JOURNAL OF LONG-TERM CARE

An Exploration of Care Home Staff's Perceptions Regarding Physical Activity Among Older Adults: A Qualitative Systematic Review

RESEARCH

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LSE Press

ABSTRACT

Context: Older adults residing in care home settings often require support from staff to take part in physical activity; however, limited information is available regarding how staff perceive physical activity among this population.

Objective: We aim to explore care home staff's perceptions of physical activity among older adults.

Method: A systematic review was conducted following the Joanna Briggs Institute (JBI) meta-aggregative approach to qualitative synthesis. Searches were completed in AMED, CINAHL, EMBASE, PsycINFO and MEDLINE. Peer-reviewed studies that used qualitative approaches to study how care home staff perceive physical activity were included. Methodological quality assessment used the JBI Critical Appraisal Checklist for Qualitative Research. Primary findings were extracted, assigned a level of credibility, then aggregated into categories and synthesised findings. Synthesised findings were given a confidence rating using the ConQual approach.

Findings: The qualitative synthesis included 25 studies. From these, 508 primary findings were extracted and supported findings were grouped into 38 categories. Categories formed eight synthesised findings: 1) resident's individualised needs, preferences and experiences, 2) perceived benefits of physical activity for residents, 3) perceived risks of physical activity for residents, 4) the role of care home staff in physical activity promotion, 5) support from others, 6) environmental influences, 7) organisational influences, and 8) motivational and sustainable physical activity.

Limitations: A low confidence rating was assigned to all synthesised findings due to dependability and credibility issues across the studies which may limit ability to inform policy and practice decisions. Not all studies underwent critical appraisal and data extraction by two reviewers. Grey literature was excluded; therefore, some relevant information may have been missed.

Implications: Based on care home staff's perceptions, adult social care policies should ensure care homes have sufficient resources to plan and develop personalised physical activity strategies which address the diverse needs and preferences of residents. At a practice level, collaborative, strength-based approaches are required to provide personalised physical activity approaches which are acceptable to older adults and care home staff. Embedding physical activity promotion into each care home's organisational structures and support systems may be beneficial.

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KEYWORDS:
care homes; exercise; long-term care; physical activity; staff; systematic review

TO CITE THIS ARTICLE:
Hallam F and Lewis S. 2022. An Exploration of Care Home Staff's Perceptions Regarding Physical Activity Among Older Adults: A Qualitative Systematic Review. *Journal of Long-Term Care,* (2022), pp. 244–267. DOI: https://doi.org/10.31389/jltc.132

BACKGROUND

Physical activity (PA) is defined as any movement of the body that leads to energy expenditure (Caspermen, Powell & Christenson 1985). PA has numerous preventative benefits for older adults, including reduced risk of mortality, certain cancers, fractures, falls, frailty, dementia, and depression (Apóstolo et al. 2018; de Labra et al. 2015; Sherrington et al. 2019). Consequently, PA promotion is a central component of public health promotion in older age. The Department of Health and Social Care (DHSC 2019a) PA guidelines recommend older adults in the UK take part in daily PA, minimise sedentary behaviour, and complete strength and balance activities at least twice weekly. Although completing 150 minutes of moderate intensity or 75 minutes of vigorous intensity PA per week optimises health benefits, any activity completed daily is better than none, and people who are very inactive can attain health improvements by participating in lower-intensity PA for shorter durations (Public Health England 2018).

Care homes are facilities which provide accommodation and some level of assistance with activities of daily living (Sanford et al. 2015). Despite the known benefits of PA, PA levels in care homes for older adults are low (Mc Ardle et al. 2021). As care home residents require support with everyday activities, care home staff have a key role to play in supporting PA. Care staff can encourage and motivate residents to take part in activities and have been described as 'gate-keepers' who share accountability for the perception of PA as beneficial among older adults with dementia (Booth et al. 2019; Maurer et al. 2019). However, staff often receive no training about PA, which can affect residents' confidence in staff competence and reduce PA participation (Maurer et al. 2019; Smit et al. 2017). High workloads may also limit opportunities to support PA (Benjamin et al. 2014; Douma et al. 2017; Smit et al. 2017). Despite their critical role, it is unclear whether staff view these as the most pertinent factors affecting PA promotion. Understanding care home staff perceptions may aid understanding of important considerations for optimising PA promotion in this setting.

Previous systematic reviews have focussed on care home residents' perceptions of PA and the influence of the care home environment (Douma et al. 2017; Maurer et al. 2019). However, no systematic reviews have addressed care home staff's perceptions. This qualitative systematic review therefore aims to explore care home staff's perceptions regarding PA among older adults in care homes. The findings will generate insights into how care home staff can be supported in their role as supportive referents of PA and to develop recommendations to inform future policy and practice in care home settings.

METHODS

The JBI methodology for systematic reviews of qualitative evidence was followed and a meta-aggregation approach to evidence synthesis was used (Lockwood et al. 2020). Reporting was guided by the Enhancing Transparency in Reporting the Synthesis of Qualitative Research (ENTREQ) statement and is provided as an additional file (Tong et al. 2012). The review protocol was registered with PROSPERO (registration number CRD42021241396). Ethical approval was granted by the University of Nottingham's Division of Epidemiology and Public Health Ethics Committee.

SEARCH STRATEGY

A pre-planned search strategy was developed to identify published peer-reviewed studies. Initial scoping searches were completed to develop and refine inclusion and exclusion criteria. The criteria were structured using the PiCoS (Population, phenomenon of Interest, Context, Study design) mnemonic as described in Table 1.

AMED, CINAHL, EMBASE, PsycINFO and MEDLINE were searched from April–May 2021. These databases were selected because they relate to health professions which commonly support the care of older residents. All searches were undertaken using a three-phase search strategy. As a first step, an initial search using key words derived from the PICoS components was conducted in EMBASE to identify relevant articles. Titles, abstracts, and index terms used within the identified studies were examined to discover additional key words and develop a tailored search strategy for each database. Secondly, keywords and index terms were searched in each database. The search strategy used in MEDLINE is provided as an example as an additional file. Finally, citation searches were undertaken using Web of Science. Forward and backwards citation searching of all studies eligible for inclusion and of systematic reviews exploring similar topics was conducted. The reference lists of randomised controlled trials investigating the effectiveness of PA interventions in care homes were also screened to identify any associated studies exploring staff experiences of the intervention.

SCREENING

Identified citations were imported into an EndNote X9 library. Duplicates were removed manually. One reviewer (FH) assessed titles and abstracts of studies against the eligibility criteria. Full texts were then independently screened for inclusion by two reviewers (FH, SL) and any disagreements were resolved through discussion.

APPRAISAL

The methodological quality of included studies was assessed using the JBI Critical Appraisal Checklist for Qualitative Research (JBI 2020).The checklist enables assessment and scoring of confidence in findings based on ethical considerations, possible biases, methodological integrity, and congruency between the philosophical perspective, methodology, methods and research question (Lockwood et al. 2020; Munn et al. 2014). One reviewer (FH) critically appraised of all studies and the second reviewer (SL) assessed a selection. Both

	INCLUSION CRITERIA	EXCLUSION CRITERIA
(P)opulation	Residential or nursing care home staff or care providers in any job role working with older people in a care home setting. Studies using mixed population samples if data relating to the population of interest can be extrapolated.	Care home staff or providers working exclusively with adults aged below 65 years old. Studies that exclusively examined the perspectives of other stakeholders, such as care home residents or family members.
Phenomenon of (I)nterest	Perceptions, beliefs, views, experiences, attitudes, understanding, and perspectives of PA, exercise, or mobility as a form of PA among older adults. These synonyms were included based on terms identified through initial scoping searches and past definitions of perception (Given 2008). Broad terms were included to capture the multiple lenses through which staff view PA.	Perceptions, beliefs, views, experiences, attitudes, understanding, and perspectives of activity or mobility with no reference to PA or exercise.
(Co)ntext	Care home settings, including residential care, nursing care and assisted living accommodation, in any country	Home care, intermediate care, or hospital-based settings.
(S)tudy designs	Qualitative data from studies published in peer-reviewed journals utilising any qualitative study designs. Mixed methods designs were included if qualitative data was distinguishable from quantitative results.	Quantitative and review study designs.
Date or language criteria	No date or language restrictions were applied. Any non-English language studies that were identified but could not practically be translated were reported in the findings.	

Table 1 Inclusion and exclusion criteria.

reviewers discussed any disagreements or uncertainties to reach a consensus decision.

DATA EXTRACTION

An adapted version of the JBI QARI data extraction tool (2020) was used to extract relevant qualitative data from included studies. Both reviewers independently piloted the tool and further revised the adapted tool. One reviewer (FH) extracted data from the included studies and any uncertainties were discussed with the second reviewer (SL).

Study characteristics and authors' stated conclusions of relevance to the research question were extracted. Through repeated reading, findings, and accompanying illustrations, for example participant quotes, relating to the research question were extracted verbatim from themes described in the included studies. Each primary finding was given a credibility rating of unequivocal, equivocal, or unsupported based on its congruence with the corresponding illustration using the ConQual approach (Munn et al. 2014).

DATA SYNTHESIS

The JBI meta-aggregative approach to qualitative synthesis was followed to facilitate the development of pragmatic and actionable recommendations for policy and practice (Lockwood et al. 2020). Aggregation was an inductive process whereby findings were developed through comparison across the primary data from included studies to produce broader recommendations (Merriam & Tisdell 2015).

Using NVivo, unequivocal and equivocal findings with similar meanings were grouped into categories which were then aggregated into synthesised findings. Descriptions were developed to outline the collective meaning of each category and synthesised finding. Unsupported findings were not included in the synthesis as recommended by the JBI approach (Lockwood et al. 2020). Categories and synthesised findings were discussed and checked with the second reviewer (SL).

The ConQual approach was used to assess confidence in synthesised findings (Munn et al. 2014). Each synthesised findings started with a ConQual ranking of 'high' and was downgraded to 'moderate', 'low', or 'very low' if dependability and credibility issues were identified from the methodological assessment of included studies and the level of credibility assigned to each finding.

