultation model and individualised bathing care plan. The aim of the intervention was to alter the psychosocial and physical environment while encouraging the shift from task–focused care to a person-centred care that focused on residents' needs and what they wanted.

A CNS (clinical nurse specialist) observed a nursing assistant and the resident during an assisted bathing episode. This CNS worked with the assistant for three to eight times using a problem-solving approach, firstly by helping the assistant identify specific functions to carry out while bathing a particular resident. This included, for example, maintaining skin integrity by removing urine residue and reducing odour. Following this the optimal frequency of a bath was determined with due consideration given to individual context and state of health. Instead of a rigid routine bath schedule, the aim was to achieve a flexible care provision strategy. The CNS and the assistant tried alternative methods regarding the bedside consultation and developed an individualised bathing care plan. The length of intervention varied from two to four weeks depending on the resident's status and availability of the assistant.

Outcomes were measured using a revised version of the Ryden Aggression Scale (RAS) to collect data[9] on the number and types of aggressive behaviours including the following 10 physically (biting/spitting, elbowing, hitting/punching/slapping, kicking, pinching/squeezing, pushing/shoving, pulling hair, scratching, making threatening gesture, throwing an object/striking a person with an object) and 3 verbally aggressive behaviours (crushing/obscene/vulgar language, hostile language/name calling, making verbal threats). Other behaviours included crying and screaming.

The Assessment of Bathing Experience incorporating items from the Experience of Caring Semantic Differential Scale[134] were used to assess nursing assistants' perceptions concerning residents' behaviour and experience of caregiving during bathing. The results emphasised a significant reduction in overall frequency of physical aggression, verbal aggression in the post-intervention data compared to pre-intervention data. The data for individual subscales were not reported.

A significant improvement was also reported in the post-intervention score on the nurse assistants' perception of aggressive behaviours (t=2.93, p=0.02). Nurse assistants' perceived experience in assisting bathing also recorded a significant improvement (t=2.47, p=0.03). The authors concluded that altering the psychosocial, physical and organisational environment and implementing an individualised person-focused approach can reduce aggressive behaviours in residents and caregivers.

NOTE:
This table is included on page 41 of the print copy of the thesis held in the University of Adelaide Library.

Table 3: Aggressive behaviours and being upset before and after the intervention. [11]

M= Mean, SD=Standard deviation. * p<0.05, one-tailed test.

NOTE:
This table is included on page 42 of the print copy of the thesis held in the University of Adelaide Library.

Table 4: Assessment of bathing scale items before and after the intervention. [112]

***p<0.05, one tailed test.**

The study demonstrated positive effects of a person-centred approach in reducing physical and verbal aggression. This study also noted an improvement in caregivers' perceptions and experiences of such behaviours exhibited by older adults with dementia during assisted bathing. However, the study employed pre- and post-design with no control group and scored only three out of ten in the assessment of methodological quality. Therefore, this methodological limitation should be taken into account before its method of bathing is put into practice.

Identified Evidence

The person-centred approach is effective in reducing physical aggression, and verbal aggression among older adults with dementia. (Level III)

Employing the person-centred approach improves caregivers' perception and experience of aggressive behaviours exhibited by older adults with dementia in assisting bathing/showering. (Level III)

Thermal bath vs. conventional tub bath in reducing agitated behaviours

Dunn et al. (2002)[83] compared a conventional tub bath and thermal bath method in assessing the frequency of agitated behaviours. Fifteen residents diagnosed with dementia in a continuing care centre in Canada were involved in the study. This study implemented a cross-over design where each resident received four consecutive sessions of two different bathing methods. The participants were randomly allocated to the thermal bath and the tub bath in that order or the tub bath followed by the thermal bath. The thermal bath was a modified version of the towel bath method and required a capful of Sproam™, a non-rinse cleanser, 300ml of very hot water and 9 wash cloths. The soaked warm wash cloths were place on each body part and no rinsing was required. The sessions continued over an 8-week period.

Outcome measures included 14 observable behaviours developed by the research team and these behaviours were based on the Cohen-Mansfield Agitation Inventory (CMAI),[45] the Ryden Aggression Scale (RAS)[15] and clinical observation in preliminary trials. The fourteen behaviour measures included noisy breathing, distressed facial expression, pained facial expression, frowning, grabbing, hitting, strange noises, pushing, repetitive mannerisms, retracting, screaming, shivering, verbal aggressive behaviour and negative vocalisation.

The thermal bath group had a significantly lower total of all 14 observed behaviours ($t=4.18$, $P<0.001$) than the control, tub bath group. Of the 14 individual behaviours, the thermal bath revealed a significantly lower frequency only in shivering ($t=3.07$, $P<0.008$). Behaviours including noisy breathing, facial grimacing and negative vocalisation indicated marginal differences favouring the thermal bath. Furthermore, male residents were more receptive to thermal baths than female residents. The authors concluded that the thermal bath constituted an effective approach in reducing the agitated/aggressive behaviours of people with dementia.

NOTE:
This table is included on page 44 of the print copy of the thesis held in the University of Adelaide Library.

Table 5: Summary of frequency of agitated behaviours in two bathing conditions and the differences between totals for males (n=9) and females (n=6). *83*

The study demonstrated that the thermal bath is superior in reducing aged residents' agitated behaviour compared to conventional tub bath. Moreover, the thermal bath appears more effective in males than females in reducing agitated behaviours during assisted bathing. Again, due to the methodological limitations, careful consideration is required before putting this method into practice.

Identified Evidence

The thermal bath is more effective in reducing agitated/aggressive behaviours than the traditional tub bath method in older adults with dementia. (Level II) Furthermore, the thermal bath method is more effective in reducing male dementia-afflicted residents' agitated/aggressive behaviours than female residents who have dementia. (Level II)

The PRIDE approach (psycho-educational intervention)

Mickus et al. (2002)[5] evaluated the impact of a psycho-educational intervention on nursing assistants in regard to managing problem behaviours during bathing. A within group, pre-post

design strategy was employed. This particular study took place in a 210-bed community residential aged care facility in the USA. Twenty-seven residents with histories of behavioural disturbances during bathing were selected. Only 41% of participants were able to complete the MMSE and 59% of residents who had completed the test showed severe cognitive impairment with a score zero due to flooring effect. Overall, the MMSE score ranged from 0 to 24 with a mean score of 6.

The intervention was based on the PRIDE principle, an acronym that stands for Privacy, Reassurance, Information, Distraction, and Evaluation. A 30 minute interactive seminar with nursing assistants was provided, consisting of a 10 minute video and discussion and education on how the PRIDE principles reduce agitated behaviours while bathing residents with dementia. The video provided examples of how the PRIDE principles should be applied in practice:

- Privacy: encourage nursing assistants to close the bathroom door or avoid undressing a resident until it becomes necessary.
- Reassurance: remind the resident that he/she was in a safe environment.
- Information: provide information before and during the bath.
- Distraction: bring up a pleasant topic to the patient.
- Evaluation: pay attention to the resident's response.

The tape also offered two different scenarios: a bad bath without the use of behavioural strategies and a good bath when using appropriate behavioural approaches.

Outcomes were measured using the Neuropsychiatric Inventory (NPI) [15] with 12 subscales, these specifically being frequency and severity of delusions, hallucinations, agitations, apathy, anxiety, depression, euphoria, irritability, disinhibition, aberrant motor behaviour, changes in appetite, night-time behaviour disturbances. Of these subscales, only agitation, anxiety, apathy, irritability and disinhibition were used in the post-PRIDE data collection because they indicated the most prominent scores in the pre-intervention phase.

After one to two months of PRIDE training, post-intervention data were collected. Of 27 residents who participated, four died during the study period and therefore the post-intervention data were collected from 23 residents.

Each of the five behaviours showed improvement in the post-intervention phase while a statistically significant improvement was observed in reduced anxiety and irritability. The authors concluded that introducing behavioural approaches should be facilitated to minimise behavioural symptoms among nursing home residents during bathing.

Condition	Pre-PRIDE n-27	Post-PRIDE n=23	Within-subject change		P-value (McNemar's test)
			Improved	Worsened	
Agitation	17	12	5	1	0.218
Anxiety	17	9	7	0	0.0016
Apathy	5	2	2	0	0.500
Disinhibition	4	0	4	0	na*
Irritability	14	6	7	0	0.016

Table 6: Presence of behavioural conditions: pre- and post-Interventions.[5]

The study demonstrated that psycho-educational intervention resulted caregivers being able to better manage the anxiety and irritability of older adults with dementia during assisted bathing. Again, the study employed pre-and post-design with no control group and consequently the quality assessment score was three out of ten. This methodological limitation should be considered before the study's results are put into practice.

Identified Evidence

Use of psycho-educational intervention for caregivers is effective in reducing anxiety and irritability while bathing older adults with dementia. (Level III)

Use of music in reducing aggressive behaviours

Clark et al. (1998)[123] examined the effectiveness of recorded, preferred music in reducing the occurrence of aggressive behaviours among people with Alzheimer's-type dementia during bathing. Eighteen residents from an aged care facility in the USA (14 female and 4 male) ranging in age from 55 to 95 were selected for the study. All participants had a history of aggressive behaviour during caregiving routines. The participants' MMSE scores ranged from 1- to 22 while three participants were unable to complete the test and only three scored over 15. Residents with uncorrected hearing deficit and residents with no family members who could provide information on the resident's preference for music type were excluded from the study. The data on participants' backgrounds and music preferences were obtained by interviews with family members.

Outcome measures included occurrence of observed aggressive or agitated behaviours including yelling, abusive language, hitting, verbal resistance, crying, physical resistance, grabbing, pinching, kicking, spiting wandering, biting, throwing, scratching and gouging.

A cross-over RCT design was used. Participants were randomly scheduled for allocation to a control (no music) condition or an intervention condition with recorded selections of preferred music via Magnavox CD radio-cassette recorder during bathing. The most preferred types of music were hymns, old-time string music (folk music), big band and classical music. After two weeks, conditions were reversed. In total, each participant was observed for 20 bathing episodes including 10 episodes with music and 10 episodes without music.

The behaviours recording the highest frequency included abusive language, yelling, hitting and verbal and physical resistance. A two-tailed t-test was used to examine differences in the frequencies of these five behaviours between the two conditions with or without music during bathing. Results indicated a statistically significant improvement in behaviour when music was played, in that only hitting behaviours were reported ($p<0.05$), while the other 4 behaviours showed insignificant results. The total number of aggressive behaviours between the music and no music conditions also demonstrated a statistically significant improvement

($p<0.05$). Additionally, no significant difference was found in the mean length of bathing episode between music and no music conditions.

NOTE:
This table is included on page 48 of the print copy of the thesis held in the University of Adelaide Library.

Table 7: Comparison of the five most frequently observed aggressive behaviours according to condition *135*

The study highlighted the beneficial effects of using individual residents' music of choice to reduce their aggressive behaviours during assisted bathing. The study employed a cross-over RCT design but again careful consideration is required in using this study's suggested bathing strategy, due to its methodological limitations.

Identified Evidence

Playing the preferred music of older adults who have dementia can reduce the frequency of aggressive behaviours during bathing. (Level II)

The qualitative component

The two studies included here were conducted in residential aged care settings. An analysis of these studies indicated that 13 findings were identified and these were integrated into five categories according to commonalities in meaning. The categories were further integrated into two meta-syntheses.

Qualitative meta-synthesis 1

Meta-synthesis 1 was derived from the following four categories with 10 findings.

Category 1: A struggle for control: residents used various strategies to gain control during bathing.

Category 1 represents a resident's struggle to obtain control over the situation during assisted bathing, as perceived by caregivers.

The three findings were directly extracted from Kovach et al. (1996).[125] [C] and [U] indicate level of credibility of each Finding. [C] refers to credible evidence that is plausible in light of the data. [U] is unequivocal evidence beyond reasonable doubt.

Finding 1: People with dementia used strategies to share control during bathing. [C]

Strategies that reflected sharing control were used often, though not as frequently as those used to attain control....."You're going to give me another bath?"; "What are you going to do now?" [125] (p.29)

Finding 2: People with dementia resigned control after attempting to attain control. [C]

Subjects who resigned control began by using techniques to attain control and then opted to comply with and submit to the directives of the nursing assistant through passive compliant behaviours and/or verbal submission. .....:It doesn't help anyway"; "I'm so tired"; "Okay, let's do it" [125] (p.30)

Finding 3: Attaining control was the coping strategy used by cognitively impaired people. [C]

Attaining control was the coping activity used most often by cognitively impaired older adults in this sample. Subjects attempted to attain control over the situation through a variety of strategies.....Examples are : "Never did I think I'd be doing something like this"; "Ugh, Oh,

what I go through"; "Oh God, oh no please"; "Oh you're pinching me down there"; and “Go easy on my legs" [125] (p.30)

Category 2: Knowing a resident: importance of good assessment skills and understanding each resident is highlighted.

Category 2 refers to caregivers’ perceptions of the importance of relevant assessment skills and understanding the unique needs of individual residents. The following four findings were extracted from Miller (1997).[63]

Finding 4: Nursing staff understood each individual patient's behaviour patterns. [C]

Waiting until the patient invites you describes how the nursing staff understood each individual patient's behaviour patterns…....."in the morning for the shower, you have to wait until they are ready, calm. They will not fight you....but once in a while, you get a patient that likes a shower. It's an individual thing. I talk nicely....then they say "yes". But when it's time, they say no....." [63] (p.31)

Finding 5: Nursing staff understood the person to whom they were providing care. [C]

Speaking to the person behind the dementia was reported by the staff …….”Smiling, I make people like me....even the families like me. I call everyone "Darling" I say "How are you my love?" "Good shabbos, everybody" I also say Shabbat Shalom." [63] (pp.32-33)

Finding 6: Understanding the patients and their behaviour was crucial for the nursing staff. [C]

Understanding the patients and their behaviour was crucial for the nursing staff to be able to provide safe nursing care to physically aggressive patients....."Most of the CNAs and nurses know all the patients well, so we can almost predict how the patients will react and can alleviate problems before they come up." [63] (pp.29-30)

Finding 7: Watching for warning signs: Nurses were observing for behaviours that were antecedents to patient aggression. [C]

“Sometimes they tell you what they need, but sometimes you have to watch them. Florence kept banging on the table and I didn't answer her but I realised she really had to go to the bathroom. So I figured it out after a while..." [63] (p.32)

Category 3: Working with a resident: importance of communication skills with older adults with dementia was emphasised.

