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ORIGINAL ARTICLE OPEN ACCESS

A Qualitative Evidence Synthesis to Explore Relationship-Centred Dental Care for Older People Living in Care Homes

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ABSTRACT

Background: Patient groups and policymakers are calling for the implementation of relationship-centred, co-ordinated care for vulnerable older people. Relationship-centred care highlights the significance of strong, quality relationships among residents, their families and the broader healthcare team. The present work performed a qualitative evidence synthesis to explore issues relating to the provision of relationship-centred dental care for older people living in care homes, as perceived by care home staff, dental professionals, family and residents. This builds on the existing evidence base and outlines areas for improvement of dental care provision within residential care homes.

Methods: A 'best fit' framework synthesis of primary research was used to understand how and why current dental care might or might not be relationship-centred. A palliative healthcare-focused conceptual framework for relationship-centred care was used as the basis for the synthesis. The review focuses on qualitative primary research studies exploring dental care for care-home residents.

Results: Of 235 unique citations, fifteen qualitative primary research papers were included. The synthesis identified supporting evidence for all five of the broad a priori themes from the relationship-centred care coding framework: *Relationship-centred care*, *Integration within the wider health and social care systems*, *Digital inclusion*, *Workforce support* and *Parity of esteem*. Relationships between themes were articulated.

Conclusions: This 'best-fit' framework synthesis found that care home staff identified numerous barriers to providing relationship-centred dental care for older residents. Dentists, families and residents were underrepresented, highlighting the need for further research into their perspectives. By acknowledging the complexity of dental care and addressing issues such as integration, workforce support, digital services and parity of esteem, the synthesis suggests that applying organisational change research may help improve oral health outcomes in care homes.

1 | Introduction

Public expectation of tooth retention is rapidly changing, and it is now a realistic prospect for many people to retain most of their natural teeth for life [1]. However, within care homes, access to

preventative and operative dental treatment is inconsistent [2, 3], there is a considerable burden of oral conditions [4–6] and oral symptoms impacting on quality of life [5, 7]. Care homes are long-term facilities usually with 24-h support and/or onsite nursing [8]. Life expectancy for care home residents ranges from 7 years

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in the 65–69 years age group to 2.5 years in the 90 years and over age groups [9]. This is significantly lower than non-care home residents in the same age groups. For example, community-living females aged 65–69 years live 16.3 years longer on average than the same age group living in care homes [9]. Furthermore, people living in care homes tend to have more complex health concerns such as cognitive impairment, multi-morbidity and polypharmacy [8].

Care homes vary in their commitment to oral health, and often other services, such as hairdressers, visit regularly but dental advice or appointments can be hard to organise [10]. Domiciliary visits can be helpful, but there are limitations to the treatment that can be provided. In the UK care home residents have high levels of unmet dental need and there is limited provision for preventative or regular oral care, as well as a lack of clinicians experienced in this area [11]. Changes to the NHS dental contract in 2006 further limited access to dental treatment in care homes by reducing the number of domiciliary care contracts available [11]. In Australia, there is limited public provision for oral care for aged care residents, with most relying on private practice or mobile services. Although this may change in future as there is widespread support for extending Medicare to include dental services within care homes and other vulnerable populations [12]. Similarly, in the USA, oral care for care home residents has limited coverage under Medicare, and funding varies between states, with reliance on expensive private services [13].

Nearly 35 years ago, Vigild [14] questioned whether ‘ideal’ dental treatment is appropriate, if indeed possible, for patients in care homes. Although 72% of residents had untreated decay and 42% had retained roots, only 26% expressed a desire for operative treatment. More recently, Kelleher and Lewis [15] discuss the concept of ‘satisficing’ rather than ‘maximising’ when it comes to dental treatment planning, appreciating that there are limitations for all patients when deciding which, if any, treatment approach is appropriate. Therefore, the key oral health aims for care home residents are prevention of disease and reduction of pain and morbidity [16]. Family members of older patients in care homes will also have their own opinions of what dental treatment they deem to be appropriate, influenced by a variety of psychosocial and other factors [11, 17]. Resource allocation is complex and increased transparency regarding which universal dental care can be provided is needed [18].

Functionally dependent older adults are likely to have multiple medical co-morbidities, potential difficulties accessing dental services and to rely on caregivers to maintain oral hygiene. For this group of patients, limited care addressing dental pain and infections may be most suitable [19]. Regardless of approach, preventive measures such as individualised oral care plans, topical fluoride and management of xerostomia are important to optimise oral health [20].