FINDINGS

STUDY INCLUSION

The search results and reasons for exclusion of full text articles are outlined in a PRISMA flow diagram (Figure 1). Database searches identified 5232 studies, of which 3376 studies remained after duplicates were removed. A further 3241 studies were excluded at the title and abstract screening stage. A total of 42 studies full text papers were assessed, including the remaining 37 studies from the database searches, three studies identified from backwards citation searching of previous systematic reviews exploring PA in care homes, and two studies identified through forwards citation searching of included studies. In total, 26 studies were eligible for inclusion. One study was written in German and could not feasibly be translated therefore 25 studies were included in the qualitative synthesis.

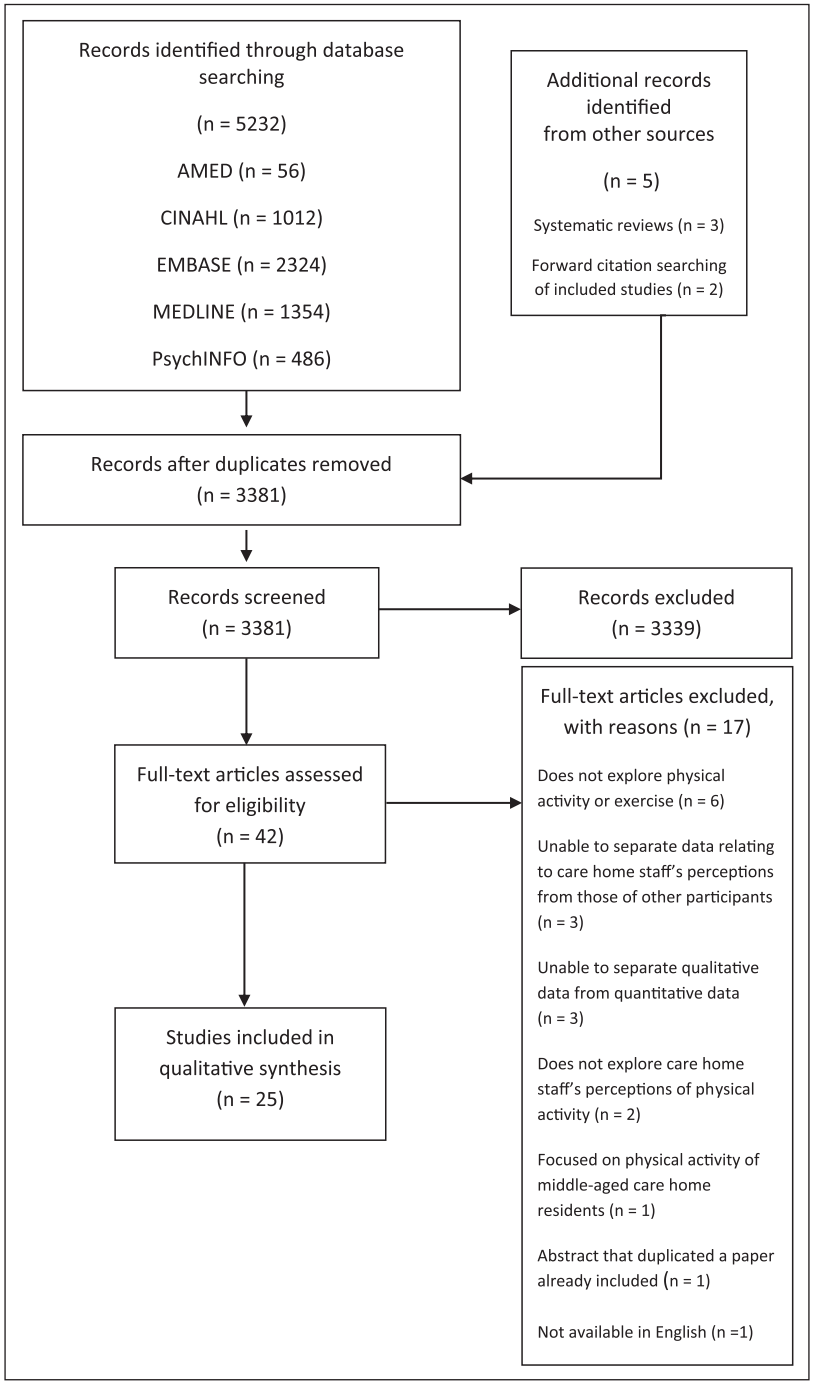

Figure 1 PRISMA flow diagram of search results.

APPRAISAL OF METHODOLOGICAL QUALITY

An overview of the methodological quality of included studies is presented in Table 2. Three studies were ranked as high quality and 22 studies were of medium quality. In most studies there was a clear link between the research question, interpretation of data, and authors' conclusions. However, many did not provide information about the underpinning philosophical perspective or methodological approach used. Consequently, assessment of congruity between methodology, research questions, and methods (questions 1–5) was difficult, and scores were based on the reviewers' judgement of the methodologies and methods that appeared to have been employed. Few studies included a statement about reflexivity and the researcher's own theoretical standpoint which may limit confirmability of the findings. Four studies (Baert et al. 2016; Baert et al. 2015; Resnick et al. 2008; Resnick et al. 2006) did not provide information regarding whether ethical approval had been sought or their rationale for not needing ethical approval.

CHARACTERISTICS OF INCLUDED STUDIES

A detailed overview of study characteristics is presented in Table 3. Studies were published between 2006 and 2021. Twenty-three studies were conducted in high-income countries. Two studies (Resnick et al. 2008; Resnick et al.

JBI CHECKLIST QUESTIONS	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	TOTAL
INCLUDED STUDY											
Altmeier, Thiel & Frahsa (2021)	Y	Y	Y	Y	Y	N	N	Y	Y	Y	8
Baert et al. (2016)	N	U	Y	N	Y	N	U	U	U	Y	5
Baert et al. (2015)	N	Y	Y	U	Y	N	U	U	U	Y	5.5
Benjamin et al. (2016)	Y	Y	Y	U	Y	U	N	U	Y	Y	7.5
Benjamin et al. (2011)	N	U	Y	Y	Y	N	N	Y	Y	U	6
Benjamin, Edwards & Caswell (2009)	N	U	Y	Y	Y	N	N	Y	Y	U	6
Brett et al. (2018)	N	Y	Y	Y	Y	N	N	Y	Y	Y	7
D'Cunha et al. (2020)	N	U	Y	Y	Y	U	N	Y	Y	Y	7
Ericson-Lidman & Strandberg (2015)	N	Y	U	Y	Y	N	U	Y	Y	Y	7
Frahsa et al. (2020)	U	Y	Y	U	Y	U	N	Y	Y	Y	7.5
Galik, Resnick & Pretzer-Aboff (2009)	N	U	Y	Y	Y	U	U	Y	Y	U	7
Gomaa et al. (2020)	N	U	Y	U	Y	U	Y	Y	Y	Y	7.5
Guerin, Mackintosh & Fryer (2008)	U	U	Y	Y	Y	U	N	U	Y	U	6.5
Hawkins et al. (2018)	N	Y	Y	Y	Y	N	N	Y	Y	Y	7
Kagwa et al. (2018)	N	U	Y	Y	Y	N	N	Y	Y	Y	6.5
Kim et al. (2016)	N	U	Y	U	Y	N	N	U	Y	Y	5.5
Post et al. (2020)	N	U	Y	Y	Y	U	N	Y	Y	Y	7
Raynor et al. (2020)	U	N	Y	Y	Y	N	N	Y	Y	Y	6.5
Resnick et al. (2008)	N	U	Y	Y	Y	N	U	U	U	U	5.5
Resnick et al. (2006)	N	U	Y	Y	U	U	U	Y	U	U	6
Saravanakumar et al. (2018)	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	9.5
Turpie et al. (2017)	U	Y	Y	Y	Y	N	N	Y	Y	Y	7.5
Underwood et al. (2013)	N	Y	Y	Y	Y	N	U	Y	Y	Y	7.5
Vikstrom et al. (2021)	Y	N	Y	Y	Y	U	U	Y	Y	Y	8
Wu et al. (2013)	N	Y	U	Y	Y	N	N	Y	Y	Y	6.5

Overall Quality Band
8–10 = High
5–7.5 = Medium
0 = 4.5 = Low

Key and scoring
Y = yes = 1
N = no = 0
U = unsure = 0.5

JBI critical appraisal checklist questions (JBI 2020)

1. Is there congruity between the stated philosophical perspective and the research methodology?
2. Is there congruity between the research methodology and the research question or objectives?
3. Is there congruity between the research methodology and the methods used to collect data?
4. Is there congruity between the research methodology and the representation and analysis of data?
5. Is there congruity between the research methodology and the interpretation of results?
6. Is there a statement locating the researcher culturally or theoretically?
7. Is the influence of the researcher on the research, and vice-versa, addressed?
8. Are participants, and their voices, adequately represented?
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?

Table 2 Critical appraisal of included studies.

2006) did not state which country they were conducted in. Twenty studies used qualitative methodologies and five used mixed methods approaches. Studies included care home staff in a variety of occupational roles such as care assistants, nurses, recreational activity staff, physiotherapy staff, managers, and executive staff. Fourteen studies targeted perceptions in relation to a specific PA intervention, whereas 11 studies explored staff perceptions of PA among older care home residents generally.

