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Strategies used by care home staff to manage behaviour that challenges in dementia: A systematic review of qualitative studies

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ABSTRACT

Background: Psychotropic drugs are often prescribed to manage behaviour that challenges in care home residents with dementia but contravene guidelines as evidence shows their use increases the risk of strokes and death. Therefore, a review is needed that conceptualises understanding of the pharmacological and non-pharmacological strategies implemented by care home staff to manage behaviour that challenges in dementia and the factors that influence decision-making. This knowledge is important to develop dementia guidelines to implement a sustainable non-pharmacological approach to support residents with behaviour that challenges.
Aim: To review qualitative studies to synthesise understanding of strategies implemented by care home staff to manage behaviour that challenges in dementia.
Methods: This systematic review involved a synthesis of qualitative data (PROSPERO protocol registration CRD42020165948). Searches of three electronic databases, PubMed, PsycINFO and CINAHL were conducted from inception until July 2021, supplemented by grey literature searches. Studies were included if they used qualitative methods and explored how care home staff respond to behaviour that challenges; data exploring other aspects of dementia care were excluded. Study quality was assessed using the Critical Appraisal Skills Programme checklist. Thematic synthesis was used to conceptualise understanding of the strategies implemented by care home staff to manage behaviour that challenges in dementia.
Findings: In total 1151 records were identified of which 34 studies were included in the review. Three themes emerged, 'Putting out the fires', refers to reactive strategies, implemented by staff to quell behaviour that challenges. However, if these strategies fail, staff may resort to pharmacological approaches for convenience to suppress these behaviours. The theme 'Personhood, human rights and respect' highlights the need for people with dementia to feel valued and useful by engaging residents in meaningful activities. Furthermore, the theme "Person focused approach – A paradigm shift" reflects changes in culture, required to implement non-pharmacological strategies to behaviour management these include staff training, collaboration and equitable decision-making.
Conclusions: This review has identified strategies used by care home staff to manage behaviour that challenges. Non-pharmacological approaches to support residents with behaviour that challenges require staff training in behaviour management and psychotropic medicine management as part of their formal education program, and enhanced opportunities for collaboration and decision-making. In addition, residents should receive person focused support to facilitate participation in meaningful activities. These findings will be beneficial in developing guidelines to implement sustainable non-pharmacological approaches to manage behaviour that challenges in dementia.

What is already known

- Most care home residents with dementia exhibit behaviour that challenges including agitation and aggression.
- Psychotropic drugs are often used to manage behaviour that challenges but are associated with an increased risk of stroke and death in people with dementia; hence, the National Institute for Health and Care Excellence (NICE) guideline on Dementia (2018) recommends taking a non-pharmacological approach.

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- It is imperative to synthesise understanding of the strategies used by care home staff to manage behaviour that challenges and the factors that influence decision-making in order to inform the development of dementia guidelines to facilitate implementation of non-pharmacological strategies to support residents.

What this paper adds

- This systematic review has conceptualised understanding of strategies implemented by care home staff to manage behaviour that challenges; this knowledge is important to assist development of guidelines, such as the NICE guideline on Dementia (2018) to enable implementation of non-pharmacological approaches to behaviour management.
- This review has identified person focused support as an important strategy to reduce behaviour that challenges by supporting residents with dementia to engage in meaningful activities and occupation, tailored to their personal history.
- Changes in care home culture and staff attitudes will be required to implement non-pharmacological strategies; this review recommends that care home staff are trained in managing behaviour that challenges and psychotropic medicine management and have opportunities to participate in multidisciplinary collaboration and equitable decision-making.

1. Background

The prevalence of dementia in care homes is estimated to be 73% in the UK (Prince et al., 2014) and 48% in the US (Rome et al., 2018). Steinberg et al. (2008) estimated that 90% of people with dementia experience changes in behaviour such as aggression, agitation, wandering and repetitive vocalisations. These behaviours are commonly referred to as behaviour that challenges (Maidment et al., 2016). These behaviours may also be referred to as the behavioural and psychological symptoms of dementia (BPSD) or neuropsychiatric symptoms (Tible et al., 2017; Lyketsos, 2007), or responsive behaviours (Song et al., 2019) as they may arise in response to a specific situation or unmet physical or psychological need that cannot be verbally communicated (Cohen-Mansfield and Werner, 1995; Cohen-Mansfield, 2000; Cohen-Mansfield et al., 2015). However, in this review the term "behaviour that challenges" will be used as these behaviours are often challenging for care home staff to manage.

A varied range of pharmacological and non-pharmacological strategies may be used by care home staff to manage behaviour that challenges. Pharmacological approaches are predominantly associated with psychotropic drugs (Gustafsson et al., 2013) including antipsychotics, anxiolytics, hypnotics and antidepressant medications (Maidment et al., 2016; Gustafsson et al., 2013). Of these, antipsychotic drugs are most frequently used to manage behaviour that challenges in dementia (Maidment et al., 2016; Gustafsson et al., 2013) despite evidence that antipsychotics increase the occurrence of strokes (Gustafsson et al., 2013; Maidment et al., 2018) and mortality (Gustafsson et al., 2013; Maidment et al., 2018; Maust et al., 2015; Tampi et al., 2016; Ballard et al., 2009; Rochon et al., 2008; Banerjee, 2009). A report by Banerjee (2009) found that the use of antipsychotics in dementia resulted in 1800 deaths per annum in the UK (Banerjee, 2009). More recently Tible et al. (2017) highlight how antipsychotic drugs are still frequently prescribed to manage behaviour that challenges in dementia despite the increased risks of cerebrovascular incidents and death. It is also suggested that antipsychotics may worsen cognition and quality of life (Maidment et al., 2016; Maidment et al., 2018; Rochon et al., 2008; Banerjee, 2009; Ballard and Corbett, 2010). Indeed, age and ill-health can lead to pharmacodynamic and pharmacokinetic changes in the way the body metabolises drugs, resulting in more frequent occurrences of serious adverse effects (Mangoni and Jackson, 2004). Thus, regulatory warnings advise against prescribing antipsychotic drugs to people with dementia (Banerjee, 2009). However, tighter regulatory control over the use of antipsychotic drugs has caused a shift in decision-making to prescribing anxiolytic drugs, such as benzodiazepines, associated with adverse events such as sedation, impaired cognition, respiratory depression, dizziness and falls (Maidment et al., 2016; Huybrechts et al., 2011). There has also been a shift to prescribing antidepressant drugs, however, their use in older people has been found to increase the risk of hyponatremia (Coupland et al., 2011). Hence, the National Institute for Health and Care Excellence (NICE) guideline on Dementia [NG97] (2018) recommends non-pharmacological approaches for managing behaviour that challenges in people with dementia (National Institute for Health and Care Excellene, 2018). Whilst a wide range of non-pharmacological approaches are available (Livingston et al., 2005; Abraha et al., 2017), many non-pharmacological strategies require a high staff-to-resident ratio to implement individualised care plans. Care home managers may perceive that a high staff-to-resident ratio may incur higher financial costs (Lewis et al., 2005). However, a cluster-randomised controlled trial to assess the impact of the Well-Being and Health for People With Dementia (WHELD) program in care home residents with dementia found that the program, which supports staff to implement psychosocial interventions, was effective in reducing agitation and was associated with social and healthcare costs £4740 lower per resident compared to residents receiving pharmacological treatment alone (Ballard et al., 2020).

This highlights the importance of understanding strategies implemented by care home staff to manage behaviour that challenges, for example, attitudes of staff may influence decision-making on the approach taken to behaviour management. In this review attitudes are defined as personal beliefs and cognitions associated with emotions. Attitudes are formed by past experiences and give rise to a pre-disposition to behave in a certain way, based on evaluations of positive and negative consequences of actions. This is aligned with the multicomponent approach (Eagly and Chaiken, 1993). Therefore, the aim of this review of qualitative studies is to synthesise understanding of the strategies used by care home staff to manage behaviour that challenges in dementia and the factors that influence decision-making on the approach taken to behaviour management.