In response to such findings, or due to the increasing numbers of evidence-based guidelines, a number of interventions aimed at improving daily oral care have been developed [21–23]. However, maintaining a consistent positive effect on oral health is challenging [24] and care provided is often fragmented, reactive and episodic [25]. This can be attributed to the difficulty of embedding guidelines within practice [26, 27], especially in a care home which is a complex environment with multiple

human and organisational impacts affecting provision of oral health care [28]. Studies and reviews looking at general health care provision in care homes [8, 29–31] highlight the complexity of these interventions and emphasise the need to support relationships and communication between health care staff and care home staff, residents and their families, to achieve desired health-related outcomes.

Relationship-centred care emphasises the importance of the quality of the relationships between residents, their families and the wider health care team [32]. It builds on the importance of the older person’s lived experience of frailty and chronic illness [33], with the clinical encounter occurring against a complex backdrop of personal sense-making and information seeking [34, 35]. Relationship-centred care highlights that care extends beyond the clinic and this work is typically distributed across a network of family, friends and carers [33]. Studies and reviews looking at general health care provision in care homes [8, 29, 30] highlight the complexity of these interactions and emphasise the need to support relationships and communication between health care staff and care home staff, residents and their families to achieve desired health-related outcomes.

Conceptualising dental care as including both daily oral care within care homes and the provision of dental services, this research sought to bring together evidence from individual studies involving discrete stakeholder groups to understand more about relationship-centred dental care for older people living in care homes. This review aims to contribute to the existing evidence base and suggest recommendations for improvement of dental care within residential care homes.

2 | Materials and Methods

2.1 | Objectives

The objective of this qualitative evidence synthesis was to explore issues relating to the provision of relationship-centred dental care for older people living in care homes, as perceived by care home staff, the dental team, family and residents. Barriers and facilitators are then discussed with the aim to suggest recommendations for improvement of dental care within residential care homes. Person-centred care recognises the importance of the older person’s lived experience of frailty and chronic illness [33], with the clinical encounter occurring against a complex backdrop of personal sense-making and information seeking [34, 35]. Relationship-centred care builds on this definition further to focus on the interactions between residents, families and practitioners and the contexts in which these occur [36]. Whereas person-centred care has an individualistic focus, relationship-centred care encompasses the complex personal collaborations which contribute to the overall experience and support network of care home residents [32].

2.2 | Method: Framework Synthesis

The protocol of this qualitative systematic review was registered in the International Prospective Register of Systematic Reviews (PROSPERO) database CRD42024550637 [37].

'Best fit' framework synthesis was the chosen method because it is recognised as an established and appropriate approach for synthesising qualitative evidence relating to stakeholders' experiences around accessing health care or services [38–40]. The method involves making use of a relevant, existing framework of themes (the so-called a priori framework) to organise, explore and test primary research evidence on a particular question. In this review, a relationship-centred care framework was chosen which incorporated both personal and organisational elements thought to be transferable to the provision of oral health care in care homes. The framework was derived from a study exploring the relationship-centred provision of palliative and end-of-life care in UK care homes [41]. The framework identifies the overarching theme that relationship-centred care is integral for providing high quality care and a 'home from home' [41]. Relationship-centred care is supported by three further themes: integration within health and social systems, digital inclusion and workforce support, each supported by the final theme: parity of esteem (Figure 1) [41].

These five principles and their definitions formed the five themes of the a priori framework and were modified slightly by the authors to focus specifically on dental care provision in care homes (Table 1). Following the published approach of 'best-fit framework synthesis', the evidence from relevant primary research studies was then coded against these broad a priori framework themes, and more specific sub-themes were identified using secondary thematic analysis [38, 39]. The qualitative review is aiming to determine whether, according to research studies, relationship-centred care, as defined according to the a priori themes, is being achieved and, if so, how and if not, why not.

2.3 | Inclusion Criteria for Primary Research Studies

To be included in this review, studies had to be qualitative in design and had to report views of dental services or daily oral

care for older people living in care homes from one or more stakeholder groups, that is, care home staff (including health care assistants, managers and nurses), the dental team, family or residents. The term 'care home' included residential care homes, nursing homes and sheltered housing. Only studies from North America, Australasia and Western and Northern Europe were included, as these regions were considered similar both economically and in terms of the intervention of interest. Studies needed to be in the English language and involve either interviews or focus groups that were transcribed *verbatim*. Eligibility criteria are detailed in Table 2. Given that the focus of this research was very much on eliciting rich explorations and in-depth understanding of people's experiences, attitudes and beliefs, the review and synthesis was limited to qualitative study designs alone. This is because the qualitative interpretive research paradigm is much more relevant to the review question than positivist, quantitative approaches, which were therefore excluded.