STUDY AND PUBLICATION YEAR	STATED METHODOLOGY	METHOD	SETTING	PARTICIPANTS	PHENOMENON OF INTEREST	DATA ANALYSIS METHOD	AUTHOR'S STATED CONCLUSIONS
Altmeier, Thiel & Frahsa. (2021)	Qualitative-Participatory action research	Photographs taken by participants, interviews and open-ended surveys and focus group discussions	8 nursing homes in Germany participating in a larger trial run by 4 different not-for-profit organisations	10 staff members (roles unspecified) 2 physiotherapists not employed by care home were classified as significant others	Physical activity generally Factors that facilitate or hinder residents' physical activity	Reflexive thematic analysis	'It is impossible to develop a nursing home concept promoting PA [physical activity] in a way that appeals to everyone to the same extent. Nevertheless, it is imperative to note that the expectations of professionals regarding activity triggers and barriers may differ significantly from aspects that trigger PA in residents. For this reason, an ongoing dialogue between staff and residents is an essential prerequisite for successful PA promotion programs' (p.16).
Baert et al. (2016)	Mixed methods-Triangulation	Semi-structured interviews for the qualitative phase	24 not-for-profit long-term care facilities in Belgium (15 private, 9 public)	24 administrators	Physical activity generally Factors affecting the organisation of physical activity for older care home residents	Qualitative content analysis	'Administrators of LTCFs [long-term care facilities] believe in the importance of PA, and they are mainly motivated to organize PA for the improvement or maintenance of health status and/or the general well-being of their residents' (p.83).
Baert et al. (2015)	Mixed methods-Exploratory sequential design	Semi-structured interviews for the qualitative phase	Long-term care facilities in Belgium (51% of participants worked in a private not-for-profit organisation, 40% in a public facility, and 9% in a private for-profit facility)	24 physiotherapists working at least 50% of the full-time equivalent in a long-term care facility	Physical activity generally Factors affecting the organisation of physical activity for older care home residents	Qualitative content analysis	'The PTs [physiotherapists] tend to agree more with motivators on the intra- and interpersonal level and are strongly motivated for organizing PA to enhance the physical and psychological wellbeing of the LTCF residents. The social interaction that arises between residents during PA sessions and the fact that the positive effect of PA helps to reduce the care burden of the colleagues are strong motivators on the interpersonal level. Motivators on the community level are the agreement that PA is the basis of their physiotherapeutic work and offering varied activities avoids PA becoming monotonous. Barriers on the intra- and interpersonal level were of less influence. On the community level, they felt hindered to organize PA because of the lack of time and the overload of paperwork' (p.378).
Benjamin et al. (2016)	Qualitative-Institutional ethnography	Observations, interviews and analysis of texts and policies	2 long-term care settings in Canada	11 observation periods of personal support workers 35 interviews with personal support workers and others (managers, educators, bureaucrats, residents).	Physical activity generally The social organisation of physical activity in care homes	Unspecified	'The key findings of this study expose how the discourses of activities of daily living organize exercise as separate, specialized work that is parceled out and resourced to experts. Under current conditions, there are few opportunities for PSWs [personal support workers] to include physical activity into their daily care—the social organization to support ordinary movement for LTC [long-term care] residents is not organized as integral to PSWs' work' (p.135).
Benjamin et al. (2011)	Qualitative-Unspecified	Focus groups-separate sessions with staff, residents, and significant others	12 care homes in Canada (6 non-profit, 6 for-profit)	62 staff members, roles not specified	Physical activity generally Factors influencing resident's physical activity levels	Content analysis	'All participants considered physical activity important to health preservation. Individual, structural, and environmental factors affected the quantity and quality of physical activity accessed by residents. These findings confirm the need to develop practical strategies and ways to address modifiable barriers and embed physical activity into long-term care systems of care' (p.247).

(Contd.)

STUDY AND PUBLICATION YEAR	STATED METHODOLOGY	METHOD	SETTING	PARTICIPANTS	PHENOMENON OF INTEREST	DATA ANALYSIS METHOD	AUTHOR'S STATED CONCLUSIONS
Benjamin, Edwards & Caswell. (2009)	Qualitative-Unspecified	Two-part interviews. Part 1- in the administrator's office Part 2- walking around the care home	9 care homes in Canada (3 profit making, 6 non-profit making)	9 administrators	Physical activity generally Perspectives regarding the concepts of exercise and physical activity, and whether physical activity is valued or facilities within their care home	Content analysis	'When staffing issues and problematic features of the built environment intersected, they created conditions that were less than optimal for residents' physical activity. Findings suggest that until there are adequate human and financial resources, it will be difficult to implement evidence-informed physical activity programs for residents in long-term care settings' (p.192).
Brett et al. (2018)	Qualitative-Interpretative description	Semi-structured interviews	2 nursing care homes in Canada participating in a RCT exploring effectiveness and feasibility of an exercise intervention	10 care home staff (3 nurses, 3 lifestyle and recreational officers, 2 direct care workers, 1 physical therapy assistant, 1 occupational health and safety representative)	Related to a specific physical activity intervention Views regarding an exercise intervention for residents with dementia aiming to improve agitation and physical performance	Thematic content analysis	'Physical exercise can be beneficial and feasible for individuals living with dementia in nursing care homes according to staff and family carers. Considering the views and opinions of the staff and family carers can encourage them to be involved in implementation of research into clinical practice' (p.95).
D'Cunha et al. (2020)	Mixed methods-exploratory	Semi-structured interviews for the qualitative phase.	1 high-care residential aged-care facility in Australia participating in a RCT	1 activity manager who facilitated an intervention	Related to a specific physical activity intervention Perceptions of a virtual cycling experience	Thematic analysis	'The participants and activity manager found the virtual cycling experience to be enjoyable, immersive and a positive authentic experience. Further development of local and personalised experiences that can be enjoyed in a small group environment with facilitation from care staff, fitness professionals, or family and friends should be considered in aged care settings' (p.14).
Ericson-Lidman & Strandberg (2015)	Qualitative-Participatory action research	Group intervention sessions	1 municipal residential care facility in Sweden	10–12 participants at each session, unclear if they were the same people each time. Nurses, nursing assistants and managers (numbers of each not provided)	Physical activity generally Worries about insufficient activity opportunities for residents	Content analysis	'Through sharing their experiences with each other, the care providers can increase their awareness of what constitutes meaningful activities for residents, and actions can be taken to provide such activities. It is important to continue discussing what meaningful activities are for each resident, independently of their cognitive functioning, and to be attentive to and rely on their responses' (p.223–24).
Frahsa et al. (2020)	Qualitative-Originally ethnography but was adapted to an exploratory approach due to COVID-19 restrictions	Semi-structured interviews, open-ended survey and analysis of documents	8 non-profit nursing homes in Germany participating in a larger physical activity study (3 urban, 5 rural)	12 executive staff (nursing home and care services managers) participated in interviews	Physical activity generally Impact of Coronavirus on physical activity from an organisational and sociological perspective	Reflexive thematic analysis	'it remains unclear which long-term impacts of COVID-19 on PA promotion in nursing homes are to be expected. At the practice level, executive staff in nursing homes that aim to promote PA within their organization should become aware that PA promotion needs to be incorporated into organizational structures to be implemented and continued in challenging times such as in a pandemic' (p.2).

(Contd.)

STUDY AND PUBLICATION YEAR	STATED METHODOLOGY	METHOD	SETTING	PARTICIPANTS	PHENOMENON OF INTEREST	DATA ANALYSIS METHOD	AUTHOR'S STATED CONCLUSIONS
Galik, Resnick & Pretzer-Aboff (2009)	Qualitative-Unspecified	Focus groups	1 nursing home for older people with cognitive impairments in the USA	7 nursing assistants	Related to a specific physical activity intervention Factors affecting residents' with cognitive impairment participation in restorative care activities	Content analysis	'Using a restorative care philosophy can help to maximize the available strengths of older adults with cognitive impairment and benefit their caregivers by "moving beyond behaviour". In so doing, these individuals will be able to achieve and maintain their highest level of physical function, to engage in clinically important levels of physical activity and to optimize quality of life' (p.54).
Gomaa et al. (2020)	Qualitative-Unspecified	Semi-structured interviews	1 high dependency residential aged care facility in Australia	7 participants who were involved in delivering or observed the intervention (1 dance instructor, 1 music therapist, 2 physiotherapists, 1 class assistant, 1 facility manager, 1 lifestyle program coordinator)	Related to a specific intervention Experiences of delivering a music-cued therapeutic dancing program consisting of 12 sessions over 8 weeks	Thematic analysis	'In residential aged care, music-cued therapeutic dancing was reported to be an engaging, beneficial, feasible, and enjoyable form of physical activity. Modifiable barriers to successful implementation included the cost of employing more staff, perceived risks for residents, a workplace culture embracing physical activity, strong management buy in, dedicated space, equipment and staffing, and systems to enable residents to enrol in classes and assist them to the class location and consideration of resident preferences and input into musical selections. Nonmodifiable barriers pertained to the physical space available, resident comorbidities, and dedicated funding. Of note, very old people with frailty or dementia were able to participate in dance, affording joy despite this debilitating disease' (p.418).
Guerin, Mackintosh & Fryer (2008)	Qualitative-Unspecified	Focus groups	1 residential care facility in a metropolitan location in Australia	5 nurses and 3 carers in the nurses focus group 2 physiotherapists, 2 physiotherapy assistants, 1 occupational therapist, and 3 occupational therapy assistants in the therapists focus group	Related to a specific physical activity intervention Factors influencing participation in exercise classes supervised by physiotherapy assistants in the care home setting	Thematic analysis	'Recommendations to enhance exercise class participation include careful consideration of: class scheduling; class location; social aspects associated with exercise classes; support of social networks and health providers; health issues perceived to limit exercise; and marketing of classes' (p.111).

(Contd.)

STUDY AND PUBLICATION YEAR	STATED METHODOLOGY	METHOD	SETTING	PARTICIPANTS	PHENOMENON OF INTEREST	DATA ANALYSIS METHOD	AUTHOR'S STATED CONCLUSIONS
Hawkins et al. (2018)	Qualitative-Ethnography	Observations, ethnographic conversations and interviews	2 residential care homes in the UK taking part in a larger programme of research (1 owned by the local authority and specialised in dementia care. 1 privately owned by a large, international company and cared for residents with varying physical disabilities)	8 staff (2 managers, 1 assistant manager, 2 senior care assistants, 3 care assistants)	Physical activity generally Perceptions regarding residents' routine patterns of movement, and how these are shaped by organisational influences within the care home	Grounded theory approach	'This study has highlighted how the management processes, staff training and supervision, and care planning processes shaped residents' movement in care settings. Understanding how organisational factors shape routine movement amongst residents will inform the development of embedded and sustainable interventions that aim to enhance physical activity or reduce sedentary behaviour in care home settings' (p.1839).
Kagwa et al. (2018)	Qualitative -Unspecified	Semi-structured interviews	7 care homes in Canada participating in the larger research study (5 supportive living homes, 2 long-term care homes. 5 not-for-profit, 2 for-profit)	7 healthcare assistants	Related to a specific physical activity intervention Experiences of healthcare aides supporting residents with a sit-to-stand intervention and the strategies they used to incorporate the intervention into daily work routines	Qualitative content analysis	'Some HCAs [healthcare aides] reported encouragement from managers (either Registered Nurses or Licensed Practical Nurses) and resident cooperation to complete the sit-to-stand activity; however, HCAs also felt time constraints and workload demands, and they felt misunderstood and disrespected. HCAs identified several strategies that helped them to integrate the sit-to-stand activity into their daily routines' (p.8).
Kim et al. (2016)	Qualitative-Unspecified	Semi-structured interviews	13 nursing homes in South Korea (5 large, 8 small)	31 nurses	Physical activity generally Nurses' clinical decision making regarding maintaining residents' function	Content analysis	'The themes reflected positive views on the residents' functional abilities and the NH [nursing home] nurses' perception that their goal was to help residents achieve their highest level of independence' (p.1326).
Post et al. (2020)	Qualitative-Unspecified	Semi-structured interviews	2 metropolitan residential care facilities in the same organization in Australia	15 care staff, roles unspecified	Related to a specific physical activity intervention Experiences of an individualised exercise programme for residents with dementia delivered by exercise physiologists	Content analysis	'Taking a person-centred approach, and incorporating the skill of trained EPs [exercise physiologists], as part of a multidisciplinary team, can provide benefits for residents with dementia in a residential aged care facilities with respect to physical, cognitive, and social factors' (p.2162).