1.1. Rationale for conducting this systematic review

A search of PROSPERO, PubMed, PsycINFO and CINAHL, indicated that no systematic review on this topic was underway. Three previous systematic reviews on related topics were identified: Nybakken et al. (2018) and Holst and Skär (2017) both explored the views of care home staff regarding the triggers for residents' aggression but provided few insights into the everyday strategies employed by care home staff to manage aggression or other behaviours associated with dementia, for example, agitation. The systematic review by Walsh et al. (2017) explored factors influencing antipsychotic prescribing to care home residents with dementia but did not aim to understand how care home staff manage behaviour that challenges using a non-pharmacological approach. Therefore, a systematic review synthesising staff experiences of managing behaviour that challenges, that encompasses both non-pharmacological and pharmacological strategies, is warranted. This knowledge will assist in the development of guidelines or interventions to implement sustainable non-pharmacological interventions to manage behaviour that challenges in dementia.

1.2. Aim

To review qualitative studies to synthesise understanding of strategies used by care home staff to manage behaviour that challenges in dementia.

2. Methods

A thematic synthesis of qualitative data, informed by Thomas and Harden (2008) was used to identify themes that conceptualised strategies implemented by care home staff to manage behaviour that challenges,

associated with dementia. The results were reported to conform with the Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ) Statement (Tong et al., 2012) (Supplementary file 5). The systematic review protocol was registered at The International Prospective Register of Systematic Reviews (PROSPERO), (registration number CRD42020165948). Available online at, https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=165948t (Elizabeth O'Donnell, Caroline Swarbrick and Carol Holland, 2020).

2.1. Search strategy and eligibility criteria

Three electronic databases, PubMed, PsycINFO and CINAHL were searched from inception until July 2021 to ensure the retrieval of primary qualitative studies that explored the strategies that care home staff use to manage behaviour that challenges in residents with dementia. The search strategy was devised with the assistance of a Lancaster University librarian (Supplementary file 1: The full electronic search strategy used for databases PubMed, PsycINFO and CINAHL). Concepts emerging from the Sample, Phenomenon of Interest, Design, Evaluation, Research type (SPIDER) framework (Cooke et al., 2012) were used to identify search terms and keywords. Therefore, terms relating to care home staff were combined with keywords/terms related to challenging behaviours associated with dementia and with keywords/terms related to study design. These search terms were then combined with keywords/terms relating to the views and experiences of care home staff and keywords/terms related to qualitative research (Table 1).

The comprehensive search was not restricted by date, country of origin or language, to ensure all available studies were retrieved. In addition, searches were also conducted of citations and reference lists of studies identified as eligible for inclusion in the review. Moreover, a search of "ProQuest" facilitated retrieval of relevant doctoral theses in the research field. The grey literature also included searches of relevant conference abstracts.

Eligibility
Inclusion criteria

- Peer reviewed published studies or doctoral theses that aim to understand strategies used by care home staff to manage behaviour that challenges, associated with dementia and factors that influence decision-making.
- Qualitative data collected from interviews and focus groups
- Qualitative methods of data analysis.
- Only the qualitative component of mixed-methods studies was extracted.

Exclusion criteria

- Purely quantitative studies
- Studies evaluating a specific intervention.
- Studies that focused on other aspects of dementia care, for example, quality of life.
- Data collected from healthcare professionals other than the care home staff specified (Supplementary file 2: Table of Inclusion and Exclusion Criteria).

2.2. Screening and selection of studies

1151 studies were identified. Three reviewers (EOD) (CH) and (CS) independently screened 10% of titles and abstracts using a pre-designed form based on the inclusion criteria, aligned with Sundaram et al. (2019). The level of agreement between all three reviewers was high. All three reviewers (EOD) (CH) and (CS) agreed that one reviewer (EOD) should independently screen 90% of titles and abstracts using the same pre-defined form. 1014 studies were excluded as they did not meet the inclusion criteria. One reviewer (EOD) read the remaining 137 full text papers for eligibility with 10% of full-text papers independently screened by two reviewers (CH) and (CS), aligned with Ronzi et al. (2018). The level of agreement between all three reviewers was high and consensus achieved through discussion, with reasons for exclusion documented. Finally, 34 studies were included in the systematic review. Search strategy results are illustrated as a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow chart (Moher et al., 2010) (Fig. 1).

2.3. Data extraction and quality appraisal

Data extraction was managed using NVIVO 12 software (QSR International, 1999). One reviewer (EOD) extracted the findings. General data were also extracted from each study including author name, year and country, the aim of the study, setting and participants, also, methods of data collection and analysis (chapter 3.1).

The next stage involved quality appraisal of each study included in the review using The Critical Appraisal Skills Programme (2017) CASP (Qualitative Research) Checklist (Supplementary file 3). 20% of studies ($n = 7$) were randomly selected and quality appraised independently by two reviewers (EOD) and (CS) there was a high degree of agreement between the two reviewers and where discrepancies arose a third reviewer (CH) acted as arbitrator. It was agreed between all three reviewers that one reviewer (EOD) would independently appraise the quality of 80% of studies. It was also decided not to exclude any study based on their quality appraisal, however, the quality of each study underpinning the findings of this review was transparently stated in tabular format (Supplementary file 4) and explicitly stated in the Results section of this paper (Chapter 3.1).

2.4. Data synthesis

A thematic synthesis was conducted aligned with Thomas and Harden (2008). A critical theorist epistemology was taken to the data (Bunniss and Kelly, 2010). Critical theory assumes knowledge is co-constructed and constantly revised by individuals and groups, this process is mediated through social systems and power relations (Bunniss and Kelly, 2010). The thematic synthesis involved three stages (Thomas and Harden, 2008). In the first stage data from the findings section of included papers was coded line-by-line in NVIVO 12 software by the reviewer (EOD) (QSR International, 1999). The process was inductive and iterative. The next phase involved the reviewer (EOD) developing descriptive themes to describe care home staff experiences regarding managing behaviour that challenges (Thomas and Harden, 2008). In the third stage, analytical themes were generated by the reviewer (EOD) (Thomas and Harden, 2008) that went beyond describing staff experiences of behaviour management, to infer meaning of the pharmacological and non-pharmacological strategies implemented to manage behaviour that challenges and the factors that influenced decision-making on the approach adopted. Interpretations were discussed with reviewers (CH) and (CS). To enhance rigour, the main reviewer (EOD) maintained a reflective

Table 1
Terms and keywords based on using the Sample, Phenomenon of Interest, Design, Evaluation, Research type (SPIDER) framework for qualitative research (Cooke et al., 2012).

SPIDER framework	Search terms/keywords
S - Sample	Nursing home/care home nurses or assistants or aides or managers
PI – Phenomenon of Interest	Challenging behaviours associated with dementia – aggression or agitation or wandering or behavioural and psychological symptoms of dementia (BPSD) or neuropsychiatric symptoms or responsive behaviour
D - Design	Interview or focus group or thematic analysis or narrative or grounded theory or interpretive phenomenological analysis
E - Evaluation	Attitudes of Health Personnel or view or perception or experience or decision-making of nursing home/care home nurse, assistants, aides, manager
R – Research type	Qualitative research

diary (Thomas and Harden, 2008), noting how prior experience as a family carer and a critical theory perspective influenced theme construction. An audit trail was maintained documenting changes in theme development (Thomas and Harden, 2008). The initial theme "Putting out the fires" focuses on reactive strategies to de-escalate behaviours that challenge. The theme, "Personhood, human rights and respect", highlights the importance of the relationship between staff and residents. The final theme to be developed "Person focused approach – a paradigm shift" addresses the changes needed in care home culture and staff attitudes to enable implementation of non-pharmacological approaches to behaviour management. Themes and sub-themes were reviewed and refined, for example changes were made to sub-theme "Changes in care home culture and staff attitudes" to differentiate care home culture from individual attitudes.

3. Results

3.1. Search results - characteristics of included studies

Thirty-four studies were included with 974 participants across ten countries. Studies were included from the UK (n = 10), the US (n = 8), Canada (n = 3), Australia (n = 3), Sweden (n = 3), Switzerland (n = 2), Netherlands (n = 2), Norway (n = 1) Ireland (n = 1) and Japan (n = 1). (Details can be seen in Table 2). One paper written in German was identified. After reading the abstract that had been translated into English, the study was excluded as the aim did not met the inclusion criteria.