2.4 | Literature Search Strategy

Four electronic databases were searched for a 10-year period from January 2014 to January 2024: MEDLINE, CINAHL, ASSIA and PsycINFO. The search strategy combined free-text and database terms for older people, care homes, oral care or dentistry and qualitative research, in accordance with a published framework [42]. The search strategy was developed for the MEDLINE database utilising keywords and Medical Subject Headings (MeSH) terms (Table 3). The reference lists of all papers satisfying the inclusion criteria were manually searched for additional relevant studies. Two reviewers conducted independent screening of all retrieved citations against the inclusion criteria (R.P. and R.W.) with any disagreement resolved through discussion. Initial paper coding was carried out by R.P. and discussed in regular meetings with R.W. where any disagreements or discrepancies were resolved. Following paper coding, the data was transferred to NVivo Version 14 and further iterations of the thematic analysis discussed between R.P. and R.W. Final themes and framework analysis were independently critiqued by two further reviewers (C. C. and C. E.).

2.5 | Quality Assessment

Quality assessment of included studies' methods was carried out using the Critical Appraisal Skills Programme (CASP) checklist for qualitative research [43] (Table 4). No studies were excluded based on the quality assessment, as each study was identified as having a valuable contribution to existing knowledge and understanding. The aim was to gain an understanding of the reliability and rigour of the evidence to inform the interpretation of the findings.

2.6 | Data Extraction and Synthesis

A data extraction form was developed based on the key data required for the synthesis including study population, participants, settings and aims. Data for analysis consisted either of verbatim quotations from study participants or findings reported by authors. Two reviewers (R.P. and R.W.) independently extracted the evidence about stakeholders' and patients' views

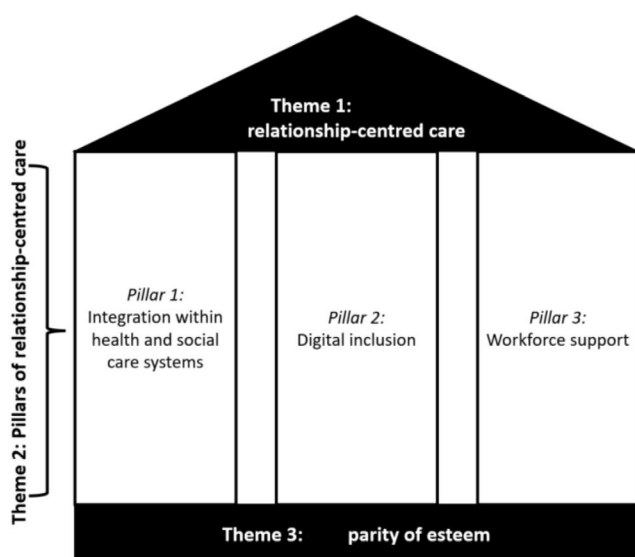


FIGURE 1 | From Bradshaw et al. [41].

TABLE 1 | The a priori coding framework.

Themes derived for coding	Definitions
Relationship-centred care	The dentistry and oral care provided should make every effort to ensure the older resident (family and carer) are treated in a manner you would want for yourself or a member of your family. Relationship-centred care that is, a homely environment within care homes and close bonds between residents and carers, is vital for high quality care.
Integration between dentistry, care homes and the wider health and social care systems	The ease of connection of the care home to dental care services and to the wider health and social care network. This is vital for managing residents' multiple and often complex needs. Integration and strong links with local dental practices that are easy to contact and access, is needed to support relationship-centred care. Long waiting times and generic, difficult to navigate service models are counteractive for this.
Digital services	Access to digital equipment and infrastructure facilitates delivery of relationship-centred care by aiding communication between staff, residents, families and healthcare professionals. It can also be used to provide dental education and monitoring of residents' oral hygiene habits. Outdated/faulty equipment or poor Wi-Fi connections are unhelpful here.
Workforce support	Having sufficient skilled staff (care home workers and the dental team) who feel supported both practically and emotionally. Staff sickness, high staff turnover and difficult working conditions can reduce the ability to deliver high quality relationship-centred care. Availability of training can support the workforce to feel confident providing quality care.
Parity of esteem	Parity of esteem represents the respect and value of dentistry and oral health care within care homes and its position in relation to other medical and basic care needs such as personal hygiene. Furthermore, care staff themselves can often feel that their efforts and expertise are undervalued within the wider healthcare system.