(Contd.)

STUDY AND PUBLICATION YEAR	STATED METHODOLOGY	METHOD	SETTING	PARTICIPANTS	PHENOMENON OF INTEREST	DATA ANALYSIS METHOD	AUTHOR'S STATED CONCLUSIONS
Raynor et al. (2020)	Mixed methods-exploratory approach	Semi-structured interviews for the qualitative phase	Not clearly stated, appears to be 1 residential aged care home in Australia	6 facility staff members (2 physiotherapists, 3 personal care assistants, 1 manager) 2 accredited exercise physiologists and 1 exercise science student who delivered the intervention	Related to a specific intervention Experiences of 2 x 60-minute individual sessions for 12 weeks delivered by an exercise physiologist with support from an exercise science student.	Thematic analysis	'Key strengths of the program highlighted included the individualized structure of the accredited exercise physiologist program, which was considered integral to participants' enjoyment and progress. One-to-one sessions tailored to individual needs provided a number of benefits, including the opportunity to foster personal connections, and accommodate specific needs relating to cognitive and sensory impairments. Finally, the use of an accredited AEP [accredited exercise physiologist] with discipline-specific knowledge and expertise facilitated "on the spot" opportunities to extend activities to further promote participants' mobility and function' (p.110–111).
Resnick et al. (2008)	Qualitative -Unspecified	Focus groups	6 nursing homes participating in a RCT, location not stated	93 nursing assistants	Related to a specific intervention Experiences of delivering a restorative care intervention	Basic content analysis	'The findings from this study provide an important NA [nursing assistant] perspective with regard to implementation of a restorative care philosophy in NHs and provide some suggestions for future work in this area' (p.107).
Resnick et al. (2006)	Qualitative - Unspecified	Focus groups and interviews (type unspecified)	Nursing home setting. No further information provided, location not stated	13 nursing assistants	Related to a specific intervention Experiences of delivering in a restorative care intervention	Basic content analysis	'The study supports and adds to previous work that suggests in order to successfully implement changes in care in nursing home settings the following issues should be addressed: real or perceived workload issues, poor communication with nursing, insufficient knowledge or education, lack of appropriate supplies, and insufficient administration support' (p.78).
Saravanakumar et al. (2018)	Qualitative-Descriptive	Focus groups (1 for staff only)	1 residential aged care facility in Australia taking part in a larger research programme	3 recreational activity officers who supported the interventions	Related to a specific intervention Experiences of a 14-week modified tai chi and yoga programme	Thematic analysis	'Tai chi and yoga programmes are appropriate for frail, dependent older people in residential care when modified considering individual's ability, motivation and preference. Aspects of the programmes such as mindfulness approach, mild-to -moderate intensity, and perceived benefits served as motivators to continue participation. These programmes also serve as meaningful activities that enhanced quality of life and provided opportunities to cope effectively with the ageing process' (p.4297).

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STUDY AND PUBLICATION YEAR	STATED METHODOLOGY	METHOD	SETTING	PARTICIPANTS	PHENOMENON OF INTEREST	DATA ANALYSIS METHOD	AUTHOR'S STATED CONCLUSIONS
Turpie, Whitelaw & Topping (2017)	Qualitative-Case study	Semi-structured interviews	2 private care homes in the UK who had recently started to implement a government-led initiative to increase physical activity levels	3 key staff from each care home (5 support workers, 1 senior support worker, 1 regional manager, 1 training instructor for the intervention)	Related to a specific intervention Factors affecting implementation of the government-led programme- included staff training, a training resource pack and equipment	Thematic analysis	'Findings show that the successful implementation of the project and its further sustainability can be promoted by a range of different factors, with the training session being highlighted as critical. It also highlighted various factors which could potentially impede implementation. However, it was asserted that such barriers can be worked around or overcome' (p.212).
Underwood et al. (2013)	Mixed methods process evaluation	Semi-structured interviews and observations	8 residential care homes in the UK taking part in a larger study. 2 control and 6 intervention homes Intervention homes- 2 part of a large chain, 2 independent homes, 2 designated as nursing homes	8 care home managers 6 carers 3 senior carers 4 activities co-ordinators. Physiotherapists involved in the delivery of classes appear to have been interviewed but the number of this group of participants was not stated.	Related to a specific intervention Experiences of an intervention aiming to reduce depressive symptoms in care home residents- included staff training and 2 x weekly, exercise classes led by physiotherapists	Thematic analysis using a framework method	'Both residents and care home staff valued participation in the study, and also the activities of the physiotherapists in promoting physical activity within the homes. There was less evidence of achieving a cultural shift in the attitude towards physical activity in care homes. In some homes, however, some sustained changes were maintained after the end of the study' (p.154).
Vikstrom et al. (2021)	Qualitative-Grounded theory	Semi-structured interviews and focus groups	2 nursing homes in Sweden participating in a RCT	25 participants (22 nurse assistants and 3 nurses) 10 nursing assistants named as the designated main carer for participating residents were interviewed individually. 4 focus group with a total of 15 nursing assistants and registered nurses	Related to a specific intervention Experiences of a 12-week combined sit-to-stand and protein nutritional supplement intervention for nursing home residents.	Grounded theory	'The combined intervention of high protein oral nutritional supplementation and exercise is experienced by nursing staff as a positive concept. Our findings suggest that staff engagement in NH interventions benefit from viewing each older resident in a person-centered way. This includes a changed perspective among staff to identify intrinsic abilities and potential driving forces within each older resident, which contrasts with commonly prevailing views that NH residents have low willpower and are at the end-stage of their lives. Our study indicates that a concept that is broadly integrated as a routine in the unit and aims for increased physical function, integrated into the daily planning of care, where managers are staff-centered, could be a strong building block for reaching elements of health-promotion in daily NH care' (p.9).
Wu, Wu & Huang (2013)	Qualitative-Exploratory	Semi-structured interviews and focus groups	13 long term care facilities in Taiwan- no other information provided	20 nurses	Physical activity generally Perceptions of physical activity care for older care home residents	Constant comparison and content analysis	'There is a conflict in the nurses' perceptions of the residents' participation in daily physical activities because the nurses recognise the importance of this but are also concerned about the accompanying increased risk of residents falling' (p.1660).

Table 3 Summary of included studies.

REVIEW FINDINGS

In total, 508 findings were extracted, and each finding was assigned a level of credibility. Of these, 255 findings were unequivocal (50%), 29 were equivocal (6%), and 224 were unsupported (44%). Unequivocal and equivocal findings were aggregated into 38 categories, from which eight synthesised findings were identified. The categories and synthesised findings are outlined in Figure 2. Synthesised findings 1–3 related to the perceived impact of PA participation on residents, synthesised findings 4–7 related to the influence of the care home setting on PA engagement, whereas synthesised finding 8 related to influencing characteristics of the activity.

The ConQual approach was used to assess confidence in the level of evidence of each synthesised finding (Munn et al. 2014). All synthesised findings were giving a rating of 'low'. All were downgraded one level due to dependability and credibility issues in the included studies. A summary of the findings table is outlined in Table 4.

SYNTHESISED FINDINGS

Illustrative participant quotes for each category and synthesised finding are displayed in Table 5.

Synthesised finding 1: Residents' individualised needs, preferences, and experiences

The first synthesised finding comprising 34 findings is based on four categories: *lack of motivation from residents; impaired health, cognitive status, and function; personal characteristics;* and *personalised approaches.*

Staff perceived a *lack of motivation from residents* to participate when specific PA interventions were introduced in the care home. They felt some residents lacked motivation to participate at all, others gave minimal effort, and others had difficulties sustaining motivation. *Impaired physical health, cognitive status, and function* were perceived as barriers to residents' participation in PA by staff across occupational groups. Staff felt such impairments affected residents' confidence and ability to

SYNTHESISED FINDING	TYPE OF RESEARCH	DEPENDABILITY	CREDIBILITY	CONQUAL SCORE
1. Residents' individualised needs, preferences, and experiences Person-centered physical activity strategies and care plans tailored to residents' individual needs, preferences and experiences are required.	Qualitative	Downgrade 1 level*	Downgrade 1 level**	**Low**
2. Perceived benefits of physical activity for residents Staff described benefits of physical activity for residents when asked their experiences therefore strategies should be in place to support staff with reflection	Qualitative and qualitative phase of mixed methods	Downgrade 1 level*	Downgrade 1 level**	**Low**
3. Perceived risks of physical activity for residents Support from relevant health and social care professionals is needed to mitigate perceived risks of physical activity participation	Qualitive and qualitative phase of mixed methods	Downgrade 1 level*	Downgrade 1 level**	**Low**
4. The role of care home staff in physical activity promotion Physical activity needs to be a clearly explained and defined part of all care home staff's job descriptions	Qualitative and qualitative phase of mixed methods	Downgrade 1 level*	Downgrade 1 level**	**Low**
5. Support from others Support systems should be in place to ensure physical activity is promoted in a cohesive way	Qualitative and qualitative phase of mixed methods	Downgrade 1 level*	Downgrade 1 level**	**Low**
6. Environmental influences Physical activity promotion should be considered when designing and modifying care home environments.	Qualitative and qualitative phase of mixed methods	Downgrade 1 level*	Downgrade 1 level**	**Low**
7. Organisational influences Organisational routines, capacity, policies, culture, and training should be reviewed to optimise opportunities for physical activity in care homes.	Qualitative and qualitative phase of mixed methods	Downgrade 1 level*	Downgrade 1 level**	**Low**
8. Motivational and sustainable physical activity Staff and residents should be involved in developing motivational and sustainable physical activity interventions.	Qualitative and qualitative phase of mixed methods	Downgrade 1 level*	Downgrade 1 level**	**Low**

Table 4 Summary of findings (adapted from Lockwood et al., 2020).