Results of quality appraisal

Quality appraisal using the Critical Appraisal Skills Programme (CASP qualitative research checklist) identified that almost two-thirds of the primary qualitative studies included in the review were of high quality or moderate to high quality (n = 20), while five studies were assessed to be of moderate quality. However, nine studies were assessed to be of low quality or low-to-moderate quality. In 22 studies, a lack of researcher reflexivity limited overall study quality. Also, discussion of ethical issues was inadequately addressed in 16 studies. Most studies did not provide reasons why potential participants did not take part. In addition, only a few studies reported modifying the interview or focus group schedules during data collection. Also, data saturation was inadequately addressed in most studies, while only one study described public and patient involvement (PPI), although PPI may have been beneficial in ensuring that the aims of the research were relevant. Six

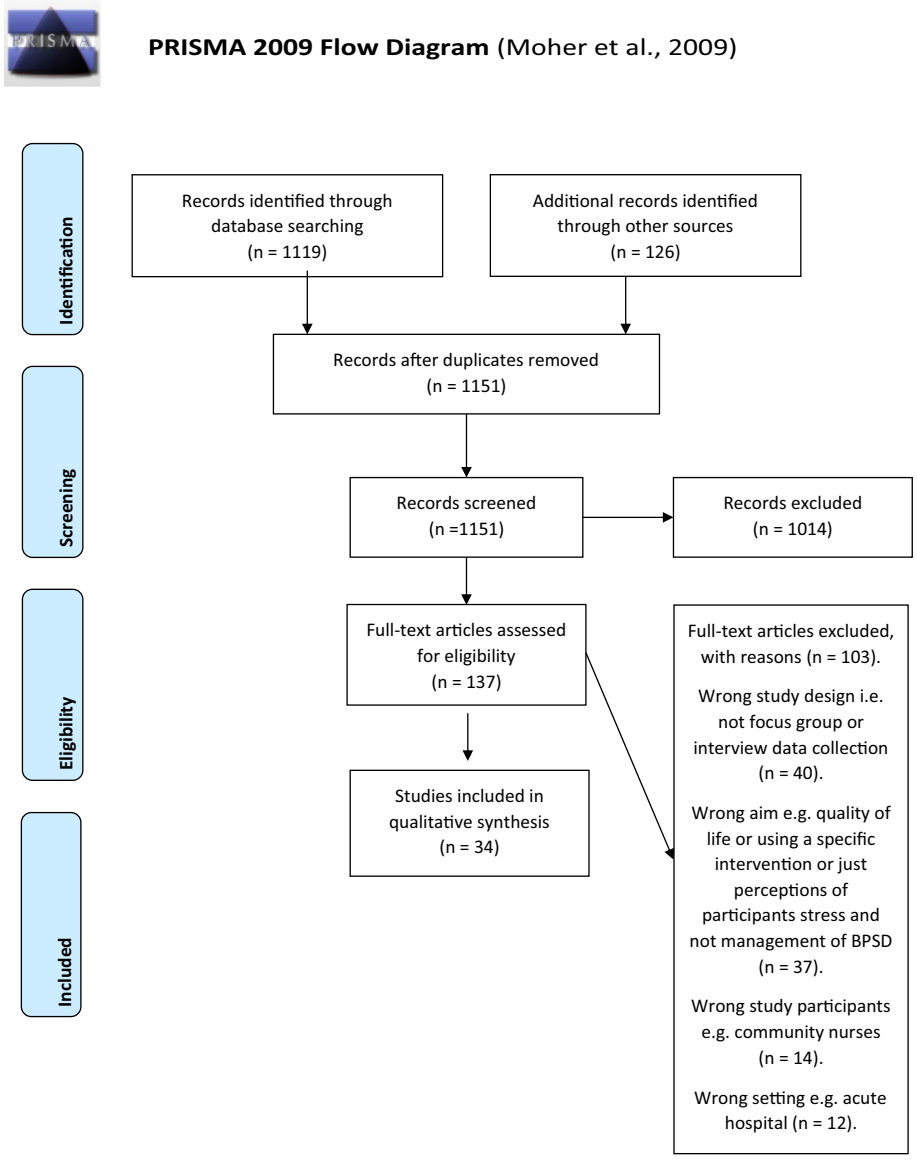

Fig. 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram of literature search (Moher et al., 2010).

Table 2
Table of characteristics of the studies included in the review (n = 34).

Author & year & country	Aim of study	Participants (sample & settings)	Method of data collection	Method of data analysis
Ragnoskog et al., (1997) Sweden	Exploring care home staff experiences of agitation in residents with dementia and the pharmacological and non-pharmacological strategies used to manage agitation.	17 experienced formal caregivers, including 8 nurses from 5 nursing homes and 4 collective residential units	Interviews	Qualitative data analysis (not specified).
Hantikainen et al., (2001) Switzerland	Exploring how care home staff perceptions of residents influence decision-making on the use of restraint.	20 trained and untrained nursing staff from two Swiss nursing homes	Unstructured interviews	Colaizzi's phenomenological method
Skovdahl et al., (2003) Sweden	Exploring how professional carers in long-term residential facilities deal with the behavioural and psychological symptoms of dementia.	15 caregivers from 3 units.	Interviews	Phenomenological hermeneutic
Foley et al., (2003) US	Exploring techniques used by staff to manage disruptive behaviour in nursing homes.	51 nurses, 10 activity staff and 27 secure unit co-ordinators from 36 secure unit nursing homes.	Structured interviews	Content analysis
Robinson et al., (2007) UK	Exploring the perspectives of different stakeholders in the management of wandering.	4 health and social care professionals; 6 nursing home staff, 3 family carers and an established group of 6 people with mild dementia	Focus groups	Thematic framework approach (Ritchie and Spencer 1994), which is both inductive and deductive.
Kutsumi et al., (2009) Japan	Investigating techniques used by care staff to manage the behavioural and psychological symptoms of dementia.	15 care providers in long-term care facilities in Japan	Interviews	Grounded theory
Kolanowski et al., (2010) US	Exploring nursing staff perceptions of the barriers to implementing non-pharmacological strategies to manage the behavioural and psychological symptoms of dementia	35 care home staff from 6 nursing homes	Focus groups	Content and thematic analysis
Zeller et al., (2011) Switzerland	Exploring the views and strategies used by professional caregivers' to manage aggressive behaviours of care home residents.	18 registered nurses, 5 nursing assistants and 7 nursing students from 4 nursing homes.	Focus groups	Qualitative content analysis
Dupuis et al., (2012) Canada	Exploring the views, perceptions and experiences of staff in managing challenging behaviours of care home residents.	48 care home staff from 18 care homes	Interviews	Constant comparative method (Charmaz, 2006)
Isaksson et al., (2013) Sweden	Investigating how staff, manage residents' violent/aggressive behaviour in nursing homes.	41 female professional caregivers, including 8 nursing assistants, 23 enrolled nurses and 10 registered nurses from 3 care homes.	Interviews	Qualitative content analysis
Duxbury et al., (2013) UK	Exploring effective strategies to manage aggressive behaviour, associated with dementia in residential facilities.	4 dementia care unit managers, 2 registered nurses and 2 care assistants from 4 nursing homes.	Semi-structured interviews	Thematic analysis
Janzen et al., (2013) Canada	Exploring the views of care staff regarding the use of non-pharmacological interventions to reduce agitation in residents with dementia.	44 staff members from 5 long-term care units, of which 3 had secure dementia units.	Focus groups	Van Manen's hermeneutic phenomenology
Yeager (2013) US PhD thesis "The Relationships between Licenced Vocational Nurses' Care, Documentation, and Perceptions of Dementia-Compromised Behaviours in the Nursing Home" University of Texas, 2013.	Exploring the relationship between nurses' responses to dementia behaviours, documentation, and perceptions of dementia care.	10 nurses from 3 nursing homes participated, 7 worked on secure units and 3 worked in the general nursing home.	Semi-structured interviews	Unspecified qualitative data analysis
Gyerberg et al., (2013) Norway	Exploring strategies or interventions used by care home staff to manage behaviour that challenges, to avoid the use of coercion in care homes.	60 participants including nurses, auxiliary nurses and some members of staff without formal qualifications. Some worked in ordinary units and others in special care units	Interdisciplinary focus group interviews	Grounded theory
Smeets et al., (2014) Netherlands	Exploring factors and reasons for psychotropic drug prescription for neuropsychiatric symptoms in nursing home residents with dementia.	A total of 29 participants including 14 nurses and 15 physicians from 12 nursing homes.	Semi-structured interviews	Grounded theory
Snellgrove et al., (2015) US	Exploring strategies used by certified nurse assistants to manage resident to resident violence and aggression in nursing homes	11 certified nurse assistants from a single not-for-profit nursing home	Semi-structured interviews	Content analysis and constant comparison.