*Adapted from Bradshaw et al. [41].

from the results sections of all the included papers. An inductive approach was taken whereby the raw textual data was interpreted by R.P. and R.W. to develop the concepts and themes [44]. First-order paper coding was initially performed to organise the data and thematic saturation was determined by no further sub-themes emerging. The data were then coded under the appropriate a priori theme and, if relevant, a more specific sub-theme was created. The creation of these new sub-themes was an iterative process, and the themes changed as the reviewers worked through the studies. Each reviewer therefore produced a list of new sub-themes, which offered greater depth to the five broad themes of the a priori framework. This process was carried out manually with a final coding process carried out within NVivo version 14 which generated further discussion and resolution of any disagreements. The final list of themes and sub-themes, and the data supporting them, was considered and discussed by the full review team.

3 | Results

3.1 | Characteristics of Included Studies

The search for primary research studies generated 235 unique citations. The full text of 26 studies was retrieved as potentially relevant, of which 14 studies [11, 17, 45–56] satisfied the

inclusion criteria. One additional relevant study was identified from the references of included studies [57]. Two of the research studies [51, 56] used the same qualitative data but reported on different aspects so were both included. This resulted in a total of 15 papers published between January 2014 and January 2024. The reasons for exclusion of 12 studies are detailed in Figure 2 alongside the retrieval, screening and selection processes. A summary of the main characteristics of the included studies is given in Table 5.

The numbers of participants in each study ranged from 11 to 45, with one study not stating the number of participants [55]. The majority of studies explored the opinions of care home staff [11, 17, 45–51, 53, 54, 56, 57]; only four studies included residents and family members as participants [17, 45, 47, 54] and five included oral health care professionals [17, 45, 48, 52, 55]. Six of the fifteen studies were conducted in the UK and Europe [11, 17, 45, 47, 48, 55] and six were conducted in Australia [46, 49, 50, 52, 53, 57]. Three studies were conducted in the USA [51, 54, 56], with two of these studies reporting on the same data set [51, 56].

3.2 | Quality of Included Studies

Most of the 15 included studies had an acceptable level of methodological quality. The more recent papers [17, 46–49] clearly

TABLE 2 | Data extraction form.

Data extracted by				Date		
Inclusion/Exclusion abstract screening						
Question				If Yes	If No	
1	Is the research paper written in English?			Continue	Exclude	
2	Does the paper explore dentistry or oral care for older people living in care homes?			Continue	Exclude	
3	Does the study evaluate individuals’ views and experiences (i.e., individuals’ opinions, preferences, attitudes) to the experience of dentistry or oral care			Continue	Exclude	
4	Does the research study use interviews or focus groups for collection of audio recorded and transcribed verbatim qualitative data?			Continue	Exclude	
5	Is the study setting the UK, North America, Canada, Australia or Western Europe?			Include	Exclude	
If answer is No to any of these questions, Exclude . If all answers are Yes, Include .						
Full paper screen						
Study details	Author	Country	Type (interview/ Focus groups):			
Participants	Stake holder ‘type’	Residents	Dentists	Care workers	Care managers	Family members
Age (mean/range)	Median	Residents	Family			
Gender	Residents	Family				
	Ethnicity of subjects					
Care Setting	Nursing home	Care home				
Intervention	Details of ‘care’ under consideration (i.e., daily oral care or intervention by dental services)					
This papers research Question						

reported the relationship between researcher and participants. This may reflect progression in research techniques, whereby the researchers' potential bias and influence on results is more likely to be considered. All studies articulated clearly their aims of research which were appropriately addressed by a qualitative methodology and research design, summarised in Table 5. Further care home characteristics were not clearly stated in the included studies for example, size, staffing, funding model. This information would have been useful to help provide context to the reporting of qualitative results. The recruitment strategy was generally appropriate for each study. However, one paper did not clearly specify how participants were selected or the number of participants that were interviewed [55]. This study also lacked detail regarding the structure of the interview and there was no in-depth description of the analysis process. One paper [54] did not mention details regarding ethical approval and gave few details of analysis following transcription of interviews. Two papers based on the same study data [51, 56] had 'Institutional Review Board approval' but it was unclear whether further

approval had been sought from an ethics committee. However, despite these limitations it was felt that all papers had value in that they contribute to existing knowledge and provide qualitative evidence to help identify areas where further research is required. Therefore, overall, the evidence base was generally of good quality and its findings considered to have rigour and reliability.