* Downgraded 1 level due to common dependability issues across the included studies (most did not clearly state the location of the researcher or acknowledge their influence on the research, some lacked congruity between the methodology and research question).

** Downgraded 1 level due to a mix of unequivocal and equivocal findings.

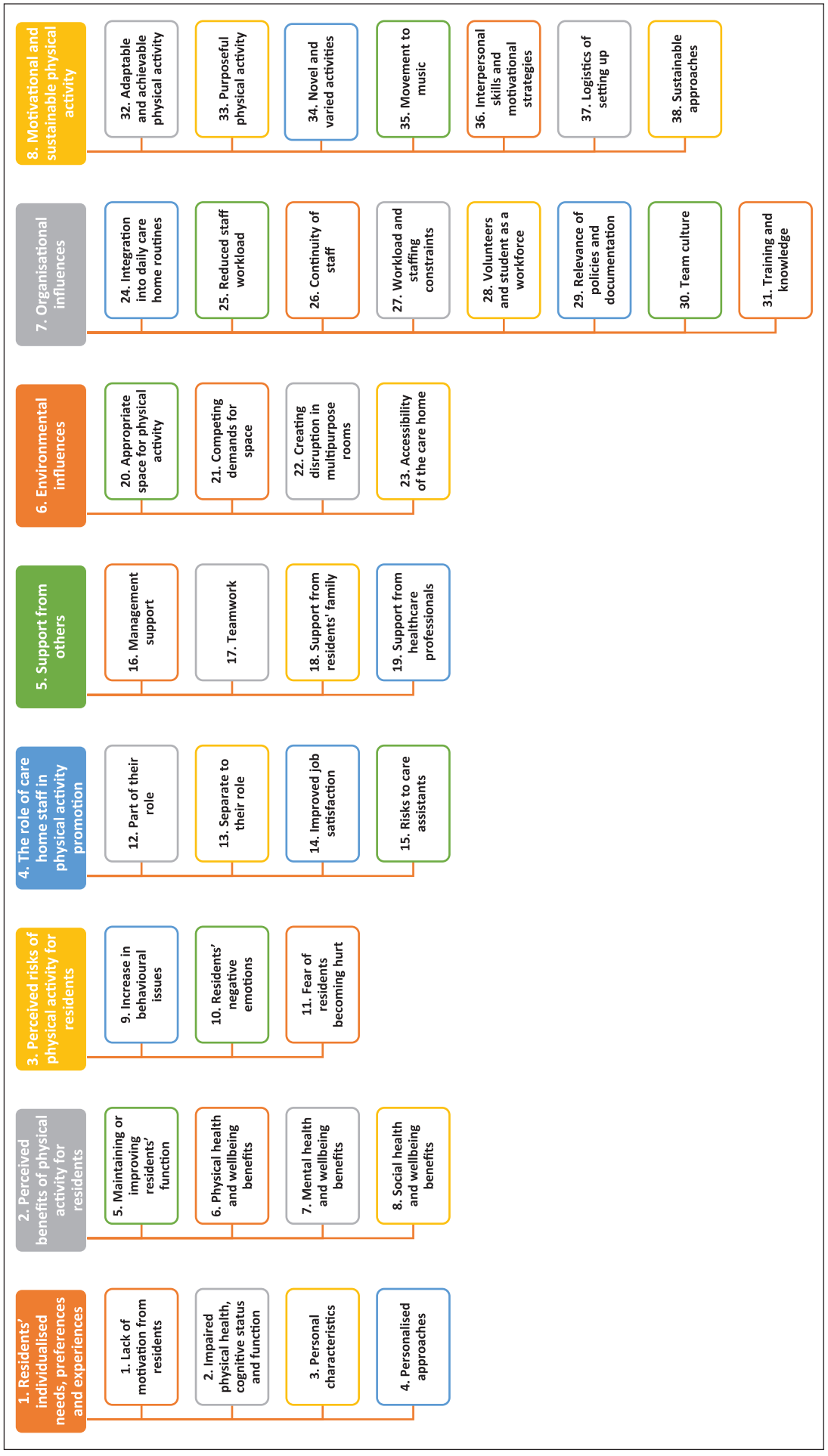

Figure 2 Overview of synthesised findings and categories.

CATEGORY	ILLUSTRATIVE PARTICIPANT QUOTES
Synthesised finding 1: Residents' individualised needs, preferences. and experiences	
Lack of motivation from residents	'Some residents just won't do it, even if you know they can. You tell them they can stand, and they just won't do it. It is so frustrating when they are not trying to help you and you know they can.' – Nursing assistant (Resnick et al. 2006: 80) '… there were a few of them that definitely tried at the beginning and then just realized that it just wasn't something they wanted to do, so then they would refuse, refuse, refuse.' – Healthcare assistant (Kagwa et al. 2018: 5)
Impaired physical health, cognitive status and function	'You really have to think about what to do with those who cannot do anything.' – Role unknown (Ericsom-Lidman & Strandberg 2015: 219) 'I can think of one lady that would not go because of her hearing.' – Therapist (Guerin & Fryer 2008: 114) 'One of our ladies has dementia, she will get confused during a class and she keeps getting up and trying to leave the room.' – Role unknown (Gomaa et al. 2020: 416)
Personal characteristics	'They have been active all their lives.' – Nurse (Guerin & Fryer 2008: 113) 'Their cognitive skills play a major part, those who have not got dementia still want to be quite active.' – Nurse (Guerin & Fryer 2008: 113) 'They're a lot more open and socially active people, the ones I'm thinking of that come twice a week, every week pretty much.' – Therapist (Guerin & Fryer 2008: 114)
Personalised approaches	'You just get to know what makes them tick by knowing their past. I tell one man, "you have a press conference now" and he'll just get up and go get dressed and get ready for the meeting.' – Nursing assistant (Galik, Resnick & Pretzer-Aboff 2009: 50–51) 'We all know our residents very well, such as that guy there. He likes us to address him as "sir" so I call him "sir" every time, and he will be more likely to agree to participate in our activity programs.' – Nurse (Wu, Wu & Huang 2013: 1656)
Synthesised finding 2: Perceived benefits of PA for residents	
Maintaining or improving residents' function	'To maintain their level of function or even improve it, it is always a nice achievement for yourself. it also about prevention. to delay contractures with bedridden residents.' – Administrator (Baert et al. 2016: 78) 'Yeah this has helped because…they can get up and go to the bathroom by themselves.' – Healthcare assistant (Kagwa et al. 2018: 4)
Physical health and wellbeing benefits	'Definitely changes like, you know, some of the residents are, you know, probably walking a bit more independently… … … [in] my exercise class like they're quite, their dexterity's got a lot better.' – Physical therapy assistant (Brett et al. 2018: 92) 'I think if we can keep people walking and able to do as much for themselves as possible, for as long as possible, it's better for them physically, because you know, you've got fewer skin tears…they're not falling as much, and it's beneficial, easier for the carers as well…even cost-wise, you're not spending so much money on supplies because you haven't got somebody falling and getting a skin tear.' – Care staff (Kagwa et al. 2018: 2161)
Mental health and wellbeing benefits	'[Resident] not as agitated. Not calling out as much… …. [another resident] I think she's, you know, she used to cry every couple of days. I don't, I haven't heard her for weeks.' – Registered nurse (Brett et al. 2018: 92) 'I really was absolutely amazed, um, with a couple of residents with, to just be able to watch them they're doing the exercise, but just the look on their face, the joy, they were actually getting pleasure out of it you know? Brilliant, absolutely brilliant.' – Care staff (Post et al. 2020: 2158)
Social health and wellbeing benefits	'The interaction… because we have got two levels, those downstairs never meet people from upstairs… and they got to know each other. R9F especially opened up (which) is a huge thing because she does isolate most of the time, because of (her) cognition. Getting her out of the room, even for five minutes, will certainly lessen the chances of falling into depression and things like that. It's something that's going to give them choice because of that empowerment to be able to be part of a little group.' – Activity manager (D'Cunha et al. 2020: 10) '…I know one of the residents just seems to be um, happier, now whether that's the exercise I don't know… um [the exercise physiologist] walks into the room, and this resident's face lights up, like so, she's actually built relationships with those people…their cognitive ability is so low that, I mean that's amazing in itself that they seem to remember her.' – Care staff (Post et al. 2020: 2158)
Synthesised finding 3: Perceived risks of PA for residents	
Increase in behavioural issues	'I've noticed there's a few residents that have either gotten worse or stayed the same… … … Like [resident], his gotten a bit more aggressive but I don't know if that's the, the period of the study or as I said that's just the general condition that they have.' – Direct care worker (Brett et al. 2018: 92) 'There is this resident who doesn't want to be touched. You go near him and he swings. But, you know that he likes cookies, so give him a cookie. While he is busy, do what you have to do and get going. That works. So by the time he knows what you are doing, it's already too late. You've done it and he forgets it.' – Nursing assistant (Galik, Resnick & Pretzer-Aboff 2009: 52)
Resident's negative emotions	'Fear of not being able to keep up with all the others.' –Therapist (Guerin, Mackintosh & Fryer, 2008: 114) 'They tend to close themselves up in their rooms and no one encroaches and no one hurts them.' –Therapist (Guerin, Mackintosh & Fryer 2008: 114)
Fear of residents becoming hurt	'He did them for a while, but his hip hurt too much.' – Role unknown (Vikstrom et al. 2021: 6) 'If he falls, I worry that he may suffer a fracture or if he hit his head…this might result in his general health degenerating.' – Nurse (Wu, Wu & Huang 2013: 1657)