Category 3 describes the caregivers' awareness of the importance of dementia-specific communication skills during assisted bathing. The following three findings were extracted from Miller (1997).[63]

Finding 8: Nursing staff allowed the patient's fantasy to continue, and entered into it with the patient. As a result patients were more cooperative. [C]

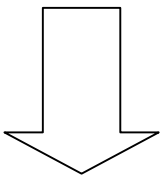
"….going into their world" as an attempt to elicit patient cooperation and minimise aggression. "Going into their world" included responses such as "being part of their fantasy", and "going along with them" when providing care to disoriented elderly residents. "But for some patients we just have to go along with them. If you don't, it will frustrate and upset them. You have to go into their world. Otherwise you'll have problems." [63] (p.35)

Finding 9: Nursing staff helped the residents understand what they were attempting to do for them to reduce aggressive behaviour. [C]

"And if they start to raise their fist....I explain, "how would you like it if I did that to your daughter or wife?" and sometimes they understand, sometimes not. Sometimes I'll say, "I'll be back in an hour when you're in a better mood. And an hour later I'll come back and you wouldn't believe it was the same person....." [63] (pp.33-34)

Finding 10: Adjusting care to the patient included nursing approaches which reflected the nursing staff members' attempts to individualise care. [U]

"You've got to let them be the boss, in their time frame, when they want it done. You've got to put your schedule around their more or less. I've been a CNA a long time and that mentality is "I've got to get them bathed and dressed and in the day room by 11o'clock" but I know now as a nurse you just have to change your nursing approach because of the task orientation." [63] (p.31)



Judging by these three categories, assisted bathing is illustrated as an experience that is co-constructed by both caregivers and a resident with dementia. Residents seek to obtain control in a situation where they are actually powerless, while caregivers work with the resident using relevant assessment and communication skills to minimise agitated behaviours. The core essence here is that the individual caregiver's experience is expressed as a responsive process, not as one-way communication from caregivers to residents.

Meta-synthesis 1 (see below) was developed to inform practice in minimising agitated behaviours during assisted bathing of older adults with dementia in a residential aged care setting.

Identified Evidence: There should be a strategy to facilitate the sense of control for residents and caregivers should have relevant assessment and communication skills. (Level I)

The following table is a visual presentation of the meta-synthesis 1.

Finding	Category	Synthesised finding
Attaining control was the coping strategy used by cognitively impaired people. (C)	A struggle for control: residents used various strategies to gain control during bathing.	There should be a strategy to facilitate the sense of control for residents and caregivers should have good assessment and communication skills. Experience of assisted bathing is co-constructed by both a resident with dementia and a caregiver/caregivers. Residents try to take control in the powerless situation while caregivers try to work with the resident using good assessment and communication s
People with dementia resigned control after attempting to attain control. (C)		
People with dementia used streategies to share control during bathing. (C)		
Nursing staff knew the importance of understanding each individual patient's behaviour patterns. (C)	Knowing a resident: importance of good assessment skills and understanding each individual resident was highlighted.	
Nursing staff understood something about the person to whom they were providing care. (C)		
Understanding the patients and their behaviour was crucial for the nursing staff. (C)		
Watching for warning signs: Nurses were observing for behaviours that were antececents to patient aggression. (C)		
Nursing staff allowed the patient's fantasy to continue, and entered into it with the patient. (C)	Working with a resident: importance of communication skills with older adults with dementa was emphasised.	
Nursing staff helped the residents understand what they were attempting to do for them. (C)		
Nursing staff tried to adjust their approach to provide individualised care. (U)		

Table 8: Qualitative Meta-Synthesis 1

Qualitative meta-Synthesis 2

Meta-synthesis 2 was derived from the following two categories with three findings.

Category 4: Fear of injuries was a concern of caregivers.

Category 4 illustrates the caregivers' fear of possible injury to residents with dementia as well as fearing for their own safety during assisted bathing. The following finding was extracted from Miller (1997).[63]

Finding 11: Fear of patient injury was a constant concern of the nursing staff. [C]
"They hit me but I am stronger than them. I am scared a lot that they will hurt themselves....I am also scared when they scream so loud, especially in the beginning, when I was new." [63] (p.37)

Category 5: Protecting a resident's dignity was considered important.

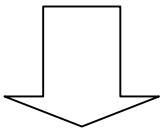
Category 5 describes the caregivers' perceptions of the importance of protecting a resident's dignity during assisted bathing. The following two finding were extracted from Miller (1997).[63]

Finding 12: Attempts at preserving the patient's dignity when providing care reduced the incidence of physically aggressive behaviour. [C]

"Some ladies, first thing I do is close the door. Some ladies like me to give them their shower. I say to them "you wash the front and I'll wash the back." One lady told her husband "He has a lot of respect for me." Some ladies still don't want me to shower them so I will trade with another CNA.".[63] (p.35)

Finding 13: Consider how you would want to be treated. [C]

"You have to think how you would want to be treated with respect and compassion. Sometimes that is hard. But you know, they could be your mother, or your father.....and it makes you wonder if you might end up like that someday...so I try to keep that in mind when I go about my business here." [63] (p.31-32)



From these two categories, the importance of respecting a resident's dignity was highlighted, while fear of injuries to the residents and themselves was a constant concern for nursing staff.

Identified Evidence: There should be a strategy to promote safe assisted bathing while dignity of the patient is respected. (Level I)

The visual presentation of meta-synthesis 2 is as follows:

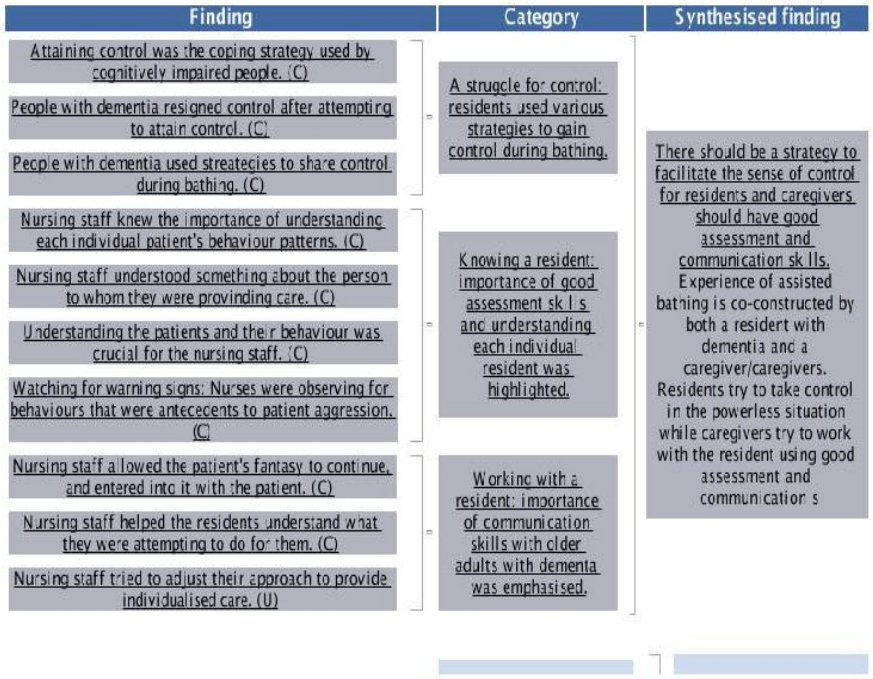


Table 9: Qualitative Meta-Synthesis 2

Textual opinion component

From the eight articles that were included, 63 findings were identified. Fourteen categories emerged from the findings and the categories were further synthesised into the following five synthesised findings:

Textual synthesis 1.

Synthesis 1 was developed from the following three categories.

Category 1: Consider assisted bathing as an opportunity for interaction/relational process with a resident [C]

This category is derived from five findings that addressed the dialogical/relational nature of assisted bathing for people with dementia. [C] and [U] indicate level of credibility of each Finding. [C] refers to credible evidence that is plausible in light of the data. [U] is unequivocal evidence beyond reasonable doubt.

Finding 1: Adapting interpersonal/relationship factors is important. [C]

The relationship between you and the person you are bathing is enhanced by the following general approaches: Address the person by his/her preferred name, encourage the person in conversation, give compliments and praise, tell the person what you are doing at all times and avoid surprised.[128] (p.12)

Finding 2: Being attuned to resident's emotional response. [C]

They can evaluate their own practice in this area by asking themselves if they listen and acknowledge when the resident cries out for them to stop, or do they simply continue with their care? [133] (p.8)

Finding 3: Focusing on the person and relationship greatly improves the outcome. [C]

Focusing on the person and the relationship rather than the task greatly reduces discomfort and behavioural symptoms. We found that caregivers assisting with bathing often felt rushed and frustrated, while residents felt a loss of control and even attacked. [131] (p.44)

Finding 4: Forced bathing should be eliminated because bathing is a form of human interaction. [U]

The authors of this article make the case for the elimination of forced bathing. Research supports this change in philosophy and practice, whereby bathing is not a task to be performed but rather a human interaction. [131] (p.40)

Finding 5: Modifying actions to meet resident's level of understanding. [U]

When you bathe a patient with dementia, you may inadvertently provoke aggressive behaviour by rushing her, speaking in an abrupt tone, or touching her without warning. Try to communicate your actions and intentions at her level of understanding, using a relaxed tone of voice and body language. [130] (p.23)

Category 2: Encourage residents to be actively involved in the assisted bathing process

This category encapsulates the perceived importance of providing encouragement for residents to be involved in their own care during assisted bathing.

Finding 6: Allowing the resident to perform self-care while caregivers exhibit relaxed and smiling expression can improve the outcomes. (U)

Allowing the resident to perform self-care tasks and the caregiver smiling and exhibiting a relaxing affect were positively associated with calm functional and attentive resident responses. [47] (p.36)

Finding 7: Person should feel in control. [C]

Help the person feel in control. Give choices and respond to individual requests. Support remaining abilities. Negotiate or find a reason that the person can accept. The goal is for you to help the person to get to "yes." [128] (p.11)

Finding 8: Residents should be encouraged to be active participants in the bathing experience. [C]

Encourage the patient to perform a range of motion exercises such as washing her face, if she is able. As an added benefit, performing a small task like this will make her feel like an active participant in the bathing process. [130] (p.22)

Finding 9: The residents should be encouraged to participate. [C]

If able, he/she should be encouraged and assisted to wash areas of his/her body. [133] (p.8)

Category 3: Respect residents' dignity and wishes during assisted bathing

Finding 10: Residents' preferences should be respected. [C]

Often we are too influenced by the labels of "dementia" "cognitively dysfunction" and "incompetence" to even try to learn more. It is important to remember that a finding of incompetence means that a person cannot perform certain tasks and therefore requires a surrogate to make decisions. A finding of incompetence, however, does not mean that resident is no longer a person and that his or her wishes can be ignored. [129] (p.10)

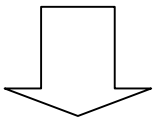
Finding 11: Staff should provide care that focuses on the resident, maintains dignity and respects personal rights. (U)

Nursing home reform as implemented under the Omnibus Reconciliation Act of 1987, charged staff with providing care that focuses on the resident, maintains dignity and respects personal rights. This article describes how these principles can be applied by caregivers who bathe persons with dementia. [132] (pp.677-678)

Finding 12: Tender handling of the resident during bathing is crucial. (C)

"Am I being as TENDER as I could possibly be?" [133] (p.6)

Tender handling of the resident with dementia goes beyond attitude. The attendant must be tender in handling the body during washing. [133] (p.8)



Identified Evidence: Assisted bathing should be considered an opportunity for positive and respectful human interaction with a resident in order to minimise aggressive behaviour. (Level III)

The visual presentation of textual meta-synthesis 1 is as follows:

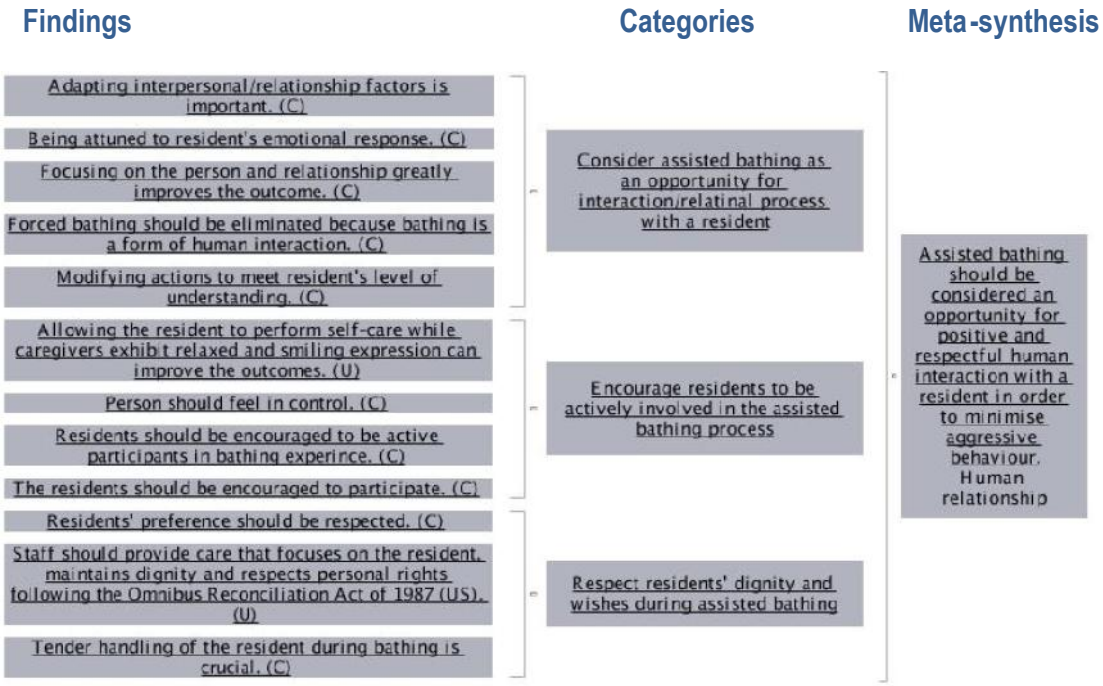


Table 10: Textual Meta-Synthesis 1

Textual synthesis 2.

Synthesis 2 was derived from the following six categories:

Category 4: A flexible approach is crucial to providing individualised care.