(continued on next page)

Table 2 (*continued*)

Author & year & country	Aim of study	Participants (sample & settings)	Method of data collection	Method of data analysis
Ostaszkiewicz et al., (2015) Australia	Care home nurses experiences of responding to behaviour that challenges and strategies implemented to deal with the symptoms.	30 nurses from 3 nursing homes	Focus groups	Thematic analysis
Mallon (2015) UK PhD thesis Managing behaviour that challenges within English care homes: an exploration of current practices. University of Kent (2015).	Exploring current practices to manage behaviour that challenges in care homes.	Thirty-eight female participants and three male participants including 11 managers and 30 care home staff from 11 care homes	Interviews	Thematic analysis
Kolanowski et al., (2015) US	Exploring how care home staff effectively deliver non-pharmacological therapies and person-centred care to manage the behavioural and psychological symptoms of dementia in care homes.	59 care home staff from 2 care homes	Focus groups	Qualitative content analysis
Shaw et al., (2016) UK	To understand how treatment culture in care homes impacts on management of behaviour that challenges.	5 care home managers, 7 nurses, 13 care assistants and 2 GP's.	Interviews	Framework analysis and thematic analysis
Backhouse et al., (2016) & 2018. UK Data derived from a doctoral study; "The management of behavioural and psychological symptoms of dementia in care homes". University of East Anglia (2010–2014)	Exploring approaches to manage behaviour that challenges in care homes, including, more questionable practices such as surveillance, forced care and physical restraint strategies. Also, to understand how these strategies impact on the human rights of residents.	40 care home staff from 4 care homes	Interviews	Framework analysis
Sawan et al., (2017) Australia	Exploring organisational culture in nursing homes and the subsequent influence on the use of psychotropic medicines.	40 on-site nursing home staff and visiting staff from 8 nursing homes	Semi-structured interviews	Thematic analysis
Donyai et al., (2017) UK	Exploring the use of false arguments in professionals' decision-making about antipsychotic prescribing to care home residents with dementia.	5 care-home managers (from 5 different care homes), 5 GPs, 7 community psychiatric nurses, 5 psychiatrists, 2 geriatricians, 2 pharmacists, 1 memory-clinic nurse and 1 social worker	Interviews	Qualitative content analyses
van Wyk et al., (2017) UK	To understand how care home staff manage residents with the behavioural and psychological symptoms of dementia.	17 care assistants from 4 care homes	Semi-structured interviews	Thematic and framework analysis
Almutairi et al., (2018) UK	To understand the rationale for using antipsychotic drugs in care home residents with dementia.	5 care home managers	Interviews	Constructivist grounded theory
Clifford & Doody (2018) UK	Exploring nurses' views of managing challenging behaviours in long term residential care.	9 nurses from 1 public and 8 private long-term facilities.	Interviews	Qualitative content analyses
Herron et al., (2018) Canada	To understand how carers, understand the actions of people with dementia in relation to their environment.	18 care home staff (17 nurses and 1 nursing aide) from an unspecified number of nursing homes. Also, 9 informal carers.	Semi-structured interviews	Constant comparison approach (Charmaz, 2014).
Kerns et al., (2018) US	Factors influencing the adoption of pharmacological approaches to manage the behavioural and psychological symptoms of dementia in care homes and the barriers to taking a non-pharmacological approach.	66 assisted living nurses from 6 nursing homes	Semi-structured interviews	Qualitative data analysis via template, immersion and crystallisation, and thematic development.
Rapaport et al., (2018) UK	To explore how care home staff understand and manage agitation.	25 care home staff from 6 care homes in S.E. England including both private and charity sector run residential and nursing homes of differing sizes in urban and rural areas.	Interviews	Qualitative thematic analysis
Simmons et al., (2018) US	The use of pharmacological strategies to manage the behavioural and psychological symptoms of dementia and the barriers to reduce inappropriate use of antipsychotic medications.	11 licenced nurses, 4 registered nurses, 2 facility administrators, 2 nurse practitioners, 2 directors of nursing, 2 certified nursing assistants, 1 assistant director of nursing, from 3 community nursing homes.	Focus groups	Qualitative data analysis. Coded using a hierarchical coding system. The hierarchical coding system was developed based on the overall purpose of the study and a preliminary review of the transcripts by the moderator.
Walsh et al., (2018) Ireland	Exploring the factors that influence antipsychotic prescribing to nursing	5 general practitioners, 3 family members,	Semi-structured interviews	Framework Analysis

Table 2 (*continued*)

Author & year & country	Aim of study	Participants (sample & settings)	Method of data collection	Method of data analysis
	home residents with dementia.	2 pharmacists, 2 consultant geriatricians 2 consultant psychiatrists, 8 nurses, 5 healthcare assistants from 4 nursing homes		
van Teunenbroek et al., (2020) Netherlands	Exploring the perceived barriers to change regarding management of neuropsychiatric symptoms in nursing homes and to construct a conceptual framework of the relationships between these barriers.	Total of 17 participants including 6 nurses, 1 nursing assistant, 2 unit managers, 2 psychologists and 6 relatives of residents from different dementia units of one nursing home.	Focus groups	Thematic analysis
Rosenthal et al., (2020) US	Exploring health professionals' experiences with decision-making during changes under the National Partnership to improve dementia care in nursing homes.	Total of 40 participants including 30 nursing home staff and 10 prescribing physicians from 14 nursing homes.	Semi-structured interviews	Unspecified qualitative data analysis
Watson & Hatcher, (2021) Australia	Exploring staff perceptions of agitation in care home residents and the influence of dementia, when selecting management strategies to reduce agitated behaviour.	Total of 11 participants including 7 nurses and 4 care assistants from two care homes across the same organisation.	Semi-structured interviews	Content analysis

studies were assessed to be of low quality due to weaknesses across several Critical Appraisal Skills Programme (CASP) criteria (Kutsumi et al., 2009; Kolanowski et al., 2010; Robinson et al., 2007; van Wyk et al., 2017; Foley et al., 2003; Ragneskog and Kihlgren, 1997). (Supplementary file 4).

3.2. Synthesis of findings

The synthesis of findings identified three themes and 10 subthemes (Table 3).

The theme "Putting out the fires" refers to reactive strategies implemented by care home staff to de-escalate behaviour that challenges using a range of different pharmacological and non-pharmacological strategies.

The theme Personhood, human rights and respect, addresses the concept of personhood in dementia and highlights the importance of the relationship between residents and staff.

The theme Person focused approach – a paradigm shift reflects the changes in care home culture and staff attitudes needed to enable implementation of sustainable non-pharmacological approaches to manage behaviour that challenges.

3.3. Theme: "putting out the fires"

3.3.1. Reactive strategies using a non-pharmacological approach

Care home staff in all studies acknowledged that they reacted to behaviours that challenge using a wide range of non-pharmacological strategies to de-escalate behaviours by "putting out the fires."

> "At times there's so little staff and there's a lot of behaviours all at once, it's just kind of putting out fires and keep things rolling" (nurse) (Janzen et al., 2013).

In several studies, care home staff explained that taking the resident to a quiet room and providing reassurance was beneficial in quelling behaviour that challenges. Using a flexible approach, postponing care tasks, giving residents time and space to calm down or changing carers was also described by staff as effective. In addition, most care home staff describe how they use distraction techniques to de-escalate challenging behaviours by focusing attention elsewhere (Dupuis et al., 2012; Kolanowski et al., 2010; Clifford and Doody, 2018; Duxbury et al., 2013; Skovdahl et al., 2003; Snellgrove et al., 2015; Isaksson et al., 2013; Shaw et al., 2016; Janzen et al., 2013; Zeller et al., 2011; Yeager, 2008; Mallon, 2015; Watson and Hatcher, 2021).

> "Try to distract them from what is actually aggravating them … okay let's go for a walk or let's go in the garden and play football" (nurse) (Backhouse et al., 2016).