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CATEGORY	ILLUSTRATIVE PARTICIPANT QUOTES
Synthesised finding 4: The role of care home staff in PA promotion	
Part of their role	'For preserving remaining abilities, our residents have to always eat their meals in the dining room to encourage physical activity and interaction with others, and this is our regulation.' – Nurse (Kim et al. 2016: 1330) 'There is no physical therapist in our nursing home, but the residents do upper extremity ROM (range of motion) exercises with a ball in our daily exercise program.' – Nurse (Kim et al. 2016: 1330)
Separate to their role	'Not all of us are interested in enthusing residents to move. It's not part of our job description.' – Role unknown (Vikstrom et al. 2021: 65) 'I think the sit-to-stand program should be recreation…they do the exercises, they do that kind of stuff, we just don't have time for it.' – Healthcare assistant (Kagwa et al. 2018: 6) 'In the living areas, attempts are being made to realize physical activity offers at a distance, but even this is not satisfactory. The added value is questionable if things such as fall prevention and gymnastics had previously been possible and now only very light and limited activation is possible.' – Executive staff (Frahsa et al. 2020: 6)
Improved job satisfaction	'Knowing that I am working with that resident with the muscle in their legs and knowing that I am restoring that person back to where they can walk and do some of the things they used to do, that really makes me feel good.' – Nursing assistant (Resnick et al. 2006: 82) 'Well, it [organizing PA] is also a bit like a job experience, it gives you a good feeling, it makes you feel useful. You're not just walking around here. and you want to achieve things. you can reach goals.' – Physiotherapist (Baert et al. 2015)
Risks to care assistants	'And when she stands up and gets to fighting and then she could possibly hurt herself. Or if you tried to catch her, you stand a chance of both of you getting hurt.' – Nursing assistant (Galik, Resnick & Pretxer-Aboff 2009: 53) '… it's not that easy for us to be doing the sit-to-stand exercise with her. Like, sometimes she's OK—but on the count of 3 and 4, she's like—no I'm not gonna do it. Like she's very stubborn. She's like— I'll not do it—get to hell …' – Healthcare assistant (Kagwa et al. 2018: 5)
Synthesised finding 5: Support from others	
Management support	'The management was behind that project, and he even called it "my project".' – Healthcare assistant (Kagwa et al. 2018: 6) 'I never see any managers being involved in that sit-to-stand activity.' – Healthcare assistant (Kagwa et al. 2018: 6) 'And it's about trying to instil into the staff that they've got to try and let them do it for themselves, you know what I mean? It's like Sophie taking Mavis round, Sophie's the laundry assistant and I said to Sophie "take Mavis with you, let her do something." "Oh can I do?" "Yeah, course you can do that," d'you know what I mean? It's just small little things, isn't it?' – Care home manager (Hawkins et al. 2018: 1833)
Teamwork	'…if we all do it together, if we don't know how to do it, then the sit and stand person for the resident, and we discuss it, and we go along with it, and everybody work along with that.' – Healthcare assistant (Kagwa et al. 2018: 7) '…We didn't have the nursing support to do this. We didn't have nothing. You expect them to help you, but they don't. They pull us away to do other things…they don't even encourage the residents to do little things—they will ask you to go do it.' – Nursing assistant (Resnick et al. 2008: 106)
Support from residents' families	'…We need to educate families during care plan meetings and re-educate them every 3 months. Also it is important to let families know how their parent/loved one is doing with regard to restorative care activities… boy your mom did so well today—she was doing this exercise program and you know what…she brushed her teeth today! Then the family could further reinforce this behavior.' – Nursing assistant (Resnick et al. 2008: 106) '…The families feel they are paying for us to provide the care. Some are just so negative. Sometimes we have to ask the family to step out because she [the daughter] will keep saying he won't do it, he won't transfer, he can't do it.' – Nursing assistant (Resnick et al. 2008: 106)
Synthesised finding 6: Environmental influences	
Appropriate space for PA	'psychologically better' – Administrator (Benjamin, Edwards & Caswell 2009: 187) 'They know this is an exercise room.' – Administrator (Benjamin, Edwards & Caswell 2009: 187) 'We've got little quiet areas and we've got a big area at the front as well.' – Role unknown (Underwood et al. 2013: 210)
Competing demands for space	'Well, you've got to deal with people who want TV … so there's couches and chairs, but you have [a] wheelchair and Geri-chair … So space … is limited, so instead of getting maybe 20 independent people in that small room, now you got wheelchairs and Geri-chairs, you're down to ten people so you're not meeting that need of all those who want to be there, just because of limited space.' – Role unknown (Benjamin et al. 2011: 254)
Creating disruption in multipurpose rooms	'This is also a dining room. Families come and have meals in here with their loved ones. They do recreational activities in here … crafts … some exercises in here, maybe. But we're thinking [parallel bars] have to go there, but it would not look very nice … I mean in a sitting room.' – Administrator (Benjamin, Edwards & Caswell 2009: 187) 'It can stir up emotions and possibly jeopardize nutritious food intake.' – Role unknown (Vikstrom et al. 2021: 6)
Accessibility of the care home	'Part of it too is the building … I used to work on the first floor and if we had to bring [brand name of a geriatric chair] up and down that ramp to take them [residents] to activities, it was a killer – like, do I really wanna do this today!? … That's a physical barrier for our residents.' – Role unknown (Benjamin et al. 2011: 254) 'Long stretches without obstacles promote physical activity, as they can be used by residents with wheelchairs and walkers regardless of weather conditions.' – Role unknown (Altmeier, Thiel & Frahsa 2021: 7)

(Contd.)

CATEGORY	ILLUSTRATIVE PARTICIPANT QUOTES
Synthesised finding 7: Organisational influences	
Integration into daily care home routines	'You mean change my daily routine or…? Oh yeah for sure because it is an extra load for me like, but I don't mind doing it 'cause I'm there already.' – Healthcare assistant (Kagwa et al. 2018: 7) 'This scheduling has forced us to use our imaginations about what to accomplish, and that is a good thing, I think we all have come up with something new to do together with residents.' – Role unknown (Frahsa et al. 2020: 221)
Reduced staff workload	'With the dressing, because sometimes if their stiff, because they're doing the exercises their muscles are looser. Yeah, so it actually helps [to dress resident] a lot! So they're less resistive to care… Yeh, so the exercise has a big impact… If you're dressing them and they're less stiffer, you can do things a little bit quicker.' – Role unknown (Post et al. 2020: 108) 'For the nursing aides, when they, the residents, are in a good physical condition, the burden for the nursing aides goes down. As long as somebody stays mobile, they don't have to sit in a wheelchair and they can do everything by themselves?' – Physiotherapist (Baert et al. 2015: 375)
Continuity of staff	'I think here, too, there's a lot of continuity of staff, so you'll get one resident who'll always be with the same staff member, so they learn to trust them a lot more.' – Role unknown (Benjamin et al. 2011: 252) 'It doesn't matter what sector you come from, whether it's general practitioner, physio or district nurse, (continuity) is really important because each time a new person comes in you're starting from the beginning again.' – Manager (Underwood et al. 2013: 114)
Workload and staffing constraints	'They fund, but they never fund enough. They expect that [expectation that we have to cope] from you and then they'll say, we'll give money, but it doesn't cover [costs for staffing].' (Benjamin et al. 2011: 252) 'And the danger with that I think people become task orientated, so there's very much a focus potentially on people being cared for and staff not having the capacity to look at that and see it as a priority.' – Role unknown (Turpie, Whitelaw & Topping 2017: 211) 'Some of [the HCAs] said no, we cannot do [the sit-to-stand activity] because it's, it's too hard for us. Everybody's putting stuff on us more and more and more. There's more per patient, less time, we feel rushed…' – Healthcare assistant (Kagwa et al. 2018: 6)
Volunteers and students as a workforce	'When the resource pot is low, you have to do with what you can…. So we have volunteers for many, many things and for the activities.' – Administrator (Benjamin, Edwards & Caswell 2009: 188) 'And we have the volunteers, but we still need more.' – Role unknown (Benjamin et al. 2011: 253)
Relevance of policies and documentation	'That's something we've talked about…. A lot of [the residents] like going outside for walks, but we don't have any [policies or procedures] developed.' – Administrator (Benjamin, Edwards & Caswell 2009: 185) 'The well-being of the residents is our top priority. Documentation? Only what is important for the public health department.' – Manager (Frahsa et al. 2020: 7) 'I didn't feel comfortable with this checklist, not all residents want to go outside for a walk, but it feels like I have to take them outside, otherwise I cannot put a cross in that box. It is an incredibly stressful situation; there are only a few activities which are regarded as good enough.' – Role unknown (Ericson-Lidman & Strandberg 2015: 218)
Team culture	'Everybody tries to rally round.' – Role unknown (Turpie, Whitelaw & Topping 2017: 210) 'There is a mindset among some people that once a resident reaches a certain level, restorative care will not do a lot.' – Administrator (Benjamin, Edwards & Caswell 2009: 188) 'It is a collective protective culture and that's why they come into care. They think people should be protected, but I think in this situation because we deal with people who have very high dependency needs that it sometimes is that we de-skill them, rather than enhance them because it's a protective mechanism.' – Manager (Underwood et al. 2013: 113)
Training and knowledge	**'…**when [the Lead Licensed Practical Nurse] implement that sit and stand, we have the meeting, everybody went, and we have discussion about it…' – Healthcare assistant (Kagwa et al. 2018: 6) 'I missed the info meeting and felt overwhelmed. It was mentioned as important, but I never grasped why.' – Role unknown (Vikstrom et al. 2021: 5)
Synthesised finding 8: Motivational and sustainable PA	
Adaptable and achievable PA	'It was motivation for the aged people, and to see it being modified for them, to their abilities, has been very worthwhile, because they were able to do what was in their range of abilities, and that's the reward.' – Role unknown (Kim et al. 2016: 4395)
Purposeful PA	'Jennifer loves to dust wipe and wash dishes by hand in the kitchen, and the cloth gets very dirty but she continues to wipe and wash dishes … I gave her a clean cloth and she continued to wipe, she's very pedantic … I allow her to continue, we can put the china in the dishwasher later … It's a good activity for her.' – Role unknown (Ericson-Lidman & Strandberg, 2015: 220) '…to maintain independence I feel as a manager of the home rightly or wrongly and whether we do it intentionally I feel we take away their independence quite a lot because we do their cooking for them, we do their meals, we do the washing, we do the cleaning, you know, and they're expected to put up with that. Somebody may have been a hard worker all their lives and done all their own cleaning and washing right up to 90 to coming in and then all of a sudden you don't need to do it. We'll do all that for you. We're taking it all away.' – Manager (Hawkins et al. 2018: 1831)

(Contd.)