Finding 13: Be flexible and creative to meet unique needs of each resident. [U]

Be creative. If your patient can't handle a shower or bath, try bathing one part of her body each day until you've washed her all over. Although her safety is your top priority, take her bathing preferences into consideration as much as you. [130] (p.23)

Finding 14: Be flexible when bathing every person. [C]

Modify your approach to meet the needs of the person. This involves adapting: 1) your methods (e.g. distracting the person with singing while bathing); 2) the physical environment (e.g., choosing correct size of shower chair); and 3) the procedure (e.g. dividing up tasks such as hair washing and bathing).[128] (p.11)

Finding 15: Inform families of individualised care plan regarding bathing. [U]

Nurses in all settings should work with families so that they can better understand the many ways that hygiene can be maintained. Without information, family members may see less-frequent showering as a way for nursing home staff to get out of doing the work, for example, rather than as a method of individualised care. [131] (pp.47-48)

Finding 16: Seek advice from other staff to make the bath more comfortable. [C]

Talking with others about ways to meet the needs of the person gives you an opportunity to find different ways to help make the bath more comfortable. [136] (p.12)

Finding 17: Stop when a person becomes distressed. [U]

When a person becomes distressed, stop and assess the situation. It is not normal for a person to cry, moan, or fight during bathing. Look for the underlying reason for the behaviour. [136] (p.12)

Finding 18: Stopping the bath should be an option. [U]

It should not be considered standard or normal to have screams cries, and protests coming from the bathing room. When sighs of distress occur during a bath, try to end on a positive note and reapproach later to finish washing critical areas if necessary. [136] (p.14)

Category 5: A tailored individual approach is necessary

Finding 19: An individualised approach from a caregiver with good communication skills is required while alternative choices should be considered if necessary. [C]

It suggests that if caregivers individualize their approach, structure the environment to provide comfort and pleasure, utilize skilful communication techniques, and remain open to alternative maintaining personal hygiene will usually be a pleasant experience for all involved. [132] (p.678)

Finding 20: Meeting each person's individual needs is necessary. [C]

The most common personal needs expressed by elders during bathing are freedom from pain, cold and fear, and a wish for a sense of control over what happens to them. [136] (p.12)

Finding 21: Preventative strategies should be utilised based on a sound knowledge of the individual patient. [U]

Use of all or any of these strategies must be based on a sound knowledge of the individual patient; learning the resident's habits with respect to bathing is critically important. This information often is available from the resident's friends or family, and should be incorporated into planning whenever possible. [47] (p.38)

Category 6: Creativity is required to plan and provide positive bathing experiences for residents.

Finding 22: Bathing should be treated as a craft that requires complex skills, assessment and creativity rather than a mechanical task. [C]

Bathing is not simply a mechanical task, but rather a craft requiring complex skills, assessment, and creativity. [132] (p.678)

Finding 23: Considering various techniques such as providing choices or playing music is necessary to individualise the patient's bathing experience. [U]

Use various techniques to individualise the patient's bathing experience, such as providing choices, distracting her with food as a special treat or playing music, using bathing products suggested by family members, or modifying the type of shower head used to rinse her-a spray that's too strong may make her feel like she's drowning. [130] (p.22)

Finding 24: Creative thinking is important for providing individualised care. [U]

Staff need to ask themselves the following question: Am I being as CREATIVE as I could possibly be? [133] (p.6)

Category 7: Organisational adjustments are necessary to provide individualised care.

Finding 25: A flexible hygiene care schedule should be considered. [U]

Planning hygiene care often is predicated on institutional routines; the resident may receive a bath or shower on a certain day at a certain time on the basis of room assignment. Such systems accomplish work goals of ensuring that tasks are evenly distributed among staff members and all residents receive the required element of physical care. [47] (p.36)

Finding 26: Adapt organisational environment (i.e. scheduling of bathing or assignment of caregivers) to provide individualised care. [U]

Rigid policies and practices related to acceptable frequency and types of bathing will hamper your ability to provide individualised care. Some possible ways to modify the organisational environment include: use consistent assignment of caregivers, encourage flexibility in schedules for baths, use two care providers if necessary, try a bed bath, invite family members and respect the person's right to say "no". [136] (p.14)

Finding 27: Policies should provide both nursing care staff and patients with discretion in bathing. [U]

Removing the compelling necessity of "treatment order" can foster patient/resident well-being, the development of alternative bathing procedures or even a reduction in the frequency of bathing. Policies should provide both the patient/resident and the caregiver/nurse with more discretion with respect to bathing. [129] (p.10)

Finding 28: Staff feel they are rushed to give residents showers according to the schedule. [C]

Staff reported to us that they feel rushed to get residents up and showered before breakfast. [131] (p.42)

Finding 29: Staff should be encouraged to provide flexible care depending on each resident's condition. [U]

The care team can review the bathing routines in the facility to determine how many residents are bathed at hours of the day beyond 0700-1030. If most of the residents are being bathed between these hours, the stage is set for a very traditional practice that might include forcing residents to bathe against their will, their natural schedule, or their inclination. [133] (p.8)

Finding 30: The institutional involvement is crucial for families to understand flexible and approach.[C]

Administration can be very influential when families need assistance to appreciate that excellent practice is not necessarily measured by giving their loved ones daily showers. [133] (p.6)

Finding 31: There should a uniform policy that promotes optimal bathing procedures across institutions. [U]

Bathing a cognitively impaired person against his or her wishes is thus legally permitted and largely unregulated. We believe health care institutions can develop, between themselves a uniform policy that promotes optimal bathing procedures. [129] (p.10)

Category 8: Try an alternative approach like towel bath

Finding 32: The towel bath option is congruent with a person-centred care philosophy. [U]

It is a procedure that can be adapted to the care of the most challenging resident and will help staff begin to display person-centred care for the resident who is afraid of care procedures and respond negatively as a result. [127] (p.10)

Finding 33: Caregivers should not force a reluctant resident to bathe or shower. Consider other alternatives. [C]

It emphasizes that caregivers when faced with a reluctant resident, should first ask if the bath or shower is really necessary in this way and at this time. [132] (p.678)

Finding 34: The towel bath method can reduce a patient's discomfort and aggressive behaviour. [C]

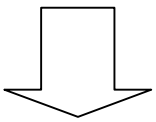
The towel bath, which focuses on the relationship rather than the task, can significantly reduce the patient's discomfort and aggressive behaviour and help foster a therapeutic relationship between caregiver and patient. It's especially useful for a patient who's bedridden. [130] (p.22)

Finding 35: The towel bath method should be taught in educational training. [C]

The towel bath is a very useful technique which should be incorporated into educational training programs for any care provider who will be working with persons with dementia. [127] (p.10)

Finding 36: Towel-bath is an effective approach in reducing agitation. [C]

Using the towel bath to clean the skin for such residents as Helen results in a reduction of agitation and an increase in comfort as the skin is cleansed. [127] (p.10)



Identified Evidence: Creative and flexible care plan and delivery with organisational support should be in place in order to provide effective assistance in minimising aggressive behaviours during bathing. (Level III)

The visual presentation of textual meta-synthesis 2 is as follows:

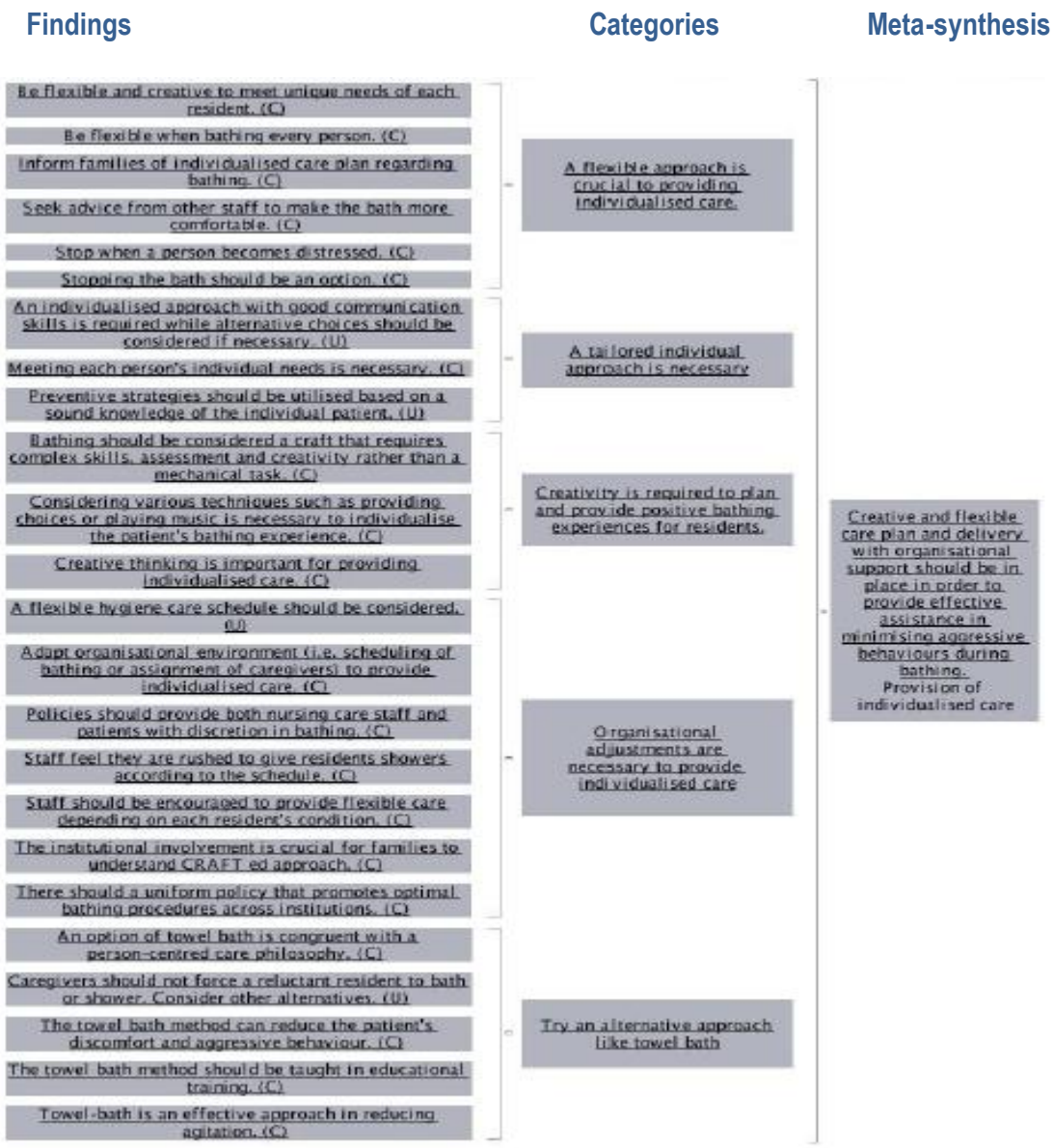


Table 11: Textual Meta-Synthesis 2

Textual synthesis 3

Synthesis 3 was built on the following 13 findings and three categories:

Category 9: From a rigid custodial task-focused bathing to a pleasant and therapeutic experience

Finding 37: Bathing has been considered a routine practice in most nursing homes in the US without consideration of patients' preferences. [U]

Most nursing homes in the United States schedule routine showers or tub baths for residents at least twice per week. The bathing method and schedule are usually based on the facility's routine and not on the residents' preferences. [131] (p.42)

Finding 38 Bathing should be understood as a pleasant experience rather than a simple task for both caregivers and residents. [C]

Bathing should be a pleasant experience for both of you, not just a task to be performed. [130] (p.22)

Finding 39: Behavioural interventions are preferred over restrictions. [U]

Behavioural interventions are readily usable in the nursing home, because they rely on the discretionary power of the nurse in implementing the treatment plan. This type of approach has distinct advantages because of the current mandate to seek alternative to physical and chemical restraints. [47] (p.38)

Finding 40: Caregivers tend to rush through tasks to completion while providing minimal cues to the residents. (U)

Because of the productivity demands of the institution, caregivers may rush through tasks, providing minimal cues to the resident. In the interest of expediency, the caregiver may perform activities that the resident might be able to do with appropriate guidance. Because the nursing assistant has to balance the needs of several patients, the resident may not be offered any choice as to the timing of the bath/shower. [47] (p.36)

Finding 41: The primary purpose of bathing should be to provide a therapeutic intervention to promote relaxation and comfort. [C]

Rather, the organisational philosophy should be the foundation document that explicitly outlines the primary purpose for bathing: as a therapeutic intervention to promote relaxation and comfort. [133] (p.6)

Finding 42: The traditional restrictive thinking that leads to custodial and rigid care practices should be re-considered. [C]

Some examples of thinking that lead to custodial and rigid care practices are statements such as: every resident must be bathed daily; every resident should have their clothes changed daily whether the garments are soiled or not; hair should be washed at the same time as the shower to save time for the hairdresser; all bathing must be completed by 1100hrs or my colleagues will think I'm lazy, disorganised, etc. [133] (p.7)

Finding 43: The values placed on hygiene have been exaggerated under cultural and institutional bias. [C]

Nurses/caregivers feel pressured to carry out the order and are permitted little or no discretion. A retreat from considering bathing a treatment allows us to revisit the values placed on hygiene, and the often exaggerated relationship between hygiene and health, and the cultural and institutional biases with respect to hygiene. [129] (p.9)

Category 10: From management to prevention

Finding 44: Stressors of aggressive behaviour during bathing can be controlled. [C]

The good news is that the stressors associated with assisted bathing can be modified. Bathing can be pleasant and without harm to older adults in the home, the hospital and long term care facility. [131] (p.43)

Finding 45: The focus of debate should be on the development of strategies that prevent the occurrence of disruptive behaviour rather than the management during the episode. [U]

Much of the literature regarding disruptive behaviour focuses on nursing actions during or after an episode. Effective prevention strategies have the likely advantage of reducing trauma and stress for both the caregiver and resident. [47] (p. 38)

Category 11: From task-oriented care to person-centred care

Finding 46: Focus more on the person rather than the task when bathing them [C]

Meeting individual preferences and emphasizing the well-being of the person being bathed is more important than providing care in an efficient manner. Observe the person's feelings and reactions. Always protect privacy and dignity. [136] (p.11)

Finding 47: Individualised person-centred approaches should be considered. [C]

Use a wider variety of person-centred techniques, such as covering the resident with towels as much as possible during the shower, distracting the resident with food and interesting objects, using favourite soaps and no-rinse products, modifying the shower spray and providing choices such as whether hair is washed first, last or not at all. [131] (p.43)

Finding 48: Person-centred approach based on individually-assessed needs is important rather than ritual of practice. [C]

Making such changes in the way hygiene is approached in the institutional setting can significantly move the system to more dignified, resident centres care, based on individually assessed needs rather than rituals of practice. [132] (p.678)

Finding 49: The patient-centred bath or shower should be done for patients with dementia. The needs of patients should be considered over task-oriented practice. [C]

Alternative for bathing patients with dementia are the patient-centred bath or shower and the towel bath.....The patient-centred bath or shower uses strategies centred on the patient's needs and comfort, not on the task of bathing. [130] (p.22)

Identified Evidence: Shift of discourse from rigid custodial task oriented approach with a management perspective to a therapeutic person-centred approach with a prevention focus. (Level III)

The visual presentation of textual meta-synthesis 3 is as follows:

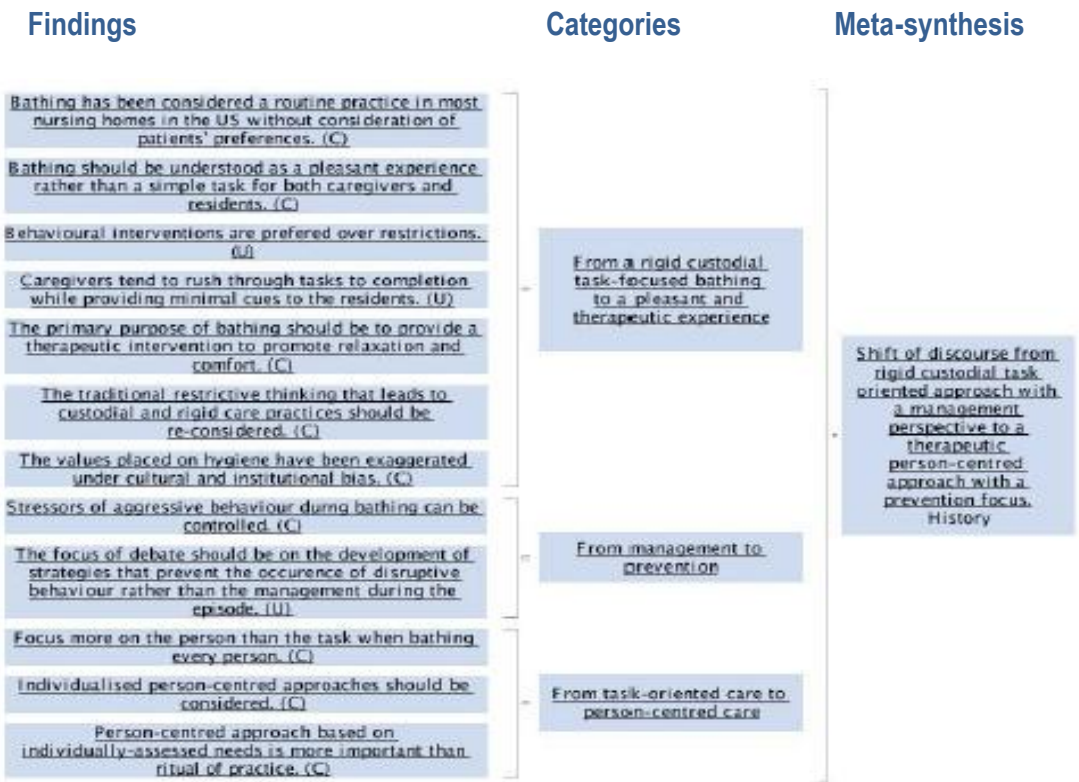


Table 12: Textual Meta-Synthesis 3

Textual Synthesis 4

Category 12: Bathing environment that can provide comfort and privacy can minimise agitated behaviours.

Finding 50: Adapting the physical environment is important to provide comfort. [C]

The temperature of the bathing room, the design and comfort of the shower chair, lighting, noise and sense of privacy all affect the person's experience of bathing. Pad the shower chair, turn the heat on or run the hot water, adapt the equipment so it fits the person, use beds that can be raised or lowered as needed, reduce noise levels and/or providing soothing music. [136] (p.14)

Finding 51: An unfamiliar and rushed environment can cause cognitively impaired people to feel lost. [C]

Dementia patients are prone to problems maintaining spatial orientation, especially in familiar environments. Being transported to the bathing area may cause the cognitively impaired person to become hopelessly lost, especially if being transported rapidly by a hurried staff member. [47] (p.36)

Finding 52: Careful assessment of environmental influences can lead to the development of effective interventions that improve outcomes. [U]

Careful assessment of environmental influences can lead to the development of interventions that will increase the likelihood of appropriate behaviour during specific events of care. This behavioural approach recognised that changes in cognition often result in altered perceptions of the environment, and may lead to undesirable behaviours that the resident views as appropriate. [47] (p.38)

Finding 53: Failure to secure privacy or territoriality can trigger disruptive behaviour. [U]

The public nature of shower rooms, which typically are centrally located in high traffic areas and are used by a large group of residents, intrudes on a resident's perception of privacy. This need is further violated if more than one caregiver is involved in providing the bath or shower, or if staff members enter and leave the bathroom freely during the care. [47] (p.36)

Finding 54: Noise can cause discomfort. [U]

Other aspects of the physical environment may contribute to discomfort. Noise levels in shower rooms can be high, due to the typical high echo, tiled walls and the loud voices necessary to talk over the sound of running water or equipment in use. [47] (p.36)

Finding 55: Simple modification of possible stimuli can improve bathing experience of people with dementia. [C]

Simple modifications that reduce tactile, visual, auditory and olfactory stimuli may improve the bathing experience. To reduce stimuli, turn down the lights and play soft music to provide a distraction from other noise in your facility. Other suggestions include warming the room before taking the patient into it, speaking calmly to and ensuring continuity of care so she can build a relationship with her caregiver. [130] (p.22)

Category 13: Feelings of fear due to impaired sensory and cognitive functions can trigger aggressive behaviours

Finding 56: Aggressive behaviours are often defensive actions residents perform when feeling threatened and anxious. [C]

Taking the resident's point of view, we realised that the behaviours we had previously labelled "aggressive" or "resistive" were often defensive actions residents took when feeling threatened and anxious. We found that by shifting the focus to getting to know the resident, communicating clearly and thinking creatively, behavioural symptoms lessened. [131] (p.44)

Finding 57: Impaired vision can trigger fear in bathroom. [U]

White walls, tiling, and an absence of windows to admit natural spectrum light all contribute to glare. This effect is exacerbated by common changes in the elder's vision, as well as the possible presence of cataracts. [47] (p.36)

Finding 58: Residents with dementia may misunderstand bathing as assault. [C]

Bathing involves the genitals. Some cognitively impaired residents may misinterpret bathing as a sexual assault.....Bathing may be perceived as a blatant physical or sexual assault that can lead to the internalisation of feelings of powerlessness, lack of control and ultimately, depression and despair. [129] (p.10)

Finding 59: Use of multiple sensory channels can help residents understand that she/he is being bathed, and therefore elicit cooperation with bathing tasks. [U]

Use of multiple sensory channels should elicit more functional responses by addressing memory through a variety of possible encoding keys. Thus suggested strategies include the use of tactile, olfactory and visual modalities…….warm terry both bathrobe and the same brand of scented dusting powder that he or she had used prior to admission provides memory cues via all three pathways. [47] (p.38)

Category 14: Joint pain caused by orthopaedic conditions can trigger aggressive behaviour during bathing but they are often overlooked.

Finding 60: Bathing can be a cause of pain and discomfort for people with dementia. [U]

Pain during bathing is also common in people with dementia. One study found that 88% of 17 subjects had a history of arthritis, osteoporosis, or joint pain. The movements required during bathing can cause pain, fear and discomfort. [131] (p.42)

Finding 61: Pain should be managed before bathing. [C]

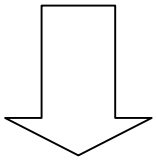
If your bathing seems to cause pain, perform a comprehensive pain assessment and manage her pain appropriately [130] (p.23)

Finding 62: Seeing residents experiencing pain and discomfort during bathing creates stress in staff and families. [C]

Caregivers tell us that they worry about ensuring hygiene in a safe and comfortable way. It's stressful to residents and professional and family caregivers to give care that results in pain, exhaustion, and agitated reactions such as hitting, biting, crying and screaming. [131] (p.43)

Finding 63: Staff and families tend to believe that pain and discomfort during bathing is inevitable. [U]

In our experience it's not uncommon to hear residents' screams and profanities from the shower or tub room and many staff and residents' families have told us that they believe such behaviours and other signs of discomfort during bathing are inevitable. [131] (p.42)



Identified Evidence: There should be a strategy to provide a safe, comfortable and private bathing environment with effective and appropriate management of orthopaedic pain. (Level III)

The visual presentation of textual meta-synthesis 4 is as follows:

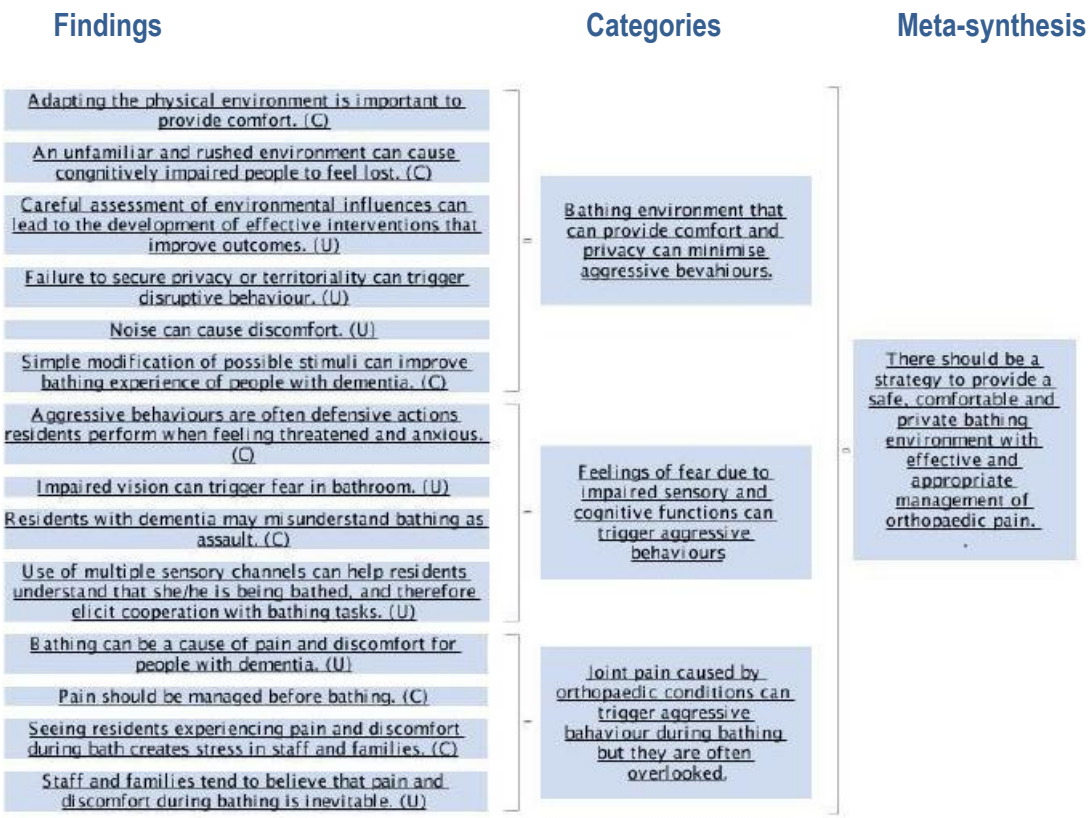


Table 13: Textual Meta-Synthesis 4

Summary of the chapter

Regarding the quantitative component of this review, there were five studies, with five examples of Level II evidence and four of Level III evidence. These examples encouraged the use of specific interventions to reduce agitated behaviours during assisted bathing for older adults with dementia in aged care settings.

With reference to the qualitative component, two meta-syntheses have been developed based on the findings from two studies based on residential aged care settings. One meta-synthesis highlights the inter-personal/dialogical nature of assisted bathing between residents with dementia and their caregivers. The other meta-synthesis highlights the need for a safe environment and individualised approach in minimising agitated behaviours during assisted bathing for older adults with dementia.

Finally, four textual meta-syntheses were developed from eight textual opinion papers. One meta-synthesis advocates the view that assisted bathing is an opportunity for positive and respectful interaction with a resident who has dementia. The second meta-synthesis encourages creative and flexible nursing and an organisational approach while the third meta-synthesis highlights a clear shift of discourse from a rigid custodial approach to a therapeutic person-centred assisted bathing strategy. The final textual meta-synthesis suggests providing a safe and comfortable bathing environment.

In the next chapter, these findings will be the subject of a detailed analysis. Furthermore the development of evidence-based aged care will be explored in more methodological detail.

Chapter V: Discussion – Beyond the Evidence and Practice Gap

In this chapter, the findings from the systematic review will are discussed in detail. In the first section, the findings from each methodological component (i.e. the quantitative, the qualitative and textual components) are individually discussed. The findings are then further elaborated on to demonstrate how different types of evidence can inform practice in reducing dementia-related agitated behaviours during assisted bathing. Finally, further discussion on the benefit of incorporating multiple types of evidence is presented as well as some imitations of the present review project.

What are the effective interventions?

To create "knowing what" type of knowledge that informs practice of assisted bathing for older adults with dementia, five quantitative studies were included in the review: two RCTs and three pre- and post-studies. Methodological quality of the quantitative studies varied from moderate to poor with an assessment score of three to five out of ten criteria. All identified evidence was conducted in the residential aged care settings and no evidence was identified addressing the home care settings.

The evidence statements derived from the included quantitative studies are listed in Table 1. Overall, the person-centred showering approach [11,124] proved to be effective in reducing both physically and verbally agitated behaviours of older adults with dementia over a bathing method without the person-centred approach. The person-centred approach [11] also improved caregivers' perception and experience of agitated behaviours exhibited by residents during assisted bathing/showering. Furthermore, another study [5] concluded that a psycho-educational program informed by the person-centred showering method was effective in reducing anxiety and irritability during bathing in older adults with dementia. It may also reduce agitation.

As for specific interventions, three interventions were found to be effective: the thermal bath, towel bath and playing residents their preferred music. The thermal bath / towel bath[83,124] is more effective in reducing agitated behaviours than the traditional tub bath method. The thermal bath method may be more effective in reducing male dementia-afflicted residents' agitated behaviours than female residents who have dementia.[83] Playing the preferred music of older adults was also found to be effective in reducing the frequency of aggressive behaviours during bathing.[123]

Person centred approach

- **The person-centred showering approach and towel bath method are effective in reducing overall agitation and aggression, and both physical and verbal agitation/aggression, and discomfort during bathing of older adults with dementia. (Level II)**
- **The person-centred approach is effective in reducing physical aggression, and verbal aggression among older adults with dementia. (Level III)**
- **Using psycho-educational intervention for caregivers is effective in reducing anxiety and irritability while bathing older adults with dementia. (Level III)**
- **Employing the person-centred approach improves caregivers' perception and experience of aggressive behaviours exhibited by older adults with dementia in assisting bathing/showering. (Level III)**

Thermal bath

- **The thermal bath is more effective in reducing agitated/aggressive behaviours than the traditional tub bath method in older adults with dementia. (Level II)**
- **Furthermore, the thermal bath method is more effective in reducing male dementia-afflicted residents' agitated/aggressive behaviours than female residents who have dementia. (Level II)**

Music

- **Playing the preferred music of older adults who have dementia can reduce the frequency of aggressive behaviours during bathing. (Level II)**

Table 14: List of identified 'knowing what' type evidence

The person-centred approach is effective

The present review has identified that person-centred showering is effective in improving residents' and caregivers' outcomes. Person-centred showering was developed with the influence of "person-centred care",[137] which focuses on the psychological and social aspects of older adults who have dementia, rather than physical and neurological aspects. In the person-centred care approach the importance of personhood is advocated in caring for people with dementia. Kitwood [137] defines personhood as "a status that is bestowed on one human being, by another in the context of relationship and social being." (p.8) Personhood can be maintained by having relationships with other people and therefore, effective inter-personal communication skills are considered important in promoting personhood in caring for older adults with dementia.[137]

The activity of person-centred showering/bathing[138] aims to provide a strategy that creates a comfortable environment for both caregivers and people with dementia in assisted bathing. In 2002, the benchmark book called *Bathing without a battle* was published and the authors came to similar conclusions as the authors of the studies included in this review reporting on the person-centred bathing; Barrick,[136] Rader,[131] Hoeffer,[139] and Sloane.[132] The metaphor of "a battle" is used to emphasise the chaotic and highly disruptive nature of assisting bathing and highlights the importance of a practical framework focusing on the unmet need of people with dementia. With US government support a study package with a CD-ROM and DVD has been developed and distributed to aged care facilities for caregivers to learn the technique based on the person-centred showering approach. [140] An evaluation report is currently under way.