3.3.2. Pharmacological interventions

In many studies, the use of psychotropic drugs were perceived as being beneficial for reducing behaviour that challenges, especially if non-pharmacological strategies had failed, or if the resident was reportedly in a very anxious or distressed state to the level it was considered to diminish the resident's quality of life (Janzen et al., 2013; Shaw et al., 2016; Simmons et al., 2018; Donyai, 2017; Kerns et al., 2018; Almutairi et al., 2018; Sawan et al., 2017; Smeets et al., 2014).

> "When it has gone so far as to need a calming tablet, then…I do it for his own good...as a last resort, when there is nothing left to do but to restrain him" (formal carer) (Isaksson et al., 2013).

In addition, psychotropic drugs were used if care home staff believed that a residents' behaviour posed a serious risk of harm to other residents or carers (Dupuis et al., 2012; Rapaport et al., 2018; Ostaszkiewicz et al., 2015; Smeets et al., 2014; Watson and Hatcher, 2021).

> "I try not to use medication...unless they're about to harm someone else, or their behaviour is really bad" (formal carer) (Yeager, 2008).

In contrast, care home staff also reflected that psychotropic drugs may be used as a "quick fix," to minimise disruptions and allow carers to complete their duties in a timely manner, particularly in task-based orientated care homes which prioritised completion of work tasks over relationships and social interaction with residents. Antipsychotic medications are a group of psychotropic drugs often used by care home staff to manage behaviour that challenges (Janzen et al., 2013; Isaksson et al., 2013; Donyai, 2017; Kerns et al., 2018; Almutairi et al., 2018; Sawan et al., 2017).

"When somebody yells at night...and antipsychotics are the only thing that's left,… people can't sleep because one person is yelling… you get a lot of pressure from some facilities [to do something about it]" (formal carer) (Simmons et al., 2018).

Table 3
Themes and sub-themes.

Themes	Sub-themes
"Putting out the fires"	Reactive strategies using a non-pharmacological approach
	Pharmacological interventions
	Physical restraint
Personhood, human rights and respect	Knowing the person not just the disease
	Causes of behaviours, associated with dementia
	Person focused support
Person focused approach – a paradigm shift	Changes in care home culture and staff attitudes
	Collaboration and equitable decision- making
	Training, education and knowledge
	Dementia friendly environment

Some care home staff also report using other classes of psychotropic drugs such as hypnotic drugs or anxiolytic drugs including benzodiazepines, to minimise the occurrence of disruptive behaviours (Mallon, 2015).

> "Yes, it would be convenience…they could be given diazepam to keep quiet…because, maybe, I think, that it's not enough time…it's sometimes easier to give a tablet" (nurse) (Shaw et al., 2016).

These drugs may also be used when a person-centred care approach would be more appropriate.

> "In place of zopiclone or temazepam, it could be repositioning them overnight, checking incontinence is cared for, that the room is comfortable, things like that" (nurse) (Shaw et al., 2016).

Indeed, in many studies, staff acknowledged that psychotropic drugs were easier to administer and faster acting than non-pharmacological interventions to de-escalate behaviour that challenges (Shaw et al., 2016; Gjerberg et al., 2013; van Wyk et al., 2017; Ostaszkiewicz et al., 2015; Walsh et al., 2018; van Teunenbroek et al., 2020).

One nurse reflects, "We [nurses] are very medicine prone, take a pill that makes it [agitation] better." (Janzen et al., 2013)

In another study nurses believed that the use of psychotropic drugs was acceptable to manage behaviour that challenges in residents with dementia as they perceived that these behaviours arise due to neurodegeneration (Watson and Hatcher, 2021). This is aligned with the neurobiological model that assumes behaviours that challenge are caused by brain dysfunction in people with dementia (Tascone and Bottino, 2013).

Moreover, a nurse in one study stated that residents were administered psychotropic drugs without their knowledge or consent, raising ethical concerns about human rights.

> "[We] put it [the sedation] in their meals...you know, some people you have to crush it…it's crucial that they get their meds, otherwise the aggression…[their challenging behaviours] just blows up." (nurse) (Ostaszkiewicz et al., 2015).

Care home staff acknowledge that they are aware of some of the adverse effects associated with the use of psychotropic drugs in dementia such as over-sedation (Kerns et al., 2018; Sawan et al., 2017; Watson and Hatcher, 2021).

> "Sometimes they are so overmedicated and are like zombies" (nurse) (van Wyk et al., 2017).

Care home staff also express concerns regarding the increased risk of falls (Kerns et al., 2018) or the adverse effects of polypharmacy (Mallon, 2015). Therefore, staff highlighted the need to monitor the effects of psychotropic drugs when used in people with dementia (van Teunenbroek et al., 2020; Rosenthal et al., 2020). However, care home staff may not be aware of the full spectrum of adverse drug effects since they fail to mention, in any study, the increased risk of stroke and death, associated with psychotropic drug use in dementia.

Furthermore, four studies explored the impact of regulation on prescribing psychotropic drugs to care home residents with dementia (Kolanowski et al., 2010; Walsh et al., 2018; Rosenthal et al., 2020; Smeets et al., 2014). In studies conducted in the US (Rosenthal et al., 2020) and the Netherlands (Smeets et al., 2014) staff acknowledged that state regulations were beneficial in reducing rates of antipsychotic prescribing and a catalyst for improvements in the quality of care. However, staff also noted that regulatory requirements focused purely on reducing use of antipsychotic medications fail to consider the complexities of prescribing decisions (Rosenthal et al., 2020).

In addition, care home staff in Ireland were critical that psychotropic drugs prescribed to residents on a Pro re nata (PRN), given when needed basis, are reportable to Health Information and Quality Authority (HIQA) while psychotropic drugs prescribed on a regular basis are not reportable (Walsh et al., 2018). Therefore, this may result in increased prescribing of psychotropic drugs to residents with dementia, as one nurse explains,

> "What some nursing homes do is, if somebody was on a PRN psychotropic, because the resident might only need it once or twice per month and because it becomes reportable, they get prescribed regularly" (Walsh et al., 2018).

3.3.3. Physical restraint

Care home staff also report using physical restraint to manage behaviour that challenges. Physical restraint refers to restricting the movements and behaviours of people with dementia. Methods include locking doors or using belts, restraining chairs and bedrails to restrict movement. The use of surveillance technologies to monitor movements, is also described as a physical restraint. Physical restraint is often cited as a last resort for managing behaviour that challenges, only to be used when all other options fail (Duxbury et al., 2013; Gjerberg et al., 2013; Backhouse et al., 2018; Foley et al., 2003; Hantikainen, 2001; Kutsumi et al., 2009; Ragneskog and Kihlgren, 1997; van Teunenbroek et al., 2020; Yeager, 2008).

> "You have to have tried a PRN [prescribe when needed medication] before you get to [physical] restraint" (nurse) (Ostaszkiewicz et al., 2015).

Moreover, care home staff may resort to using physical restraint because they could no longer tolerate the behaviour of the resident with dementia. This highlights issues regarding the attitudes of staff and human right concerns.

> "After the fifth day I begin to feel that I can no longer put up with this and…I will prefer to tie her down rather than let her walk around and have a go at the others" (formal carer) (Hantikainen, 2001).

Surveillance technologies were often used to monitor residents. These technologies included wander mats and pressure mats that set off an alarm when stood on. Controversially, residents were not always aware that they were being observed (Yeager, 2008; Backhouse et al., 2018). This practice of covert observation violates the human rights of residents in care homes.

3.4. Theme: personhood, human rights and respect

3.4.1. Knowing the person not just the disease

Many care home staff highlighted the importance of valuing the person with dementia and taking a holistic approach to understanding and knowing the person with dementia. (Rapaport et al., 2018).

> "You have to get to know the patient as an individual, as a person, not as an illness or a risk factor" (manager) (Duxbury et al., 2013).