CATEGORY	ILLUSTRATIVE PARTICIPANT QUOTES
Novel and varied activities	'It was like breathing fresh air…it took us away from our normal ideas of activities…it's lateral thinking…a new idea and it's wonderful.' – Role unknown (Post et al. 2020: 4393) 'The difference was colour, props, yeah fun, imaginative, creativity, rather than oh let's move our leg up, and down.' – Role unknown (Gomaa et al. 2020: 414)
Movement to music	'Residents love music. They love to dance, even if they're not able to physically get up and dance, the hands go or the foot taps… People are drawn to music from infancy right on up – music just gets you going: it's just a natural.' – Role unknown (Benjamin et al. 2011: 254) 'I was really amazed to see her progression, because suddenly she started to remember some of the songs and the movements that came with that song. She even moved sometimes before it start, like the tap dance sequence, she'd started to tap, and she would actually sing along to some of the songs that she would remember would be in that series.' – Role unknown (Gomaa et al. 2020: 410)
Interpersonal skills and motivational strategies	'We carry on with them so much up here. We just carry on and we're ourselves and for them, it's like being around their family or their grandkids.' – Nursing assistant (Galik, Resnick & Pretzer-Aboff 2009: 7) '…with a wee bit of prompting.' – Role unknown (Turpie, Whitelaw & Topping 2017: 210) "lot of residents gain emotional stability through physical contact involving touching during activities at the nursing home." – Nurse (Kim et al. 2016: 1331)
Logistics of setting up	'The only thing we actually found was that someone could not come in the morning, but wanted to come in the afternoon and they were not having none of it (the residents) … They know their own mind … And no, they're all tired and they've had lunch and no, and it's really funny but that day none of them wanted to do it.' – Manager (Underwood et al. 2013: 106) '…very important that the participants are in the room if someone's coming to do the program.' – Role unknown (Gomaa et al. 2020: 415) 'I think technically she don't mind it doing it grouping … Just probably it makes her motivation if there is more people.' – Healthcare assistant (Kagwa et al. 2018: 7)
Sustainable approaches	'We have all these best practices and research … yet activity seems to be the fun stuff. We don't put as much effort into it … so I really want to look at what are the activities … and keep data on those activities… Like, how many people show up? … Are [the residents] actively participating, or are they all snoozing through the program?' – Administrator (Benjamin, Edwards & Caswell 2009: 188) 'I'm very sceptical of all the programs…because when the funding runs out, the program stops, (laughs), it's that simple.' – Role unknown (Post et al. 2020: 2157) '… Maybe if someone would stop in now and then and let us know they care about what we are doing. It seems since you left it kind of dropped. We don't need babysitters but….if we could just tell someone what we are doing!' – Nursing assistant (Resnick et al. 2008: 106)

Table 5 Illustrative participant quotes.

participate in PA independently. Nursing and therapy staff believed *personal characteristics* of residents affected their participation. Residents with sociable or self-motivated personalities, those with previously active lifestyles or good cognition were deemed more likely to take part in PA. Staff described using *personalised approaches* based on the past experiences, motivation, and preferences of individuals to motivate residents to take part in PA.

The first synthesised finding therefore summarises the requirement for person-centered PA strategies and care plans tailored to residents' individual needs, preferences, and experiences.

Synthesised finding 2: Perceived benefits of PA for residents

Synthesised finding 2 incorporated 48 findings comprised of four categories: *maintaining or improving residents' function; physical health and wellbeing benefits; mental health and wellbeing benefits;* and *social health and wellbeing benefits*.

Maintaining or improving residents' function was described as a key benefit by staff across all occupational roles. Observation of functional improvement was also described as a motivator for staff supporting PA opportunities. Staff noted a wide range of *physical health and wellbeing benefits* obtained by older residents taking part in activities, including improved strength, pain, and continence. Staff also observed *mental health and wellbeing benefits* when residents participated in PA. Some staff perceived improvements in agitation, mood, alertness and cognition. Others felt residents enjoyed taking part in activities and became more confident over time. Staff perceived PA led to *social health and wellbeing benefits* as it provided opportunities for relationship formation between residents and between residents and staff supporting the activity.

Consequently, the second synthesised finding depicts that, when asked about their experiences, staff describe many benefits of PA for residents. Thus, strategies to support staff with reflection may be beneficial.

Synthesised finding 3: Perceived risks of PA for residents

Three categories consisting of 13 findings were aggregated to form this synthesised finding: *increase in behavioural issues, resident's negative emotions, and fear of residents becoming hurt.*

Some care staff observed an *increase in behavioural issues,* such as agitation and aggression, following the implementation of PA intervention but were unsure whether this was a direct result of participation in activity.

Strategies to avoid such issues during the residents' personal care routine resulted in reduced PA opportunities for residents. Therapist and care staff perceived that PA could elicit *resident's negative emotions.* They believed some residents experienced self-consciousness and embarrassment when participating in group exercise, while newly admitted residents were grieving the loss of their old home and felt guilty about enjoying activities. These emotions could lead to residents isolating themselves and declining to participate in PA. Some staff described a *fear of residents becoming hurt* through taking part in PA. Falling, becoming injured, or experiencing increased pain were reported as possible outcomes.

The third category therefore demonstrates that care home staff perceive that there are some observed and anticipated risks to residents' participation in PA. Support from relevant health and social care professionals may be needed to mitigate some of these risks.

Synthesised finding 4: The role of care home staff in PA promotion

This synthesised finding is comprised of four categories including a total of 29 primary findings: *part of their role; separate to their role; improved job satisfaction;* and *perceived risk to care assistants.*

Some nursing and care staff perceived PA as *part of their role*. They described taking responsibility for incorporating PA within daily activities and arranging activity programmes. However, many viewed PA promotion as *separate to their role*. Some care and nursing staff perceived other colleagues had better skills in this area, such as physiotherapists, exercise physiologists and activity staff. Some executive staff believed PA was best delivered by external providers to maximise the quality and intensity of activities. Staff across occupational roles described how supporting or observing residents' participation in PA *improved job satisfaction*. Residents' enjoyment of activities elicited joy in staff, and some felt a sense of pride from knowing they had helped residents to make improvements. However, a few staff members *perceived risks to care assistants* supporting PA. For instance, staff described concerns about experiencing injury and physical or verbal abuse.

Thus, staff held conflicting views about their role in supporting PA, suggesting that PA needs to be an articulated and defined part of all job descriptions in care homes.

Synthesised finding 5: Support from others

Four categories, consisting of 33 primary finding were combined to form synthesised finding 5: *management support, teamwork, support from residents' families, and support from healthcare professionals.*

Staff facilitating PA initiatives perceived they had varying levels of *management support*. This was influenced by whether managers got involved in the intervention or provided staff with encouragement and feedback. *Teamwork* was perceived as an important factor when supporting the implementation of specific PA interventions. Some care staff felt supported by other carers and by nursing staff, whereas some care staff felt nursing colleagues were not supportive of PA initiatives. Care home staff perceived *support from residents' families* influenced residents' participation. Some felt there was need to communicate with family members about the benefits of PA and seek their support with encouraging activity. Staff supporting restorative care interventions experienced difficulties when this activating approach was at odds with family expectations regarding care provision. Finally, care home staff valued *support from healthcare professionals*. Care staff and residents were reassured that PA was safe when it was led or advised by healthcare professionals. Their advice helped to provide options for residents with cognitive impairments, develop mobility plans and access resources such as mobility aids.

In summary, care home staff value support both internal and external to the organisation when facilitating PA. Having support systems in place may ensure a cohesive approach to PA promotion.

Synthesised finding 6: Environmental influences

This synthesised finding was developed from four categories comprised of 18 primary findings: *appropriate space; competing demands for space; creating disruption in multipurpose rooms;* and *accessibility of the care home*.

Some staff believed *appropriate space,* which could be indoors or outdoors, for residents to complete PA was important. Some perceived dedicated space for PA was 'psychologically better' (administrator, Benjamin, Edwards & Caswell 2009: 187). However, *competing demands for space*, created by an increase in care equipment required by residents and limited number of areas in the care home, were viewed as barriers to PA. PA was described as *creating disruption in multipurpose rooms*, as such activities disturbed the calm atmosphere and aesthetics. Staff across occupational roles believed the *accessibility of the care home* influenced PA levels. Features of the building, such as design of corridors and elevator access, could facilitate or impede PA opportunities for residents.

This synthesised finding demonstrates staff perceptions that care home environment influence PA promotion. This impact should be considered when designing or modifying care home environments.

Synthesised finding 7: Organisational influences

Eight categories, with a total of 60 primary findings, were combined to form the seventh synthesised finding: *integrated into daily routines; reduced staff workload; continuity of staff; workload and staffing constraints; volunteers and students as a workforce; relevance of policies and documentation; team culture;* and *training and knowledge.*

Many staff felt that participation in PA could be *integrated into daily routines* and described how they adapted and planned flexibility within care home

schedules to facilitate residents' participation. Some care staff perceived improvements in residents' health and wellbeing gained through participation in PA interventions reduced the amount of assistance required from staff, which in turn *reduced staff workload*. *Continuity of staff,* including health professionals external to the care home, was perceived as an important factor for facilitating PA. This enabled relationships to become established and ensured a cohesive and consistent approach to PA promotion. However, *workload and staffing constraints* in care homes led to many care staff feeling frustrated that they had insufficient time to support PA. They often had to prioritise meeting basic care needs due to low staffing levels and funding constraints. *Volunteers and students as a workforce* were used in some care homes to support PA, but these were also in short supply.

Staff held mixed views about the *relevance of policies and documentation* regarding PA. Management-level staff described prioritising direct patient care over documentation due to the demands experienced during the Coronavirus pandemic, while others were considering developing new policies. The *team culture* describes how collective beliefs of the care team influenced PA promotion. Managers perceived changing their staff's mindsets regarding PA and overriding protective instincts was challenging. *Training and knowledge* motivated and supported staff in facilitating PA intervention. However, some staff felt training and support received was inadequate.

Thus, organisational routines, capacity, policy, culture, and training were perceived as influential factors affecting their ability to support residents with PA. This suggests a review of these components at an organisational level may enable care homes to identify opportunities to increase PA.