However, the person-centred showering approach does not refer to any fixed intervention, and interventions provided within the framework of the person-centred showering are highly diverse in nature since each person with dementia has different needs and different life contexts. In order to provide individualised care, the person-centred showering approach encourages caregivers to work with the problem-solving methodology.[124,136] Therefore, evidence can only suggest that caregivers should be provided with educational training in the person-centred bathing approach. It is evident that further research is necessary to determine the effectiveness of single interventions recommended in person-centred showering. More detailed discussion on the contents of person-centred showering will be discussed later in this chapter.

Towel bath or thermal bath is effective

Alternative bathing/showering methods such as thermal bath [83] and towel bath[124] methods were found to be more effective than conventional tub bath or showering methods in reducing agitated behaviours by residents with dementia during assisted bathing. This type of towel bath method is also suggested in person-centred showering. With reference to the towel bath method, the residents are bathed in bed covered with two bath blankets during washing. Two bath towels are soaked with a no-rinse soap and two quarts of hot water to clean the body gently.[124] Thermal bath is also an in-bed bath method and a modified version of the towel bath method with no-rinse soap, 300ml of very hot water and 9 wash cloths. [83] Bathing can be a quite frightening and stressful event for people with dementia .The towel bath method should reduce physical (e.g., pain), psychological (e.g., feeling of loss of control and fear) and environmental-unpleasant stimuli (e.g., noise, unfamiliar multiple caregivers, cold bathroom, hot water) for people with dementia and should be employed particularly for people at a high risk of exhibiting agitated behaviours.

As Dunne et al.[83] have stated, only a few studies are available to determine the effective actual bathing method in the aged care context. No other evidence met the inclusion criteria of the present review concerning various bathing methods. Obviously, further studies are necessary to make a definite conclusion on the effectiveness of bathing using towel bath and thermal bath, which appear to be more beneficial than the conventional tub bath or showering methods.

Music playing is effective

The present review identified evidence that supports the use of residents' preferred music during assisted bathing. This is consistent with other studies reporting the beneficial effect of music in controlling dementia-related behavioural symptoms in general aged care settings. Various studies have reported that music therapy by a qualified music therapist has been shown to be effective in controlling dementia-related behaviours.[141-145] Other studies have also documented the use of music by non-qualified music therapists such as nursing staff [146,147] or caregivers.[148, 149] However, evidence from the present study was based on a single RCT. The majority of existing studies discussed in the literature review chapter do not address the context of assisted bathing in aged care settings. Further studies will be required specifically that examine the impact of music in managing agitated behaviours in older adults with dementia in assisted bathing.

The identified 'knowing what' type of evidence includes the person-centred approach, playing preferred music and bed bath method with towel, hot water and no-rinse soap. They can guide caregivers and clinicians in terms of a training framework that caregivers should receive (the person-centred showering), choice of bathing method (bed bath), and one specific intervention to provide comfortable environment (music). However, in the context of real practice settings, such evidence statements appear rather fragmented and not comprehensive enough to support caregivers in minimising dementia-related agitated behaviours during assisted bathing.

Evidence on how to improve bathing care

The evidence from the qualitative and textual components were also analysed to present 'knowing how' type evidence that can complement the 'knowing what' type of evidence as discussed above. Furthermore, judging by the qualitative and textual components of this review, six evidence statements have been developed that can inform caregivers and clinicians how assisted bathing should be practiced in real aged care settings.

Two studies were included in the qualitative component of the review. Methodological quality of the included studies was poor to moderate. Both studies examined the residential aged care settings and no evidence was identified concerning the home care settings. Two evidence statements were derived from synthesised findings (Table 2). Since only two qualitative studies of moderate to poor quality were identified, textual opinion papers were considered as alternative sources of 'knowing how' type of evidence.

The first qualitative evidence illustrates assisted bathing as an experience that is co-constructed by both caregivers and a resident who has dementia. Residents seek to obtain control in a situation where they are actually powerless while caregivers/caregiver work with the resident using relevant assessment and communication skills to meet their need for control, consequently, to minimise agitated behaviours. The core essence here is that the individual caregiver's experience is expressed as a dialogical process, not as one-way communication from caregivers to residents.

The second qualitative evidence refers to the caregivers' perceived ideal environmental factors in assisting bathing. The evidence statement highlights the importance of respecting a resident's dignity while fear of injuries to the residents and themselves was a constant concern for nursing staff. The residents' dignity can be interpreted as various meanings but in the context of assisted bathing, it is strongly related to providing a shower room environment where their privacy is adequately protected without harming their dignity as persons.

- **There should be a strategy to facilitate the sense of control for residents and caregivers should have relevant assessment and communication skills. (Level I)**
- **There should be a strategy to promote safe assisted bathing while dignity of the patient is respected. (Level I)**

Table 15 Evidence statements derived from qualitative studies

Eight textual opinion papers were included in the textual component of the review. Methodological quality of the included papers was high based on the standardised quality assessment criteria. All papers addressed residential aged care settings and no evidence was identified concerning the home settings. Four evidence statements were derived from the synthesised findings (Table 3).

The first evidence statement is directly related to the first qualitative meta-synthesis concerning the dialogical nature of the bathing process between caregivers and residents. The second evidence statement advocates a flexible organisational culture and care delivery system that makes it possible to meet the unique needs of individual people suffering from dementia. The third evidence statement highlights the person-centred approach as the current-dominant discourse concerning assisted bathing in contrast to the custodial approach. The fourth evidence statement is related to the needs for safety and comfort of older adults with dementia in reducing agitated behaviours during assisted bathing.

These evidence statements will be further discussed in detail in the following section.

Assisted bathing should be considered an opportunity for positive and respectful human interaction with a resident in order to minimise aggressive behaviour. (Level III)

A creative and flexible care plan and delivery with organisational support should be in place to provide effective assistance in minimising aggressive behaviours during bathing. (Level III)

Shift of discourse from rigid custodial task oriented approach with a management perspective to a therapeutic person-centred approach with a prevention focus. (Level III)

There should be a strategy to provide a safe, comfortable and private bathing environment with effective and appropriate management of orthopaedic pain. (Level III)

Table 16 Evidence statements derived from textual opinion papers

Toward evidence-based bathing care

In this section, all identified evidence will be integrated and analysed together to develop an evidence base that guides the practice of assisted bathing for older adults with dementia in the context of real life settings. To demonstrate how different types of evidence contribute to the overall picture of improved strategies for assisting bathing, a statement derived from identified evidence will be highlighted with QAN (quantitative evidence), QAL (qualitative evidence) or TEXT (textual evidence).

The person-centred approach is clearly the preferred (if not dominant) discourse not only in the general aged care field[150,151] but also in the practice of assisted bathing (TEXT). This embraces the psychosocial problem-solving approach[136] to delivering individualised care.[136] There is a sharp contrast between the person-centred approach and the historical task-oriented custodial care when it comes to assisted bathing. The custodial approach has been criticised for promoting medicalised discourse of dementia, because it views people with dementia as "subject to treatment"[137] rather than as individual persons. In such an assumption, assisted bathing may be considered as a part of the treatment regimen that caregivers MUST complete. This only allows limited flexibility in terms of care provision regardless of care receivers' preference or conflicting needs.

The quantitative evidence has revealed that the person-centred approach can lessen agitated behaviours during bathing and can improve caregivers' attitudes to assisted bathing (QAN). The quantitative, qualitative and textual evidence repeatedly found that nurses and caregivers contend that assisted bathing should be practised based on the person-centred approach (QAL and TEXT) which emphasises the unmet needs of unique individual people with dementia.

Choice of bathing method

The evidence suggests that the bed bath method (using hot water, towels and non-rinse soap) should be considered in the case of older adults who are at a high risk of demonstrating dementia-related agitated behaviours (QAN). To utilise this evidence in practice, 'knowing how' type of evidence should be involved and this means using good assessment and communication skills to identify the need and appropriateness of the bed bath method for each case. If high risk of agitated behaviour and person's preference[124] for bed bath method are identified (QAL and TEXT), caregivers should consider bed bathing rather than shower/tub bathing.

In addition, as recommended in the person-centred showering approach, no-rinse soap/solution appears to be the better option for older adults than conventional soap in terms of preventing skin tears and reducing the healthcare costs associated with skin tears.[152] Furthermore, soap may be considered as "more effective" in cleansing effect than no-rinse soap by many nurses and caregivers. However, the no-rinse solution was shown to be equally effective in removing residual bacteria on the skin.[153]

Other alternative cleansing products have been reported which include disposable paper towel soaked with no-rinse soap.[154,155,156,157,158] The disposable cleansing product is receiving more recognition and it has the extra benefit of infection control.[159] In the intensive care unit setting, traditional basin bed bath method was compared to a pre-packaged disposable bed bath.[155] The disposable bed bath material was reported to be more cost effective because it involves a shorter procedure time and requires less additional products such as skin cream and clean towel. The nurses' satisfaction rate was also better in the experimental group with the disposable material. Considering evidence from the review and related literature, use of such

products should be examined in aged care settings in terms of cost, and results for residents and caregivers.

Assessment

In order to provide responsive care for people with dementia, the stated communication skills should focus not only on interpersonal skills but also sufficient assessment skills of individual need, dementia-related symptoms (QAN) –the person-centred approach) and each resident's response should be considered for the next course of action (QAL and TEXT). This is consistent with the literature review regarding the assessment of general management of agitated behaviours in dementia (see Chapter II).

Assessment of triggers for agitated behaviours represents an important part in maintaining effective communication in assisting bathing. In the literature review chapter, factors and triggers were identified in regards to agitated behaviours in dementia. Factors related to permanent and fixed nature include: male gender[1], lifelong history of being less agreeable and pre-morbid neuroticism.[67,72] The temporal factors include: worsened mental health such as clinical depression[66] or low mental status score (severe dementia)[12,36,69], reduced level of activities in daily living (ADLs),[89] low level of language expression related to severe dementia,[70] insufficient night time sleep[12], and untreated pain.[160] The assessment should also include external/environmental factors.[1] Ideal bath-room environment will be discussed later in this section. Furthermore, shortage of nursing staff [1] has also been reported as a risk factor for agitated behaviours. The validated assessment tool should be used to determine the severity and frequency of agitated behaviours.[48,72-74]

As for the assessment strategy specific to assisted bathing, Barrick et al.[128] have presented a behaviour tracking log on behavioural symptoms in bathing such as when, what, where, who with, what happened before and after, and what makes it better of worse in relation to agitated behaviours during bathing. No other assessment tools or specific strategies for the assisted bathing setting were identified in the review. It is clear that further high quality studies are needed for developing bathing specific tools that can support assessment in the context of assisted bathing for people with dementia.

Communication skills

Importance of effective communication skill was highlighted in the evidence concerning assisting bathing for older adults with dementia (QAL and TEXT). This was consistent with the background literature review addressing the general (not specific to assisted bathing) dementia care. Effective communication with people with dementia is not simply a matter of "being nice."[128] As addressed in the meta-syntheses (QAL and TEXT), communication should be dialogical, not one way from caregivers to people with dementia or the other way around. The finding from the general literature review chapter has suggested that invalidation of a resident's feelings or needs was clearly associated with increased occurrence of agitated behaviours.[65]

The person-centred showering encourages an engaged communication style (QAN). In a more practice sense, the textual component has reported on how engaged communication can be practised. This may include strategies such as paying attention to the person's need's for comfort and personal preferences, encouraging the person's participation, and providing humour and compliments, apologising repeatedly if necessary[136,9], and repeatedly providing information on what is going to happen next before and during the bath.[9] Using the distraction technique is also suggested such as bringing up a pleasant topic, providing an object for the person to hold, providing candy or other food in order to alter their attention.[9, 128] The person with dementia should be allowed to take time[128] in responding to caregivers. In case the person's ability to understand appears limited, language may need to be adjusted to meet the ability of the person to facilitate communication while paying attention to non-verbal cues.[128]

Privacy and safety

The need to protect the privacy of older adults with dementia has been addressed in both qualitative and textual components (QAL and TEXT). Protected privacy is also related to enhancing the subjective feelings of personhood and self-dignity for older adults who have dementia (TEXT).

Common sense strategies (or easily taken-for-granted strategies) should not be overlooked such as closing the bathroom door, not undressing a person with dementia until it is necessary, and covering the person with a towel.[9] These actions might appear trivial but it might not be practised in the aged care settings when multiple caregivers are involved in the shower room and working in a hurried manner. Physical safety of the person with dementia and possible

harm to themselves were concerns raised by caregivers as a result of physically aggressive behaviours during bathing.[63]

Pain management

Appropriate management of pain, particularly orthopaedic pain such as knee joint pain, is necessary to prevent the occurrence of agitated behaviours during assisted bathing for older adults with dementia (TEXT). This may appear to be another form of common-sense evidence, but it is possibly a neglected area[161] of practice. Both the quantitative or the qualitative components of the present review have failed to address the importance and impact of pain management in reducing agitated behaviours while the textual component has successfully shed light on the significance of pain management.