Study findings indicate that knowledge of the residents' personal history comes from family and friends. This knowledge is essential to build trusting relationships and facilitate social interactions between staff and residents, in addition to understanding the behaviours characteristic of the individual, for example residents may be inherently anxious; this knowledge will alert staff to changes in behaviours that may be uncharacteristic of the resident and may therefore, arise in response to specific situations, the environment or an unmet need (Snellgrove et al., 2015; Shaw et al., 2016; Yeager, 2008; Rapaport et al., 2018; Herron and Wrathall, 2018; Clifford and Doody, 2018; Foley et al., 2003; Kolanowski et al., 2010; van Wyk et al., 2017; Ostaszkiewicz et al., 2015; Kolanowski et al., 2015; Smeets et al., 2014; Duxbury et al., 2013; Watson and Hatcher, 2021).

3.4.2. Causes of behaviours, associated with dementia

Knowing behaviours characteristic of the individual is therefore crucial to identify the causes for behaviour that challenges. This facilitates implementation of a sustainable non-pharmacological response to manage behaviour that challenges. Commonly cited causes for aggression and agitation include invasion of privacy during personal care and being given instructions as to when to get up, eat meals and go to bed (Yeager, 2008; Rapaport et al., 2018; Skovdahl et al., 2003; Ragneskog and Kihlgren, 1997).

"Aggression can be the result of…invading personal space, being told you have to come to the table to eat, we do give quite a lot of orders" (care assistant) (Duxbury et al., 2013).

The unmet needs hypothesis suggests that behaviour that challenges may arise from an unmet need that cannot be verbally expressed (Cohen-Mansfield, 2000; Cohen-Mansfield et al., 2015). In many studies, staff explain that behaviour that challenges may arise in response to pain, constipation, urinary tract infection or hunger or thirst (Rapaport et al., 2018; Zeller et al., 2011; Walsh et al., 2018; Almutairi et al., 2018; Mallon, 2015; Rosenthal et al., 2020; Ragneskog and Kihlgren, 1997; Watson and Hatcher, 2021). Therefore, it is essential that care home staff should aim to understand the causes of residents' behaviours and identify non-verbal cues (Watson and Hatcher, 2021). This will ensure that needs are met to minimise the occurrence of behaviour that challenges (Smeets et al., 2014) however, this does not always happen in practice.

"They [certified nursing assistants] don't seek to understand the behaviour, they just try to address it and that's when you come up on failure because you don't really understand what's causing that behaviour" (formal carer) (Snellgrove et al., 2015).

3.4.3. Person focused support

Care home staff in many studies express how people with dementia should be supported to maintain their capabilities and engage in meaningful activities referred to, in this review, as person focused support.

A carer describes how she applied her knowledge of the resident to provide person focused support aimed at maintaining the abilities and skills of the person with dementia.

"We have other residents who don't talk a whole lot, but you put them in front of the piano, and they can play beautifully; without errors; without looking at anything; just by memory" (formal carer) (Yeager, 2008).

In addition, person focused support was incorporated into the care plans of residents with dementia to enhance their sense of identity, self-esteem and independence (Backhouse et al., 2016; Snellgrove et al., 2015; Yeager, 2008; Rapaport et al., 2018; Clifford and Doody, 2018; Kolanowski et al., 2010; Mallon, 2015; van Wyk et al., 2017; Rosenthal et al., 2020) to facilitate a non-pharmacological approach to manage behaviour that challenges.

"I had a resident who was a farmer and very withdrawn ... not engaged in life, had lost meaning and purpose but by engaging him in therapeutic activities of just gardening…gave him a sense of identity again" (formal carer) (Kolanowski et al., 2010).

However, it was reported that residents with behaviour that challenges were excluded from taking part in activities, even though their participation may have been helpful in reducing these behaviours

"[Care staff are] more willing to help people that...have got their full faculties…so I think some dementia people do get mistreated…just like neglected with activities" (care worker) (Backhouse et al., 2016).

One of the reasons for this may be that residents with dementia require a higher degree of support to safely participate in activities (Backhouse et al., 2016; Robinson et al., 2007). Providing support requires a high staff to resident ratio impacting on care home finances. Hence, it may not always be feasible to provide one-to-one care without external financial support (Gjerberg et al., 2013; Rapaport et al., 2018; Sawan et al., 2017; Rosenthal et al., 2020).

3.5. Theme: person focused approach – a paradigm shift

3.5.1. Changes in care home culture and staff attitudes

Schein (1990) proposed that organisational culture is a pattern of shared basic assumptions developed by a group, including values, norms and attitudes. In the context of care home culture, many care home staff assume that psychotropic drugs are necessary, beneficial or convenient for managing behaviour that challenges and this reinforces their use, particularly in homes that prioritise task-orientated care (Snellgrove et al., 2015; Yeager, 2008; Rapaport et al., 2018; Mallon, 2015; Clifford and Doody, 2018; Kolanowski et al., 2010; Walsh et al., 2018). Hence, care home culture influences decision-making on the approach taken to behaviour management. This indicates that changes in care home culture are needed to effectively implement sustainable non-pharmacological strategies to manage behaviour that challenges.

While care home culture reflects group norms, personal attitudes of staff are individually held beliefs, cognitions and associated emotions (Eagly and Chaiken, 1993) that vary widely between individual staff members.

"One is interested….is there another approach? Someone else might think: Do I care? I work here and that's it…I think there are a lot of differences between colleagues" (nurse) (van Teunenbroek et al., 2020).

In the context of managing behaviour that challenges, individual staff members evaluate the positive and negative consequences of their actions. Evaluations are influenced by past experiences and give rise to a pre-disposition to act in a certain way when managing behaviour that challenges (Rosenthal et al., 2020; Watson and Hatcher, 2021), corresponding with the multicomponent approach model (Eagly and Chaiken, 1993). For instance, staff explained how they were fearful of the consequences of harm for colleagues if they did not take a pharmacological approach to manage aggressive behaviour (Rosenthal et al., 2020). While, in a different study, staff believed that non-pharmacological strategies such as distraction techniques, would only have transient effectiveness in managing behaviours that challenge.

"Distraction cannot continue the whole day [as] the agitation starts after the activity is over" (nurse) (Watson and Hatcher, 2021).

Therefore, the findings show that staff attitudes influence decision-making whether to implement a pharmacological or non-pharmacological approach to manage behaviour that challenges.

3.5.2. Collaboration and equitable decision-making

Studies indicate that nurses are the main decision-makers regarding using a pharmacological approach to manage behaviour that challenges (Shaw et al., 2016; Yeager, 2008; Mallon, 2015; Ostaszkiewicz et al., 2015; Simmons et al., 2018; Walsh et al., 2018). In several studies, staff suggest that care assistants should be more involved in decisions due to their in-depth knowledge of residents and responsibility for implementing non-pharmacological interventions (Kolanowski et al., 2015; Rosenthal et al., 2020). However, this did not always occur, as a manager explains,

> "I wonder how much the aides are involved in [decision-making], it tends to be more department head staff…so I think maybe we need to...gather information from the aides because, again, they're the ones dealing with it directly" (manager) (Kolanowski et al., 2015).

Indeed, many studies, describe how communication and multidisciplinary collaboration between nurses, care assistants, managers and other healthcare professionals is inadequate (Shaw et al., 2016; Rapaport et al., 2018; Mallon, 2015; Foley et al., 2003; Simmons et al., 2018; Sawan et al., 2017; Kolanowski et al., 2015).

> "We are actually never present at such meetings [multidisciplinary consultation] It would be relevant if we'd be present there, because we work in the evenings, we work at night, the weekend" (formal carer) (van Teunenbroek et al., 2020).

To improve collaboration staff indicated that they needed organisational support and effective leadership to promote a team-based approach to implementing non-pharmacological strategies to manage behaviour that challenges (Zeller et al., 2011; Clifford and Doody, 2018). However, several staff members have been critical of the support that they have received from managers, stating that they do not feel valued or included as equal team players with senior staff (Rapaport et al., 2018; Sawan et al., 2017). Care staff also expressed how low wages, reduced staffing levels and antisocial working hours, impacted negatively on their motivation to deliver a non-pharmacological approach to manage behaviour that challenges (Rapaport et al., 2018).

In addition, communication between nurses and general practitioners (GPs) was found to be an important influence on decision-making whether to take a pharmacological approach to behaviour management (Shaw et al., 2016). Nurses described how GPs used the information that they provided about residents to inform prescribing decisions (Smeets et al., 2014). However, nurses also explained that individual GPs' attitudes to prescribing psychotropic drugs varied widely (van Teunenbroek et al., 2020). Moreover, it was suggested that some GPs lack adequate knowledge in managing behaviour that challenges in dementia, potentially resulting in inappropriate prescribing.