Synthesised finding 8: Motivational and sustainable PA

The final synthesised finding was developed from seven categories, consisting of 71 primary findings: *adaptable and achievable PA; purposeful PA; novel and varied activities; movement to music; interpersonal skills and motivational strategies; logistics of setting up;* and *sustainable approaches.*

Adaptable and achievable PA refers to staff's opinions that interventions that could be modified to individual abilities, such as virtual cycling, dance and everyday care tasks, made PA feel attainable for residents, which in turn motivated participation. Some care home staff and managers highlighted the importance of *purposeful PA*. They described approaches and challenges to supporting residents to take part in meaningful daily tasks in care home settings. *Novel and varied activities* were also perceived as beneficial. Such activities were reported to give residents a sense of choice, distract from impairments and incorporate different types of movement. *Movement to music* was described as another facilitator. Staff believed music enhanced resident's enjoyment and interest in the activity, and witnessed improvements in their memory, social, and functional abilities.

Care home staff described using *interpersonal skills and motivational strategies* to encourage residents to take part in activity. Strategies employed included humour, tough love, and giving time for residents to mentally prepare. Providing prompts, cues, repetition, and physical contact were described as important when supporting residents with cognitive impairments. Staff perceived the *logistics of setting up* PA opportunities could influence resident's participation. Group activities were reported to motivate attendance, save time, and remind staff to support activity, whereas one-to-one sessions were perceived as useful for building social connections. Timings needed to be acceptable to residents and staff. Finally, staff described the need for *sustainable approaches*. Some felt there was a need to evaluate how acceptable best-practice approaches were when implemented with care home residents and to involve care home staff when developing approaches. Others were concerned about a lack of longer-term funding and support for PA initiatives.

In summary, this synthesised finding highlights that staff can provide useful insights into the implementation of physical activities in care homes for older people. This suggests staff and residents should be involved in developing motivational and sustainable PA interventions.

DISCUSSION

This is, to our knowledge, the first qualitative systematic review to explore care home staff's perceptions of PA among older adults. Using a meta-aggregation approach, the review identified factors influencing PA among older adults in these settings from staff's perspectives. Eight synthesised findings based on low confidence evidence were identified including the individuality of residents, staffs' perceptions of risks, benefits and their role in supporting PA, support from others, organisational and environmental influences, and ensuring PA is achievable and sustainable.

The large number of categories identified relating to staff's perceptions of individuals, staff, environments, organisations, support systems, and interventions demonstrates the complexity of implementing PA approaches in care homes. PA guidelines do not neatly translate with these contexts. Complexity science and implementation science principles and methods may be useful when developing, implementing, and evaluating future PA initiatives. Whole-home approaches are complex interventions which are designed to integrate PA into daily life through targeted approaches at all levels of care home organisations (Forster et al. 2021; Hurley et al. 2020). Feasibility trials show that it may be possible to implement these complex interventions in real-world conditions and they could lead to short-

term improvements in resident's health and wellbeing (Forster et al. 2021; Hurley et al. 2020). Definitive trials will increase understanding of their effectiveness and how to optimise their implementation.

A key finding of the review was that staff believed individual residents have different needs, preferences, and motivations, suggesting personalised PA plans and opportunities are required. Similarly, Maurer et al.'s (2019) review exploring care home residents' attitudes and needs regarding PA found resident's views and requirements were unique to them and that residents preferred individualised support. Discussions between staff, residents, and their families regarding needs, preferences and experiences of PA are required to plan and offer meaningful PA approaches.

Care home staff described mixed perceptions regarding whether PA promotion is part of their role, suggesting a need to clearly explain and define staff members' role in PA promotion within job descriptions. Lack of time, linked to staffing and funding shortages, were frequently cited as organisational barriers affecting whether staff felt able to integrate PA into their role. Other studies demonstrate that residents and healthcare professionals from supporting services also perceive insufficient funding, staffing and resources as barriers to successful organisational practice and care provision in care home settings (Benjamin et al. 2014; Douma et al. 2017; Robbins et al. 2013). In the UK, care homes face many workforce challenges such as high turnover rates of staff, changes in immigration rules, low carer wages, and decreases in social care funding in real terms (House of Commons 2020). The findings of this review suggest that future social care funding reforms should factor in the organisational capacity and structures required to go beyond prioritising basic care needs and meet all the needs of residents, including personalised PA opportunities.

Despite low PA levels in care homes, staff identified a wide range of benefits of PA for residents. Strategies which support staff to reflect upon potential benefits of PA and focus on residents' strengths may help PA feel more attainable (Warburton & Bredin 2019). Strength-based approaches should be multidisciplinary in nature and support individuals to identify and manage potential benefits and risks (DHSC 2019b). They require input from a range of health and social care professionals or providers, which is an important component that care staff valued when supporting residents with physical activity. Previous research suggests that strategies which allow care homes and supporting services to plan how to work together effectively, clearly define roles, identify training needs and co-design approaches are most effective for delivering high quality care (Goodman et al. 2016; Goodman et al. 2017). Strategies which enable stakeholders from diverse organisational and professional backgrounds to collaboratively review and optimise organisational practices relating to PA in care homes may be beneficial; however, funding is required to 'buy out' stakeholders' time to actively engage in setting up best practice approaches (Goodman et al. 2017).

Staff perceptions regarding the influence of the care home environment with residents' PA levels aligns with previous research, which demonstrated that building design can affect residents' activity and social interaction as spaces for PA within the care home are often inaccessible due to high levels of dependency (Benjamin et al. 2014; Douma et al. 2017; Nordin et al. 2017). There appears to be inequitable access to PA opportunities, excluding residents with high levels of disability, sensory, or cognitive impairments (Benjamin et al. 2014). Assessment of access requirements should be considered as part of personalised PA planning. Good practice guidance in the design of care homes should be used when modifying and designing care home environments to increase accessibility and residents' wellbeing (Greasley-Adams et al. n.d).

LINES OF ACTION

Lines of action, or recommendations, for care home policy and practice were developed from the review's synthesised findings; however, as all synthesised findings were given a low ConQual rating, this may limit their ability to inform decision making.

For policy

- Social care funding arrangements should account for the staffing and resources required to comprehensively meet every resident's needs, including their PA needs (synthesised findings 1–3).
- Health and social care providers require sufficient resources to review the organisation of care and to develop support systems to optimise residents' opportunities for PA (synthesised findings 5, 7).
- PA promotion should be considered when designing and modifying care home environments (synthesised finding 6).

For practice

- Care home staff should work with residents and supporting health professionals to develop and provide person-centred PA strategies and care plans tailored to individual needs, preferences, and experiences (synthesised findings 1, 3).
- Care homes should adopt a strength-based approach to encourage staff to reflect upon benefits of PA for residents and seek support from relevant services/ clinicians to manage any perceived risks (synthesised findings 3, 4).
- PA needs to be a core part of all care home staff's roles (synthesised findings 4, 7).

- Organisational structures within care homes should be reviewed with involvement of all key stakeholders, including residents, staff, and supporting services, to optimise opportunities for PA (synthesised findings 1, 4, 5, 7).
- PA interventions should be co-designed with staff and residents (synthesised finding 8).

STRENGTHS AND LIMITATIONS

To our knowledge, this is the first qualitative review to explore care home staff's perspectives of PA among older adults in care home settings and adds to the underdeveloped field of care home research. By including studies addressing perceptions of specific PA interventions and those exploring PA generally, we were able to explore a range of different perspectives and experiences. Findings across studies were largely congruent despite being conducted in numerous countries. This suggests the review's findings may be transferrable across high-income countries. Furthermore, the primary reviewer is a physiotherapist with experience of working in care home settings. The author's familiarity with the topic may have facilitated the development of relevant synthesised findings. Steps were taken to minimise the author's pre-conceptions influencing the research process, such as re-reading primary findings and illustrations several times to check categories and synthesised findings were grounded in the data, and regular discussion with the second reviewer.

However, the review has limitations. All studies were conducted in high-income countries therefore the findings are not transferrable to middle- or low-income countries. Due to variable reporting and differences in professional accreditation requirements across countries and professions (Australian Health Practitioner Regulation Agency 2016), it was not possible to differentiate between perceptions of professional and non-professional staff. Therefore, the influence of professional codes of conduct was not captured by this review. All synthesised findings received a low ConQual rating due to dependability and credibility issues across included studies which limit their ability to inform decision making in policy and practice. Studies often provided insufficient information regarding the phenomenological approach, methodologies, and methods used. The reviewer therefore used subjective judgement to critically assess the studies based on the approach and methods the primary authors appeared to have used. For practical reasons, title and abstract screening was completed by one reviewer and only a selection of studies underwent critical appraisal and data extraction by two reviewers. This may have introduced reviewer bias; however, full texts were screened by two reviewers, there was regular discussion within the research team, and standardised JBI resources were used to mitigate this risk and to resolve uncertainties. Grey literature was excluded therefore some relevant information may have been missed.

CONCLUSION

The findings of this review highlight that care home staff perceive a wide range of factors relating to residents, care home settings and activities available affect PA participation in care homes.

Care home staffs' perceptions informed the development of lines of action for future care home policy and practice. At a policy level, adequate resources to plan, develop and implement PA approaches which meet the diverse needs and preferences of care home populations are required. At a practice level, strength-based and collaborative approaches are required to develop and deliver personalised PA opportunities for older adults, and to ensure organisational structures optimise participation. PA approaches should be developed in collaboration with care home staff and residents to ensure they are acceptable and sustainable.

ADDITIONAL FILES

The additional files for this article can be found as follows:

- **Additional File 1.** ENTREQ checklist. DOI: https://doi.org/10.31389/jltc.132.s1
- **Additional File 2.** MEDLINE search strategy. DOI: https://doi.org/10.31389/jltc.132.s2

ACKNOWLEDGEMENTS

FH's Master's degree programme was part funded by the Chartered Society of Physiotherapy Charitable Trust (CSPCT) and the Chartered Society of Physiotherapy (CSP). The views expressed are those of the authors and not necessarily those of the CSPCT or the CSP.

COMPETING INTERESTS

The authors have no competing interests to declare.

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TO CITE THIS ARTICLE:
Hallam, F and Lewis, S. 2022. An Exploration of Care Home Staff's Perceptions Regarding Physical Activity Among Older Adults: A Qualitative Systematic Review. *Journal of Long-Term Care*, (2022), pp. 244–267. DOI: https://doi.org/10.31389/jltc.132

Submitted: 07 January 2022 **Accepted:** 08 June 2022 **Published:** 13 October 2022