Commonly reported barriers for effective pain management can be identified at both the organisational and staff levels. Organisational barriers include shortage of staff, high staff turnover, limited access to medical consultation, and variable involvement of facility leadership while staff-level barriers are related to inappropriate beliefs and attitudes about pain in aged care, and inadequate knowledge of pain management.[162]

Furthermore, equipment and facilities should be modified to reduce the risk of pain in the bedroom and shower room. Simple differences in equipment such as padded shower chair should reduce pain and increase comfort.[128] To reduce pain when transferring between the shower room and bedroom, the bed that can be raised or lowered should be in place. This is also important for the occupational safety of staff.[128]

Environmental factors

Providing a comfortable environment is another crucial factor to minimise the agitated behaviours of older adults with dementia during bathing (TEXT).[124] The quantitative evidence suggests that playing the preferred music of older adults with dementia can be considered during assisted bathing (QAN). This result is consistent with what the general literature review argued in Chapter II. This is particularly useful evidence since it does not require a qualified music therapist and is simple to for caregivers and nurses to do. This intervention also requires knowing how evidence related to the assessment of the preferred music from resident (if it is not possible, obtain information from family or significant others), preferred volume. music device[128] and organisational policy.

To provide a comfortable environment (TEXT), equipment and facilities should be suited to the needs of each person with dementia. For instance, the height of a shower chair should be modifiable depending on the height of people to be showered. Being unable to reach the bathroom floor with one's feet may cause pain, feeling of insecurity and danger.[128] While playing preferred music should be encouraged, unnecessary noise should be minimised since it may be a trigger agitated behaviours. The shower room should be warmed beforehand with a heater so that the room has time to warm up.[128]

The other sensory interventions from Chapter II could be further examined in the context of assisted bathing such as aromatherapy[82,90] (e.g., introducing preferred smell of soap and shampoo) and massage.[93-95]

Organisational environment

In order to provide individualised care to meet the need of people with dementia, organisational policy should be flexible and creative when providing assisted bathing (TEXT). Without such organisational support, dementia-related agitated behaviours are not likely to be reduced since individualised care cannot be adequately provided without organisational support.

Flexibility in bathing schedules should be possible. In a task-oriented organisation, caregivers attempt to bath at the scheduled time every day regardless of the condition of older adults with dementia. Moreover, caregivers may feel incompetent if they fail to complete their task on time, particularly if there is organisational and peer pressure. With the person-centred approach, if a person is distressed or likely to exhibit agitated behaviours, allowing the caregiver to reapproach later when the person appears to cooperate better should be encouraged.[128]

Flexible staffing is another crucial factor that should be in place in order to reduce dementia-related agitated behaviours. There should be a consistent allocation of caregivers for each person with dementia so that the affected person can be familiar with the assigned caregiver. Caregivers can obtain sufficient information on the person regarding the individual risk factors for agitated behaviours and be able to understand the most effective approach in assisting bathing.[128]

The flexible bathing method should be possible. For instance, bed bath with towel, hot water and no-rinse soap can reduce agitated behaviour much better than a tub bath or shower.[128,163] Caregivers should be allowed to stop or shorten the bath if a person with dementia shows signs of distress.[128] Family involvement should be also encouraged if necessary[128] but it should be kept to a minimum in custodial care contexts.

Methodological issues

The four evidence statements from the textual component have successfully demonstrated the power of non-research textual evidence in providing context specific guidance in minimising agitated behaviours during assisting bathing. This also suggests that the textual evidence should be employed as an alternative source of 'knowing how' type of evidence together with qualitative evidence.

The textual component has identified important aspects of practice in real life settings that the qualitative component failed to articulate. The key concepts the qualitative component presented include (QAL: qualitative evidence) are as follows:

QAL 1. Care that can facilitate the sense of control for people with dementia

QAL 2. Assessment and communication skills of caregivers

QAL 3. Safe shower room environment

QAL 4. Dignity and privacy of people with dementia

Similarly, the textual component has also identified the following concepts to inform practice: (TEXT: textual evidence)

TEXT 1. Care as an opportunity for positive and respectful human interaction (QAL 1 & 2)

TEXT 2. Flexible care plan

TEXT 3. Organisational support

TEXT 4. Introduction of the person-centred approach as opposed to task-oriented care

TEXT 5. Safe shower room environment (QAL 3)

TEXT 6. Comfortable bathing experience

TEXT 7. Privacy (QAL 4)

TEXT 8. Pain management

TEXT five and seven have successfully identified the same evidence as QAL five and seven respectively. TEXT one advocates that the positive respect for human dignity is directly related to QAL one and two, thus highlighting the dimensions of dialogical and responsive care.

It is clear that the textual component has not only identified the concepts relatively close to the qualitative component, but also identified some concepts that the qualitative component could not articulate. Only the textual component identified the concepts of the flexible care plan, organisational support, the need for comfortable bathing experience and pain management as well as a discourse shift to the person-centred approach.

The nature of these findings can be seen as highly specific to the context of assisting bathing older adults with dementia. It may appear to be so commonsense that it does not need to be presented in formal clinical recommendations. However, such evidence is a fundamental part of the strategies for minimising agitated behaviours during assisting bathing. Without a comprehensive approach including all types of knowledge, even the evidence concerning the effectiveness of a specific intervention such as playing music, would not be feasible in real practice settings.

As demonstrated in this study, textual evidence can contribute to the identification of 'knowing how' type of evidence where there is a lack of qualitative evidence. EBHC has been criticised for failing to meet the needs of clinicians in the reality of everyday practice. In order to fill the evidence and practice gap, healthcare practice should be informed by multiple types of evidence, namely, quantitative evidence, qualitative evidence and textual evidence. This is more so in a highly practical area such as assisting bathing for older adults with dementia. Inclusion of textual evidence together with qualitative evidence can facilitate accumulation of "knowing how" type of evidence that forms a fundamental part of care delivery in real health care practice.

Further studies

Lack of high quality quantitative and qualitative research articles have been identified in the project. Further controlled trials are required to determine the effectiveness of various bathing methods, alternative bathing products and any other interventions to improve the experiences of both people with dementia and caregivers who bathe them. Various studies have reported on the triggers and factors related to agitated behaviours in older adults with dementia. However, there should be more high quality observational studies that specifically focus on such risk factors in the specific context of assisted bathing. It is clear that more systematic reviews are needed to investigate various cleansing products on the integrity of skin and skin hygiene.

As for qualitative evidence, there should be high quality interpretive studies that can document and evaluate the tacit knowledge and experiences of caregivers. Furthermore, more researchers and clinicians should work on the issues surrounding assisted bathing of older adults with dementia.

Limitations of the review

The review has successfully articulated multi-dimensional evidence to support the practice of assisted bathing of older adults suffering from dementia. However, there is a lack of high quality quantitative and qualitative studies. To overcome this, textual evidence was incorporated in this review in order to provide the best existing evidence to support caregivers. This is despite the fact that textual evidence cannot be considered as a high level of research-based evidence. Therefore, evidence from textual synthesis has to be deemed lower level evidence than that which has been research-based.

Most papers addressed residential aged care settings and there has been little information available concerning home care settings. Most identified authors have been involved in the person-centred bathing project or influenced by the idea of the project, which can be a source of publication bias.

Summary of the chapter

Based on the results generated by this review, further discussion was provided concerning the most effective method that minimised agitated behaviours and how assistance should be provided in order to improve the experiences of assisted bathing of older adults with dementia. Finally, a methodological discussion concerning the different types of evidence was provided to fill the evidence and research gap. In the final chapter, recommendations for caregivers will be presented with regards to the best approach to minimise agitated behaviours during assisted bathing. The Best Practice Information Sheet based on the results of this project will be distributed to aged care settings in Australia and overseas.

Chapter VI Conclusion

This chapter concludes the thesis and it includes the implications for practice and implications for research. An evidence-based Best Practice Information Sheet will be presented for distribution to aged care providers and universities that are linked to the domestic and international network of the Joanna Briggs Institute.

Implications for practice

From the evidence that has been identified, the following recommendations for practice are developed. The following evidence from the quantitative component / "Knowing what" type evidence should be considered to minimise agitated behaviours during assisted bathing of older adults with dementia:

- Caregivers should receive an educational/training program on the person-centred showering approach to reduce agitated behaviours of older adults with dementia. (Level II)

- Caregivers should receive an educational/training program on the person-centred showering approach in improving their perception and experience of agitated behaviours exhibited by older adults with dementia when delivering assisted bathing/showering. (Level III)

- The towel bath method should be preferred over conventional tub bath if high risk of agitated behaviours is anticipated when undertaking assisted bathing of older adults with dementia. (Level II)

- Clinicians should be aware that the thermal bath method is more effective in reducing male dementia-afflicted residents' agitated/aggressive behaviours than female residents who have dementia. (Level II)

- Playing the preferred music of older adults who have dementia should be promoted to reduce the frequency of aggressive behaviours during bathing. (Level II)

The following recommendations based on the qualitative and quantitative components / "knowing how" type evidence should be also considered:

- There should be a strategy to facilitate residents' sense of personal control. (Level I)

- Caregivers should have relevant assessment and communication skills. (Level I)

- There should be a strategy to promote safe assisted bathing while the dignity of the patient is respected at the same time. (Level I)

- Assisted bathing should be considered an opportunity for positive and respectful human interaction with a resident in order to minimise aggressive behaviour. (Level III)

- A creative and flexible care plan and delivery with organisational support should be in place in order to provide effective assistance in minimising aggressive behaviours during bathing. (Level III)

- Strategies for reducing agitated behaviours during assisted bathing of older adults with dementia should be based on the currently accepted discourse with a management perspective to a therapeutic person-centred approach, where there is a prevention focus rather than relying on a historical discourse derived from a rigid custodial task-oriented approach. (Level III)

- There should be a strategy to provide a safe, comfortable and private bathing environment. (Level III)

- Effective and appropriate management of orthopaedic pain should in place. (Level III)

Implications for further research

In order to strengthen the evidence-based of assisted bathing for older adults with dementia, the following areas should be researched:

- There should be more quantitative studies examining the effectiveness of specific interventions considered in the person-centred showering approach since only the towel bath method and playing residents' preferred music during bathing were identified as effective as single interventions within the umbrella term of person-centred showering.
- There should be a systematic review of observational studies to examine triggers and causal factors of agitated behaviours in assisted bathing settings.
- There should be more qualitative studies that explore the experiences of caregivers and older adults with dementia in assisted bathing.
- There should be more qualitative studies that articulate the knowledge of caregivers and clinicians related to assisted bathing for older adults with dementia.
- There should be more research conducted to develop a solid evidence base for hands-on daily care area, particularly in the aged care context.
- There should be more systematic reviews of the hands-on care area with multiple types of evidence to inform caregivers.
- There should be an ongoing debate around the use of textual evidence in highly complex and practical areas of practice, particularly in aged care.

The Best Practice Information Sheet (BPIS) (Appendix has been developed as the final process of this thesis. It will be published on the JBI website for aged care providers and universities worldwide to support caregivers and their supervisors in improving assisted bathing of people with dementia. By distributing the BPIS, it is also envisaged that this will facilitate awareness among aged care providers and related stakeholders of the importance of EBHC in the daily hands-on care activity of assisting bathing.

Best Practice Information Sheet

Joanna Briggs Institute Best Practice Information Sheet

Evidence based information sheets for health professionals
ISSN 1329-1874

Title: Strategies to reduce agitated behaviours of older adults with dementia during assisted showering / bathing

Recommendations

Please note that these are to be based on the JBI Grades of recommendation which may be found at: http://www.joannabriggs.edu.au/pubs/approach.php#B

- A strategy to be in place that facilitates residents' sense of control during assisted bathing (Grade A).
- Caregivers should receive education on the relevant assessment and communication skills based on the person-centred showering approach (Grade 1).
- There should be a strategy to promote safe assisted bathing while the patient's dignity is respected. (Grade A)
- Caregivers should receive an education program on the person-centred showering approach to reduce agitated behaviours of older adults with dementia. (Grade B)
- Caregivers should receive an education program on the person-centred showering approach to improve their perception and experience of agitated behaviours exhibited by older adults with dementia when assisting them with bathing/showering. (Grade B)
- The towel bath method should be considered over conventional tub bath if a high risk of agitated behaviours is anticipated when assisting the bathing of older adults with dementia. (Grade B)
- Clinicians should be aware that the thermal bath method is more effective in reducing male dementia-afflicted residents' agitated/aggressive behaviours than female residents who have dementia. (Grade B)
- Playing the preferred music of older adults who have dementia should be promoted to reduce the frequency of aggressive behaviours during bathing. (Grade B)
- Assisted bathing represents an opportunity for positive and respectful human interaction with a resident in order to minimise aggressive behaviour. (Grade B)
- A creative and flexible care plan and implemented with organisational support should be in place in order to provide effective assistance in minimising aggressive behaviours during bathing. (Grade B)
- The focus of care should be based on a therapeutic person-centred approach with a prevention focus rather than based on a rigid custodial task-oriented approach. (Grade B)
- There should be a strategy to provide a safe, comfortable and private bathing environment. (Grade B)
- Effective and appropriate management of orthopaedic pain should be in place. (Level B)

Grades of Recommendation [1]

Grade of Recommendation	Feasibility	Appropriateness	Meaningfulness	Effectiveness
A	Strong support that merits application	Strong support that merits application	Strong support that merits application	Strong support that merits application
B	Moderate support that warrants consideration of application	Moderate support that warrants consideration of application	Moderate support that warrants consideration of application	Moderate support that warrants consideration of application
C	Not supported	Not supported	Not supported	Not supported

Information Source

This Best Practice information sheet has been derived from a systematic review titled "Strategies to reduce agitated behaviours during assisted bathing for older adults with dementia: Systematic review" [2] The systematic review report is available from the Joanna Briggs Institute at http://www.joannabriggs.edu.au.

Background

Of all personal care activities, assisted bathing is one of the daily care activities strongly linked to agitated behaviours of people with dementia. Incidence of care-related agitated behaviours ranged from 46.8% [3] to 89% in residential aged care settings.[4,5] Furthermore, dementia-related agitated behaviours during assisted bathing can be a significant source of burden for caregivers who provide assistance to older people with dementia.

Definitions

For the purposes of this information sheet the following definitions were used:

Agitated behaviours is used as an umbrella term to encompass diverse disruptive behaviours related to dementia including verbally aggressive behaviours, non-verbally aggressive behaviours, non-verbally agitated behaviours and verbally agitated behaviours.[6-8]

Objectives

The purpose of this Best Practice Information Sheet is to summarise the best available evidence concerning approaches to minimising agitated behaviours when assisting the bathing of older adults with dementia.

Types of Intervention / Phenomena of interest

Interventions that reduce dementia-related agitated behaviours during assisted bathing.

The phenomena of interest included: firstly, the experiences of caregivers and nurses in assisting the bathing of older adults with dementia; and secondly, the experiences of caregivers in assisting the bathing of older adults with dementia.

Quality of the research

The included research studies had a methodological quality ranging from poor to moderate while textual papers had relatively high assessment scores.

Quantitative evidence

Five studies met the inclusion criteria of the quantitative component including two RCTs (randomised controlled trials), one quasi-experimental study with a cross-over design and two within group pre- and post-studies.