> "There are some GPs who are not well versed with the dementia… they prescribe anything and everything under the sun…I'll be saying that I don't think this is right for this person…but who are we to argue with the higher [prescribers]?" (Manager) (Shaw et al., 2016).

Therefore, GPs' attitudes towards prescribing, their knowledge in managing behaviour that challenges and the degree of shared decision-making, influences whether a pharmacological or non-pharmacological approach is used to support people with dementia.

3.5.3. Training, education and knowledge

In many studies, staff expressed how they used non-pharmacological strategies such as distraction techniques, to de-escalate behaviour that challenges, often with only transient benefits. Care home staff expressed how education in person-centred care and training in managing behaviour that challenges is crucial to enable implementation of sustainable non-pharmacological strategies to behaviour management (Rapaport et al., 2018; Clifford and Doody, 2018; Skovdahl et al., 2003; Kolanowski et al., 2010; van Wyk et al., 2017; Sawan et al., 2017; Ragneskog and Kihlgren, 1997; Kolanowski et al., 2015; van Teunenbroek et al., 2020; Rosenthal et al., 2020).

> "The unit employs several care assistants, who have no formal training, there really is a difference in awareness of using coercion" (formal carer) (Gjerberg et al., 2013).

In addition, the findings indicate that care home staff require further education to increase awareness of the full spectrum of adverse drug effects associated with psychotropic drugs use in dementia. This may prove beneficial in changing attitudes about the risk/benefit ratio associated with the use of these drugs and facilitate implementation of non-pharmacological strategies to manage behaviour that challenges (Gjerberg et al., 2013; Rapaport et al., 2018; Clifford and Doody, 2018; Skovdahl et al., 2003; Kolanowski et al., 2010; Ragneskog and Kihlgren, 1997; Kolanowski et al., 2015).

A care assistant succinctly states, "We are not supposed to know what it (psychotropic medicine) is or what it does, we're just people who give the medication" (Sawan et al., 2017).

In several studies, staff expressed how training aimed at improving communication skills with people with dementia, enhanced implementation of non-pharmacological strategies to support residents (Yeager, 2008; Clifford and Doody, 2018; Kolanowski et al., 2010; Kolanowski et al., 2015).

> "Before I had the training, I would just pick up and go, but now I know you have to first tell the person what you are going to do, not just go ahead and do it" (formal carer) (van Wyk et al., 2017).

In addition, care home staff explain that the best training for managing behaviour that challenges is "hands on" work experience (Clifford and Doody, 2018; van Wyk et al., 2017).

> "Being there, dealing with it, doing it, is the best training" (care assistant) (Rapaport et al., 2018).

3.5.4. Dementia friendly environment

The environmental vulnerability/reduced stress-threshold model assumes that people with dementia have a lower threshold for tolerating stress associated with environmental stimuli, resulting in behaviour that challenges (Cohen-Mansfield, 2001). Indeed, staff acknowledged that environmental factors may trigger behaviour that challenges, thereby providing support for the environmental vulnerability/reduced stress-threshold model.

> "Factors such as noise, movement, congestion, temperature, and lighting were all identified as "triggers"" (formal carer) (Herron and Wrathall, 2018).

In addition, increased movement of staff during shift changes heightened agitation and exit seeking behaviour in residents with dementia (Herron and Wrathall, 2018). Two studies also highlighted how the design of the lounge area in care homes may trigger behaviour that challenges (Rapaport et al., 2018; Herron and Wrathall, 2018).

> "There's a lot of people there, the TV's on, there's a lot of stimuli...you get kind of arguments going on" (nurse) (Herron and Wrathall, 2018).

Changes in the care home environment may be beneficial in facilitating a non-pharmacological approach to reduce behaviour that challenges (Yeager, 2008; Backhouse et al., 2018; Rapaport et al., 2018; Mallon, 2015; Herron and Wrathall, 2018; Simmons et al., 2018; Walsh et al., 2018; Ragneskog and Kihlgren, 1997; Rosenthal et al., 2020), for instance, smaller lounges and the use of a circular corridor to support movement of residents. In addition, staff highlighted the

importance of making the care home as homelike and peaceful as possible to minimise behaviour that challenges (Skovdahl et al., 2003). One way to achieve this was to personalise residents' bedrooms with furniture, ornaments and photographs from their own home.

> "Their room should be as near as it was at home…to make them feel secure and comfortable" (formal carer) (Mallon, 2015).

4. Discussion

The first theme emerging from the synthesis, "Putting out the fires" demonstrates that care home staff approaches to managing behaviour that challenges are often reactive strategies, adopted to de-escalate potential crisis situations. Reactive strategies, for example, distraction techniques (Backhouse et al., 2016; Dupuis et al., 2012; Duxbury et al., 2013; Snellgrove et al., 2015; Shaw et al., 2016; Yeager, 2008; Gjerberg et al., 2013; Backhouse et al., 2018; Rapaport et al., 2018; Mallon, 2015; Zeller et al., 2011), may only have short-term benefits because they do not attempt to understand the causes of behaviour that challenges (Rapaport et al., 2018). This corresponds with the "Need-driven dementia-compromised behaviour model" (Algase et al., 1996) or the "Unmet needs model" (Cohen-Mansfield, 2001) which postulate that behaviour that challenges arise in response to an unmet physical, psychological or emotional need that cannot be verbally expressed. Indeed, research by Caspar et al. (2017) found that relationships between staff and residents are integral for understanding the needs of residents with dementia. In this review, staff described their experiences of behaviour that challenges and the importance of developing trusting relationships with residents in order to implement effective strategies to manage these behaviours (Duxbury et al., 2013; Rapaport et al., 2018). For instance, staff expressed how knowing the resident well and understanding the residents' personal history enabled identification of the causes for behaviour that challenges (Duxbury et al., 2013; Yeager, 2008; Rapaport et al., 2018; Skovdahl et al., 2003; Ragneskog and Kihlgren, 1997). Therefore, rectifying the underlying causes for these behaviours, facilitated implementation of a non-pharmacological approach to behaviour management, for example, attempting to resolve an unmet need such as pain, illness or physical discomfort. Alternatively, behaviours that challenge may arise due to a specific environment or situation such as invasion of privacy during personal care or being given orders of when to eat or go to bed (Duxbury et al., 2013; Yeager, 2008; Rapaport et al., 2018; Skovdahl et al., 2003; Ragneskog and Kihlgren, 1997). These findings are aligned to the philosophy of person-centred care, developed by Kitwood (1997). In the context of person-centred care, social psychology refers to the significance of the relationship between the carer and person with dementia (Kitwood, 1997). Kitwood refers to social malignancy as the behaviours of carers that devalue and de-humanise the person with dementia (Kitwood, 1997). The findings of this review indicate that social malignancy is still prevalent as staff describe using psychotropic drugs as a "quick fix" to manage behaviour that challenges for convenience or to complete tasks in a timely manner (Janzen et al., 2013; Shaw et al., 2016; Gjerberg et al., 2013; Rapaport et al., 2018; Mallon, 2015; Kolanowski et al., 2010; van Wyk et al., 2017; Ostaszkiewicz et al., 2015; Simmons et al., 2018; Walsh et al., 2018; Kerns et al., 2018) posing a barrier to implementing non-pharmacological approaches to behaviour management.

Moreover, Walsh et al., (2017) found that care home staff may use psychotropic drugs to manage behaviour that challenges because they are unaware of the serious side effects, associated with the use of these medications in dementia. Indeed, the findings of this review support this, as it has been demonstrated that care home staff vary in their degree of awareness of the adverse effects of psychotropic drugs, and this influences the approach adopted to behaviour management. For instance, although some care home staff cited increased risks of sedation and falls associated with psychotropic drugs (Mallon, 2015; van Wyk et al., 2017; Simmons et al., 2018; Kerns et al., 2018), none of the care staff mentioned increased risks of stroke and death. These findings are comparable to another study which found that care home staff have limited knowledge of the adverse effects of psychotropic drugs in people with dementia (Smeets et al., 2014). Education to raise awareness among staff of the adverse effects associated with psychotropic drugs may facilitate a non-pharmacological approach to behaviour management, hence, further research in this area is required.