Person-centred showering vs. tub bath plus person-centred bathing training vs. shower (control)

A cross-over RCT examined the effectiveness of two non-pharmacological techniques in reducing agitation, aggression, and discomfort in aged care residents with dementia. Specifically, they analysed nine skilled nursing facilities in the USA. Seventy-three residents with previous histories of agitated behaviour during bathing and 37 nursing assistants who assisted bathing participated in the study. Intervention involved person-centred showering training that focused on the needs-based approach. With the person-centred showering method, behavioural symptoms such as aggressive behaviours were seen as expressing unmet needs. A goal of this approach was to provide comfort to and respect the preferences of residents with particular emphasis on improved interpersonal communication. The following strategies were promoted as having practical efficacy, such as providing choices for residents, covering residents with towels to maintain warmth, distract their attention or using alternative approaches, for example no-rinse soap and shower spray.

Another intervention was the towel bath. The towel bath was an in–bed method where the caregiver used two bath blankets, two bath towels and no-rinse soap, and two quarters of warm water, while the resident was kept covered at all times. The body was cleansed using a gentle massage technique. Training in person-centred showering was included as a component of the towel bath method.

These two interventions were compared with the control group who received usual care. Overall, encouraging results were reported in that the person-centred showering and the towel bath methods reduced agitation, aggression, and discomfort while performing assisted bathing for older adults with dementia.

The two other studies also reported positive outcomes when utilising the person-centred showering approach in reducing aggressive behaviours of people with dementia during bathing/showering.

Thermal bath vs. Conventional tub bath in reducing agitated behaviours

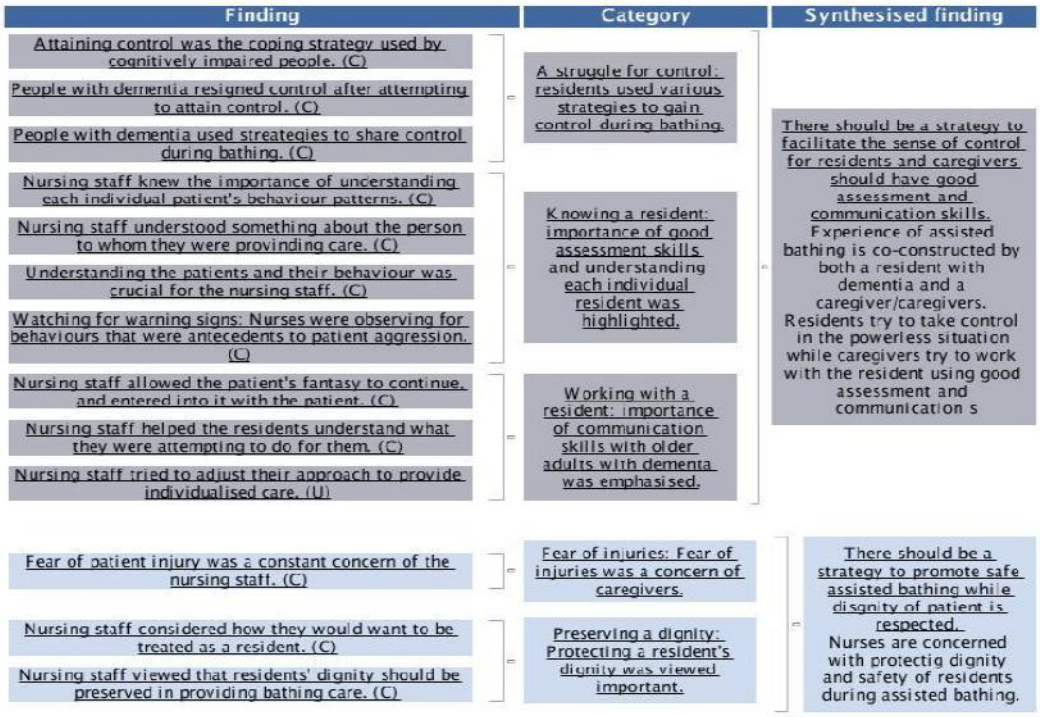
Dunn et al. (2002) compared a conventional tub bath and thermal bath method in assessing the frequency of agitated behaviours. The thermal bath was a modified version of the towel bath method and required a capful of Sproam™, a non-skin cleanser, 300ml of very hot water and 9 wash cloths. The soaked warm wash cloths were place on each body part and rinsing was required. The study demonstrated that the thermal bath is superior in reducing aged residents' agitated behaviour compared to conventional tub bath. Moreover, the thermal bath appears to be more effective in males than females in reducing agitated behaviours during assisted bathing.

Use of music in reducing aggressive behaviours

A RCT examined the effectiveness of recorded, preferred music in reducing the occurrence of aggressive behaviours among people with Alzheimer's-type dementia during bathing. The study highlighted the beneficial effects of using individual residents' preferred music to reduce their aggressive behaviours during assisted bathing.

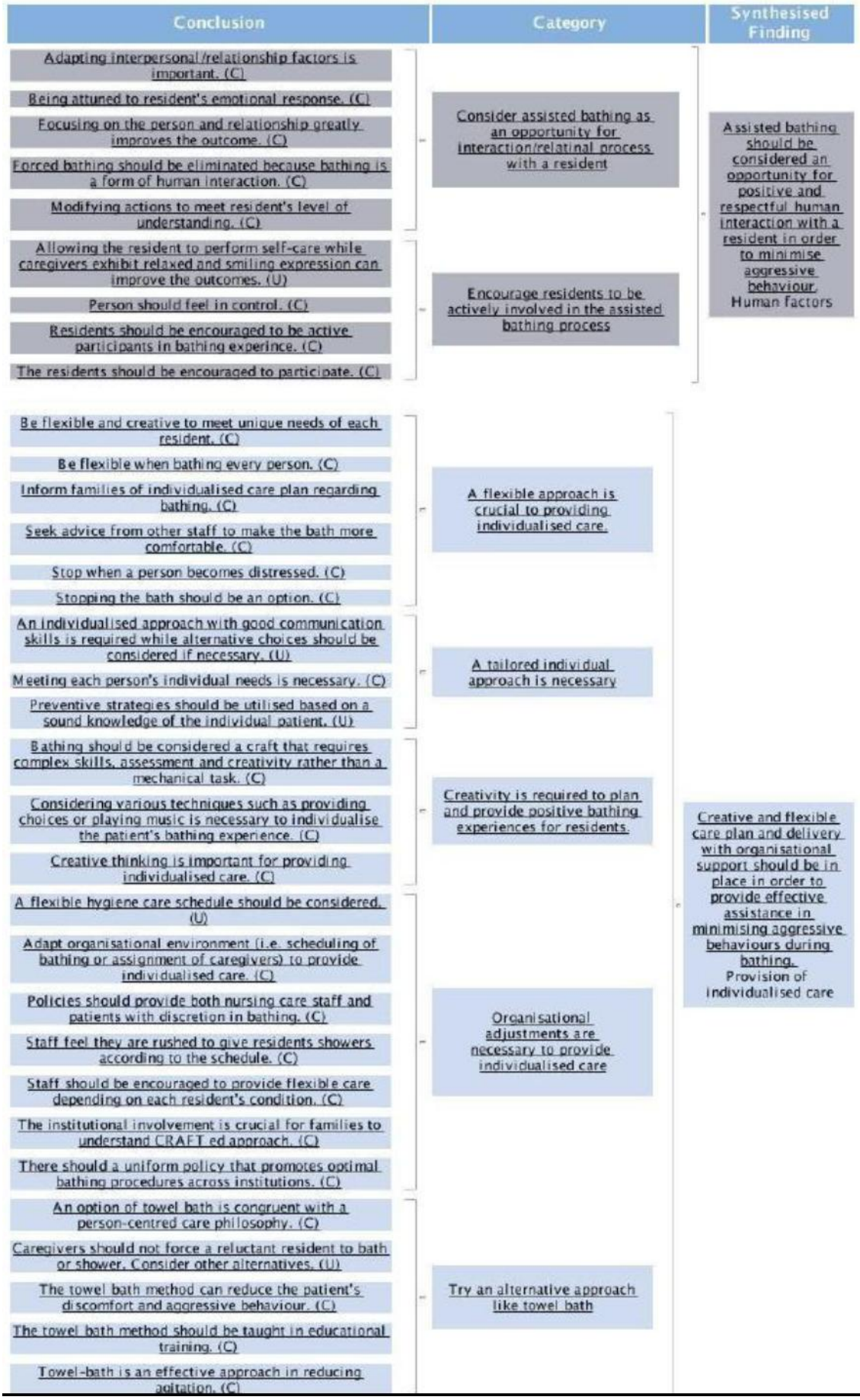
Qualitative evidence

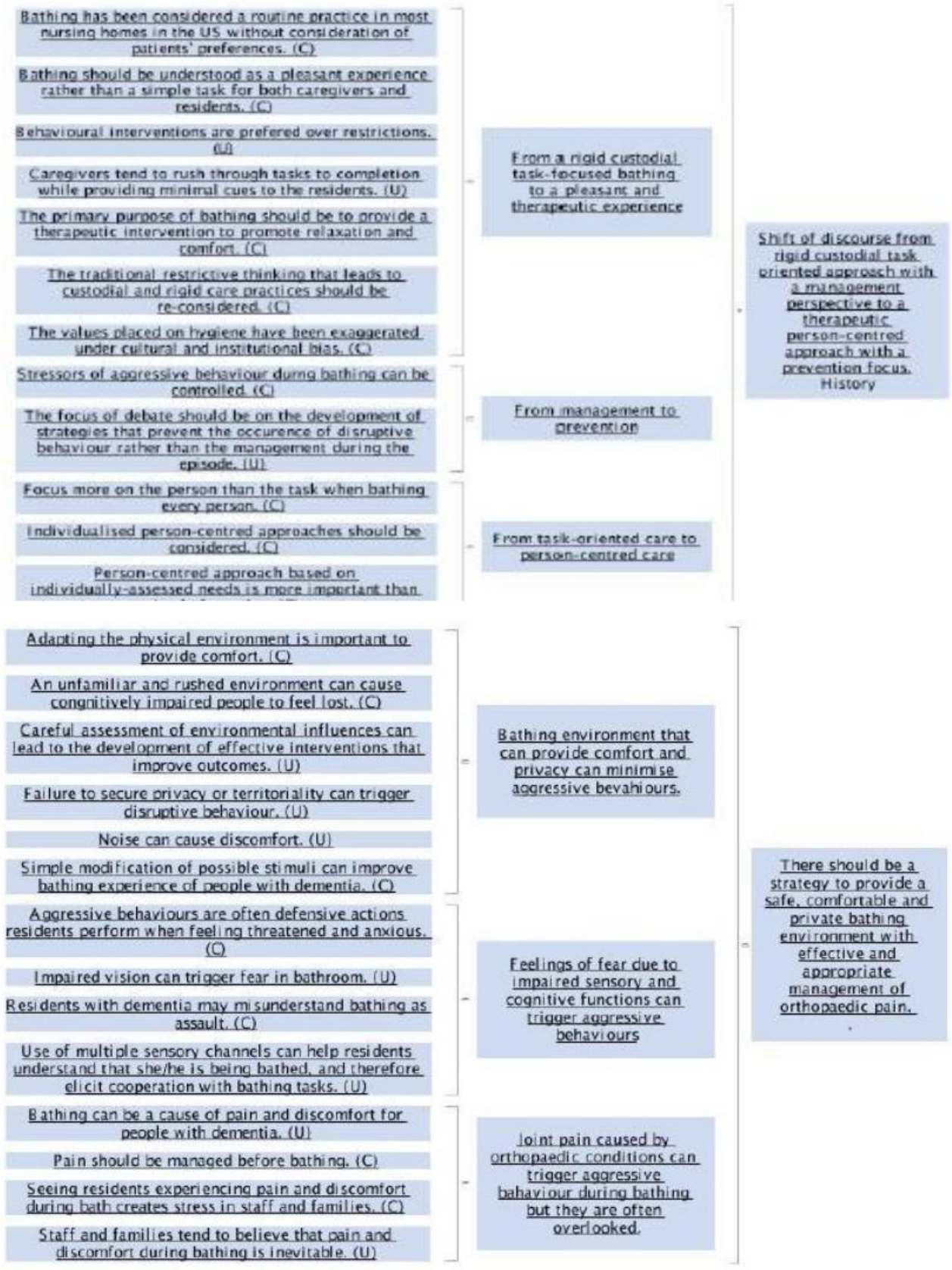
Two studies met the inclusion criteria for the qualitative component and these consisted of one study employing grounded theory, and one qualitative descriptive study. The phenomena being investigated included behaviours of clients with cognitive impairment during bath time.



Textual evidence

Eight non-research articles were included in the textual meta-synthesis.