A second theme "Personhood, human rights and respect" focuses on the value of people with dementia. Some care home staff are embracing a paradigm shift in attitude that views people with dementia as unique individuals with abilities and skills. The concept of personhood can be traced to Kitwood and Bredin (1992), who refer to "positive persons work" as the care given to people with dementia that provides love, comfort, secure attachment, a sense of inclusion, usefulness, value, identity and occupation. The findings of this review provide evidence that many care home staff provide comfort and reassurance which are shown to reduce behaviour that challenges (Snellgrove et al., 2015; Isaksson et al., 2013). However, staff suggest that people with dementia are sometimes being excluded from participating in meaningful activities, likely to be beneficial in reducing behaviour that challenges (Backhouse et al., 2016). Reasons for this include inadequate staff levels and financial constraints (Shaw et al., 2016; van Wyk et al., 2017; Simmons et al., 2018; Walsh et al., 2018; Sawan et al., 2017).

This review has also found that residents are often coerced to participate in care routines resulting in behaviour that challenges (Duxbury et al., 2013; Yeager, 2008; Rapaport et al., 2018; Skovdahl et al., 2003; Ragneskog and Kihlgren, 1997). These findings are supported by Harmer and Orrell (2008) who found that organisational limitations in care homes result in coercion of residents to participate in activities of little interest, thereby increasing behaviour that challenges. Also, Green and Cooper (2000) noted that care routines often take precedence over relationships with residents. Moreover, in another study it was observed that generic care of residents took precedence over personalised care due to limitations in time and resources (Hennelly and O'Shea, 2021). These findings contrast with the VIPS framework, for implementing person-centred care proposed by Brooker (2015). VIPS is defined as (V) valuing persons with dementia; taking an (I) individualised approach; understanding the (P) perspective of the person with dementia; providing (S) supportive social environments to maintain relationships (Brooker and Latham, 2015). Moreover, in this review, synthesise of staff experiences of behaviour management indicates that lack of choice and autonomy (Duxbury et al., 2013; Yeager, 2008; Rapaport et al., 2018; Skovdahl et al., 2003; Ragneskog and Kihlgren, 1997) and exclusion of residents from participating in meaningful activities of interest (Backhouse et al., 2016) impairs implementation of non-pharmacological strategies to manage behaviour that challenges.

This review recommends that guidelines such as the NICE guideline on Dementia [NG97] (2018) (National Institute for Health and Care Excellene, 2018) and the Alzheimer's Association Dementia Care Practice Recommendations (2018) (Fazio and Pace, 2018), in addition to national dementia strategies, incorporate person focused support into person-centred care plans. Person focused support is defined in this review as the support given to a person with dementia to enable them to participate in activities tailored to their individual interests to maintain their self-esteem and identity. This is an important aspect of person-centred care that is poorly implemented in practice as shown in this review, despite being recommended in Kitwood's vision of person-centred care (1997).

The final theme to emerge from our findings, indicates that care home culture influences decision-making regarding the approach taken to manage behaviour that challenges. Changes in care home culture will require moving away from group values and norms that assume that psychotropic drugs are acceptable, necessary, beneficial or convenient for managing behaviour that challenges (Snellgrove et al.,

2015; Yeager, 2008; Rapaport et al., 2018; Mallon, 2015; Clifford and Doody, 2018; Kolanowski et al., 2010; Walsh et al., 2018) to adopt group values that promote relationships between staff and residents in a home-like environment (Duxbury et al., 2013; Rapaport et al., 2018; Mallon, 2015; Skovdahl et al., 2003). To achieve culture change and facilitate a non-pharmacological approach, the findings suggest that resources and effective leadership will be required to empower staff by providing training, collaboration and decision-making opportunities (Gjerberg et al., 2013; Rapaport et al., 2018; Zeller et al., 2011; Clifford and Doody, 2018; Sawan et al., 2017; Rosenthal et al., 2020). These findings support a study that identified care home culture as a key determinant in whether a non-pharmacological approach is taken (Roberts et al., 2015).

In addition, the findings indicate that staff attitudes influence decision-making regarding behaviour management (Skovdahl et al., 2003; van Teunenbroek et al., 2020; Rosenthal et al., 2020; Watson and Hatcher, 2021). For instance, staff decided to use a pharmacological approach to de-escalate aggressive behaviour because they felt fearful of the potential risk of harm to colleagues (Rosenthal et al., 2020). In a different scenario, staff decided not to opt for a non-pharmacological approach to behaviour management because they believed it would not be effective long term (Watson and Hatcher, 2021). Moreover, some nurses believe that behaviour that challenges arise due to cognitive decline in dementia and requires a pharmacological response (Watson and Hatcher, 2021). This corresponds with neurobiological theories that assume behaviour that challenges, associated with dementia are a consequence of brain dysfunction (Tascone and Bottino, 2013).

Furthermore, some staff perceived that they were not supported or valued in their role, and this reduced their motivation to develop relationships with residents or deliver person-centred care (Rapaport et al., 2018; Sawan et al., 2017). Therefore, attitudes of staff may increase the propensity to use a pharmacological approach to behaviour management. To facilitate a non-pharmacological approach staff attitudes, need to be addressed. Little research has been conducted in this area although one study exploring nurses' attitudes to dementia in six care homes in India found that nurses lacked specific knowledge in dementia care (Strøm et al., 2021). This corresponds with the findings from this review which suggests that training in person-centred care and adverse drug effects, associated with the use of psychotropic drugs in dementia will assist in changing staff attitudes and facilitating non-pharmacological strategies to behaviour management (Gjerberg et al., 2013; Rapaport et al., 2018; Clifford and Doody, 2018; Skovdahl et al., 2003; Kolanowski et al., 2010; Sawan et al., 2017; Ragneskog and Kihlgren, 1997; Kolanowski et al., 2015). These findings are comparable to the review by Walsh et al. (2017) which found that inadequate training in person-centred care, was a determinant in using antipsychotic drugs to manage behaviour that challenges in care home residents.

In addition, the findings of this review indicate that collaboration, teamwork (Zeller et al., 2011; Clifford and Doody, 2018), and equitable decision-making is often inadequate (Shaw et al., 2016; Mallon, 2015; Foley et al., 2003; Simmons et al., 2018; Sawan et al., 2017; Kolanowski et al., 2015). This lack of collaboration is therefore, a barrier to non-pharmacological approaches to support people with dementia. This review also highlights that care assistants are not adequately involved in decision-making despite having in-depth knowledge of residents (Dupuis et al., 2012; Sawan et al., 2017; Kolanowski et al., 2015). This corresponds with a recent study that explored how personalised care is implemented in care homes and found that communication between nurses and care assistants is often lacking (Hughes et al., 2019). Therefore, this review recommends that future research should also aim to understand how care assistants may contribute more to collaboration and decision-making, taking into consideration power differentials as this may influence whether a non-pharmacological approach is taken to manage behaviour that challenges.

4.1. Strengths and limitations of this review

A strength of this review is that it has addressed a gap in knowledge by conceptualising the strategies used by care home staff to manage behaviour that challenges. This knowledge is important to inform the development of dementia policy. However a limitation of this review is the risk of bias associated with the main reviewer's (EOD) personal experience as a family carer which may have influenced the interpretation of data. However, the researcher has maintained a reflexivity diary throughout the research process and documented the rationale for decisions taken.

5. Conclusions

This systematic review contributes to current knowledge by conceptualising understanding of the strategies used by care home staff to manage behaviour that challenges and the factors that influence decision-making on the approach taken to behaviour management. Training care home staff in managing behaviour that challenges and psychotropic medicine management will be important for changing care home culture and the attitudes of staff. Therefore, enabling implementation of sustainable non-pharmacological strategies to behaviour management. Also, person focused support should be incorporated into person-centred care plans to provide residents with meaningful activities. Moreover, staff should be empowered to participate in multidisciplinary collaboration and equitable decision-making. This knowledge is integral to develop evidence-based dementia policy such as the Alzheimer's Association dementia care practice recommendations and the NICE guideline on Dementia, in addition to national dementia strategies. Guidance will be beneficial in implementing sustainable non-pharmacological approaches to manage behaviour that challenges and improve care for residents with dementia.

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Appendix A. Supplementary data

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