Conclusion
Category
Synthesised Finding
Adapting interpersonal/relationship factors is important. (C)
Being attuned to resident's emotional response. (C)
Focusing on the person and relationship greatly improves the outcome. (C)
Forced bathing should be eliminated because bathing is a form of human interaction. (C)
Modifying actions to meet resident's level of understanding. (C)
Consider assisted bathing as an opportunity for interaction/relatinal process with a resident
Allowing the resident to perform self-care while caregivers exhibit relaxed and smiling expression can improve the outcomes. (U)
Person should feel in control. (C)
Residents should be encouraged to be active participants in bathing experince. (C)
The residents should be encouraged to participate. (C)
Encourage residents to be actively involved in the assisted bathing process
Assisted bathing should be considered an opportunity for positive and respectful human interaction with a resident in order to minimise aggressive behaviour. Human factors
Be flexible and creative to meet unique needs of each resident. (C)
Be flexible when bathing every person. (C)
Inform families of individualised care plan regarding bathing. (C)
Seek advice from other staff to make the bath more comfortable. (C)
Stop when a person becomes distressed. (C)
Stopping the bath should be an option. (C)
A flexible approach is crucial to providing individualised care.
An individualised approach with good communication skills is required while alternative choices should be considered if necessary. (U)
Meeting each person's individual needs is necessary. (C)
Preventive strategies should be utilised based on a sound knowledge of the individual patient. (U)
A tailored individual approach is necessary
Bathing should be considered a craft that requires complex skills, assessment and creativity rather than a mechanical task. (C)
Considering various techniques such as providing choices or playing music is necessary to individualise the patient's bathing experience. (C)
Creative thinking is important for providing individualised care. (C)
Creativity is required to plan and provide positive bathing experiences for residents.
Creative and flexible care plan and delivery with organisational support should be in place in order to provide effective assistance in minimising aggressive behaviours during bathing. Provision of individualised care
A flexible hygiene care schedule should be considered. (U)
Adapt organisational environment (i.e. scheduling of bathing or assignment of caregivers) to provide individualised care. (C)
Policies should provide both nursing care staff and patients with discretion in bathing. (C)
Staff feel they are rushed to give residents showers according to the schedule. (C)
Staff should be encouraged to provide flexible care depending on each resident's condition. (C)
The institutional involvement is crucial for families to understand CRAFT ed approach. (C)
There should a uniform policy that promotes optimal bathing procedures across institutions. (C)
Organisational adjustments are necessary to provide individualised care
An option of towel bath is congruent with a person-centred care philosophy. (C)
Caregivers should not force a reluctant resident to bath or shower. Consider other alternatives. (U)
The towel bath method can reduce the patient's discomfort and aggressive behaviour. (C)
The towel bath method should be taught in educational training. (C)
Towel-bath is an effective approach in reducing agitation. (C)
Try an alternative approach like towel bath


Bathing has been considered a routine practice in most nursing homes in the US without consideration of patients' preferences. (C)
Bathing should be understood as a pleasant experience rather than a simple task for both caregivers and residents. (C)
Behavioural interventions are prefered over restrictions. (U)
Caregivers tend to rush through tasks to completion while providing minimal cues to the residents. (U)
The primary purpose of bathing should be to provide a therapeutic intervention to promote relaxation and comfort. (C)
The traditional restrictive thinking that leads to custodial and rigid care practices should be re-considered. (C)
The values placed on hygiene have been exaggerated under cultural and institutional bias. (C)
From a rigid custodial task-focused bathing to a pleasant and therapeutic experience
Stressors of aggressive behaviour during bathing can be controlled. (C)
The focus of debate should be on the development of strategies that prevent the occurence of disruptive behaviour rather than the management during the episode. (U)
From management to prevention
Focus more on the person than the task when bathing every person. (C)
Individualised person-centred approaches should be considered. (C)
Person-centred approach based on individually-assessed needs is more important than
From task-oriented care to person-centred care
Shift of discourse from rigid custodial task oriented approach with a management perspective to a therapeutic person-centred approach with a prevention focus. History
Adapting the physical environment is important to provide comfort. (C)
An unfamiliar and rushed environment can cause congnitively impaired people to feel lost. (C)
Careful assessment of environmental influences can lead to the development of effective interventions that improve outcomes. (U)
Failure to secure privacy or territoriality can trigger disruptive behaviour. (U)
Noise can cause discomfort. (U)
Simple modification of possible stimuli can improve bathing experience of people with dementia. (C)
Bathing environment that can provide comfort and privacy can minimise aggressive bevahiours.
Aggressive behaviours are often defensive actions residents perform when feeling threatened and anxious. (C)
Impaired vision can trigger fear in bathroom. (U)
Residents with dementia may misunderstand bathing as assault. (C)
Use of multiple sensory channels can help residents understand that she/he is being bathed, and therefore elicit cooperation with bathing tasks. (U)
Feelings of fear due to impaired sensory and cognitive functions can trigger aggressive behaviours
Bathing can be a cause of pain and discomfort for people with dementia. (U)
Pain should be managed before bathing. (C)
Seeing residents experiencing pain and discomfort during bath creates stress in staff and families. (C)
Staff and families tend to believe that pain and discomfort during bathing is inevitable. (U)
Joint pain caused by orthopaedic conditions can trigger aggressive bahaviour during bathing but they are often overlooked.
There should be a strategy to provide a safe, comfortable and private bathing environment with effective and appropriate management of orthopaedic pain.

Summary of the chapter

This chapter has outlined the clinical recommendations that are required for minimising agitated behaviours in older adults with dementia, with specific reference to assisting them during their bathing. These recommendations are based on the results of a systematic review. Areas where further research is needed have been discussed regarding the topic of assisted bathing and the systematic review methodology. Finally, a Best Practice Information Sheet was produced for disseminating the evidence-based recommendations that formal and informal caregivers can employ when caring for and bathing older people who suffer from dementia.

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Appendix I: Critical Appraisal Tool for Experimental Designs from JBI-MAStARI

NOTE:
This appendix is included on page 110 of the print copy
of the thesis held in the University of Adelaide Library.

Appendix II: Critical Appraisal Tool for Qualitative Studies from JBI-QARI

NOTE:
This appendix is included on page 111 of the print copy
of the thesis held in the University of Adelaide Library.

Appendix III: Critical Appraisal Tool for Textual Opinion Papers from JBI-NORATI

NOTE:
This appendix is included on page 112 of the print copy of the thesis held in the University of Adelaide Library.

Appendix IV: Appraisal of Guideline for Research and Evaluation

NOTE:
This appendix is included on pages 113-117 of the print copy of the thesis held in the University of Adelaide Library.

Appendix V: Data Extraction Tool for Quantitative Data from JBI-MAStARI

NOTE:
This appendix is included on pages 118-119 of the print copy of the thesis held in the University of Adelaide Library.

Appendix VI: Data Extraction Tool for Qualitative Data from JBI-QARI

NOTE:
This appendix is included on page 120 of the print copy
of the thesis held in the University of Adelaide Library.

Appendix VII: Data Extraction Tool for Textual Data from JBI-NOATARI

NOTE:
This appendix is included on page 121 of the print copy of the thesis held in the University of Adelaide Library.

Appendix VIII: JBI Level of Evidence

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This appendix is included on page 122 of the print copy
of the thesis held in the University of Adelaide Library.

Appendix IX: Included Studies

Qualitative Studies

Study	Setting	Design	Quality score	Population	Intervention	Outcome measures	Result	Follow up
Sloane et al.(2004)	15 Nursing homes in US	RCT with a control group and two experimental arms with cross over.	5/10	73 residents with agitation during bathing (69 completed the trial)	Control group: usual care (shower without person centred approach. Intervention A: Towel bath followed by Person centred approach Intervention B: Reverse order	Agitation, aggressive behaviours and discomfort coded by blinded raters from digitalised videotapes. Agitated and aggressive behaviours: The Care Recipient Behaviour Assessment (CAREBA) Discomfort: A modified version of the Discomfort Scale for Dementia of the Alzheimer type	All measures of agitation and aggression declined significantly in both treatment groups but not in the control group, with aggressive incidents declining 53% in the person-centred shower group (P<.001) and 60% in the towel-bath group (P<.001) Discomfort scores also declined significantly in both intervention groups (P<.001) but not in the control group. No difference was found between two intervention groups in agitation/aggression reduction but discomfort was less with the towel bath (P=.003).	2 weeks

Dunn et al.(2002)	An urban continuing care facility in Canada	Quasi-experimental cross over design	5/10	16 residents with advanced dementia None of them were deemed able to consent (The Brief Cognitive Rating Scale).	All participants received 4 consecutive sessions in each of the two methods: the tub bath or the Thermal bath.	14 types of behaviours from a combination of the Cohen-Mansfield Agitation Inventory and the Ryden Aggression Scale, and observations in preliminary trials. (14 behaviours included Noisy breathing, distressed facial expression, pained facial expression, frowning, grabbing, hitting, strange noise, pushing, repetitive mannerisms, retracting, screaming, shivering, verbal aggressive behaviour, and negative vocalisation)	Over all, sum of 14 behaviours was significantly smaller ($t=4.18$, $p<0.001$) in the Thermal bath than in the tub bath. Only shivering shoed a significantly lower frequency in the Thermal bath over the tub bath.	8 weeks
Hoeffer et al. (1997)	76 bed intermediat e care aged care facility in US	Pre and post test study	3/10	11 residents who had history of aggressive behaviour during bathing(verbally or physically aggressive behaviour during 2 of 4 bathing) plus score of 21 or less on the Mini Mental State Exam. Data analysis was conducted on only 10 residents.	Intervention: A bed side consultation model and individualised bathing care plan, that aimed to alter psychosocial environment and physical environment (Person-centred approach)	A revised version of the Ryden Aggression Scale (RAS) with 10 physically and 3 verbally aggressive behaviours.	Significant differences were found between the pre and post intervention mean scores for the number of physically and verbally aggressive behaviours observed and for how upset the subjects appeared.	6 month
Mickus et al. (2002)	Nursing home in US	Pre and post study	3/10	23 Nursing home residents with dementia who had history of behavioural	PRIDE based on Sloane and Rader (1995) (Privacy, Reassurance, Information, Distraction, Evaluation) which represents important behavioural principles for preventing and minimising	Neuropsychiatric Inventory (NPI) 5 of 12 subscales were used. (agitation,	Within subject improvement was shown for the all five subscales while only anxiety and irritability had statistically	1-2 month

				disturbance during bathing	agitation 30minute of interactive seminar with NAs.	anxiety, apathy, irritability and disinhibition)	significant improvement.	
Clark et al. (1998)	Nursing home in USA	Randomised controlled trial	5/10	18 older adults age 55-95 with severe level of cognitive impairment	Control (no music) Intervention: Recorded selections of preferred music were played via audiotape recorder during the bathing episode. Following a 2-week (10 episodes) observation period, conditions were reversed. A total of 20 observations were recorded for each individual. Results indicated that during the music condition, decreases occurred in 12 of 15 identified aggressive behaviours. Decreases were significant ($p < 0.05$) for the total number of observed behaviours and for hitting behaviours. During the music condition, caregivers frequently reported improved affect and a general increase in cooperation with the bathing task. The implications of these findings for improving the overall quality of care for severely cognitively impaired older adults are discussed.	Yelling, abusive language, hitting, verbal resistance, crying, physical resistance, grabbing, pinching, kicking, spitting, wandering, biting, throwing, scratching, gouging	A significant improvement was found in total number of aggressive behaviours and hitting behaviour in the music condition.	4 weeks

Qualitative Studies

Study	Setting	Participants	Methodology	Data collection and analysis method	Quality score	Findings
Kovack et al. (1996)	Nursing home in USA	33 residents with moderate cognitive impairment assessed by the Short Portable Mental Status Questionnaire	Grounded theory	No participant observation and constant comparative analysis method	8/10	The strategies used by cognitively impaired older adults included: attaining control, sharing control, resigning control and regaining inner control.
Miller (1997)	Long term care facility in US	30 nursing home staff including Registered Nurses, Licensed Practical Nurses and Certified Nursing Assistants	Qualitative descriptive study	Individual in-depth interviews and thematic analysis by Miles and Huberman (1994)	6/10	Nursing staff felt that they were subjected to aggressive patient behaviours ranging from verbal threats to actual physical violence. Showering a resident was the activity of daily living most likely to provide patient to staff physical aggression.

Textual opinion papers

Study	Culture	Quality score	Type of paper	Focus of the paper
Barrick et al. (2002)	Aged care in USA	10/10	Textbook on person-centred bathing method	Text book of Person-centred showering method
Corber et al. (1998)	Aged care in USA	6/7	Opinion piece	An opinion piece on the need for a uniform bathing policy
Flori (2007)	Aged care in USA	6/7	Opinion piece	Practical tips for bathing a patient with dementia
Martin et al. (1999)	Aged care in USA	10/10	Opinion piece	Description of the Towel bath technique
Martin et al. (1998)	Aged care in USA	10/10	Opinion piece	Description of the CRAFT (creative, respectful, attuned, flexible and tender) to assisted bathing.

Miller (1994)	Aged care in USA	10/10	Opinion piece	Practical recommendations for bathing a patient with dementia
Rader et al. (2006)	Aged care in USA	10/10	Opinion piece	Practical recommendations based on Person-centred approach
Sloane et al. (1995)	Aged care in USA	10/10	Opinion piece	Practical recommendations for direct care providers and nursing staff who train and supervise them.

Appendix X: Excluded Studies

Quantitative Studies (n=7)

Calleson DC, Sloane PD, Cohen LW. Effectiveness of mailing "Bathing Without a Battle" to all US nursing homes. *Gerontology & Geriatrics Education* 2006;27(1):67-79. **Reason for exclusion: Outcome is increased knowledge in caregivers.**

Cohen-Mansfield J, Parpura-Gill A. Bathing: a framework for intervention focusing on psychosocial, architectural and human factors considerations. *Archives of Gerontology & Geriatrics* 2007;45(2):121-35. **Reason for exclusion: Single case study**

Dawson P, Kontos P. Nursing assistants reduce aggressive behaviour during bathing cognitively impaired nursing home residents. *Perspectives* 1998;22(2):20. **Reason for exclusion: Original study has been included.**

Hoeffer B, Talerico KA, Rasin J, Mitchell CM, Stewart BJ, McKenzie D, et al. Assisting cognitively impaired nursing home residents with bathing: effects of two bathing interventions on caregiving. *Gerontologist* 2006;46(4):524-32. **Reason for exclusion: Outcome measure is not related to agitated behaviours.**

Maxfield MC, Lewis RE, Cannon S. Training staff to prevent aggressive behavior of cognitively impaired elderly patients during bathing and grooming. *Journal of Gerontological Nursing* 1996;22(1):37-43. **Reason for exclusion: Outcome measure is knowledge level.**

Namazi KH, Johnson BD. Issues related to behavior and the physical environment: bathing cognitively impaired patients. *Geriatric Nursing* 1996;17(5):234-8; quiz 38-9. **Reason for exclusion: Descriptive study.**

Somboontanont W, Sloane PD, Floyd FJ, Holditch-Davis D, Hogue CC, Mitchell CM. Assaultive behavior in Alzheimer's disease: identifying immediate antecedents during bathing. *Journal of Gerontological Nursing* 2004;30(9):22-9; quiz 55-6. **Reason for exclusion: Descriptive study.**

Qualitative studies
No qualitative study was excluded in the Critical Appraisal stage.

Textual opinion papers (n=6)

Clarfield AM. A warm bath. *Journal of the American Geriatrics Society* 2005;53(6):1075-76.
Reason for exclusion: A short commentary.

Dougherty J, Long CO. Techniques for bathing without a battle. *Home Healthcare Nurse* 2003;21(1):38-39.
Reason for exclusion: Original study has been included.

Evans LK. The bath! Reassessing a familiar elixir in old age. *Journal of the American Geriatrics Society* 2004;52(11):1957-8.
Reason for exclusion: A short commentary.

Kovach CR, Meyer-Arnold EA. Preventing agitated behaviors during bath time. *Geriatric Nursing* 1997;18(3):112-4.
Reason for exclusion: Original study has been included.

Minner DM. Immediate antecedents: just part of the picture... Somboontanout W, Sloan PD, Floyd FJ et al. (2004). Assaultive behaviors in Alzheimer's disease: identifying immediate antecedents during bathing. Journal of Gerontological Nursing, 30(9),22-29. *Journal of Gerontological Nursing* 2006;32(1):6-7.
Reason for exclusion: A short letter.

Skewes SM. Bathing: It's a tough job! *Journal of Gerontological Nursing* 1997;22(1):45-47.
Reason for exclusion: Not specific to older adults with dementia.