3.3 | Synthesis and the Conceptual Framework

The synthesis identified supporting evidence for all five of the broad a priori themes from the relationship-centred care coding framework: *Relationship-centred care*, *Integration within the wider health and social care systems*, *Digital inclusion*, *Workforce support and Parity of esteem*. This suggests that the relationship-centred care a priori coding framework was appropriate. The synthesis also led to the development of multiple, context-specific sub-themes. For the full list of sub-themes, see Table 6

TABLE 3 | MEDLINE search strategy.

1.	exp Aged/
2.	(older or elder\$ or frail\$ or depende\$).tw.
3.	1 or 2
4.	assisted living facilities/or homes for the aged/or nursing homes/
5.	(care\$ adj1 home\$).tw.
6.	(nurs\$ adj1 home\$).tw.
7.	(sheltered adj1 accommodation).tw.
8.	(sheltered adj1 hous\$).tw.
9.	(assisted adj1 living).tw.
10.	4 or 5 or 6 or 7 or 8 or 9
11.	Geriatric Dentistry/or Dental Care for Aged/
12.	(mouth adj1 care).tw.
13.	(oral adj1 care).tw.
14.	(dent\$ adj1 care).tw.
15.	dentistry.tw.
16.	(oral adj hygiene).tw.
17.	11 or 12 or 13 or 14 or 15 or 16
18.	exp Qualitative Research/
19.	(questionnaire\$ or survey\$ or interview\$ or focus group\$ or view\$ or experienc\$ or opinion\$ or attitude\$ or perce\$ or prefer\$ or qualitative).tw.
20.	18 or 19
21.	3 and 10 and 17 and 20
22.	limit 21 to yr. = "2014-Current"
23.	remove duplicates from 21
24.	remove duplicates from 22

and, for examples of the supporting data, Table S1. The themes and sub-themes and key supporting evidence are detailed below. Quotes have been attributed using the same terms as the primary research paper. However, in some cases that is, focus groups, individual quotes may be assigned to broader groups if they have not been specified. The four main stakeholder groups and their varying terminology include Dental care professionals—dentists, dental hygienists, dental therapists, dental nurses, oral health therapists; care home staff—care assistants, care home workers, nursing staff, carers, care home professionals; residents and their families/friends; management—care home directors and administrators.

3.4 | Synthesised Findings

The data supported use of the a priori framework key themes of *relationship-centred care*, *integration of care*, *digital services*, *workforce support* and *parity of esteem*. Findings in support of

each theme are described below. Further subthemes were created via an iterative process, offering greater depth to the five broad themes of the a priori framework. Final lists of themes and sub-themes, and the data supporting them, were considered and discussed by the full review team. Although the overarching themes apply generally, it should perhaps also be noted that the organisation and regulation of dental care can vary by country. For this reason, the location of the supporting evidence is noted to provide additional context.

3.4.1 | Theme 1: Relationship-Centred Care

The over-arching principle of quality care is ensuring that it is 'relationship-centred' and of a standard that one would want for themselves or a member of their family. One key facilitator for relationship-centred care is the importance of residents being seen by a dentist in a setting that is familiar to them:

When they [dentists] come and do it here, the resident still has their own bed and they can wake up and eat and they are not too frightened.

Director/Nurse/Care assistant, Australia [53]

In addition to this, the benefit of care staff working to create a homely and comforting environment in which oral care is integrated was also seen as important.

Highlighted was the impact of care staff knowing individual residents well and being interested in their wellbeing. Existing relationships helped care staff to notice when a resident's presentation changed and actively consider whether a dental issue could be the cause. The data highlights that care staff recognise this as an important skill which takes time and effort as subtle signs can be missed:

We had a gentleman upstairs and [while] I was feeding, he was grimacing [so] I said, do you have a tooth ache and he goes, yes and it was his back tooth [which] was half off.

Care staff, Australia [57]

The data also highlights importance of respecting a resident's wishes, working to support oral care that is in the residents' best interest and being mindful that a care home is a resident's home first and foremost. The data shows that care staff seem to consider these complexities and the need for developing a positive culture of collaborative working:

So it's developing a culture within the nursing home; getting the residents and the families involved. Getting the families involved is so important for it to be a successful program.

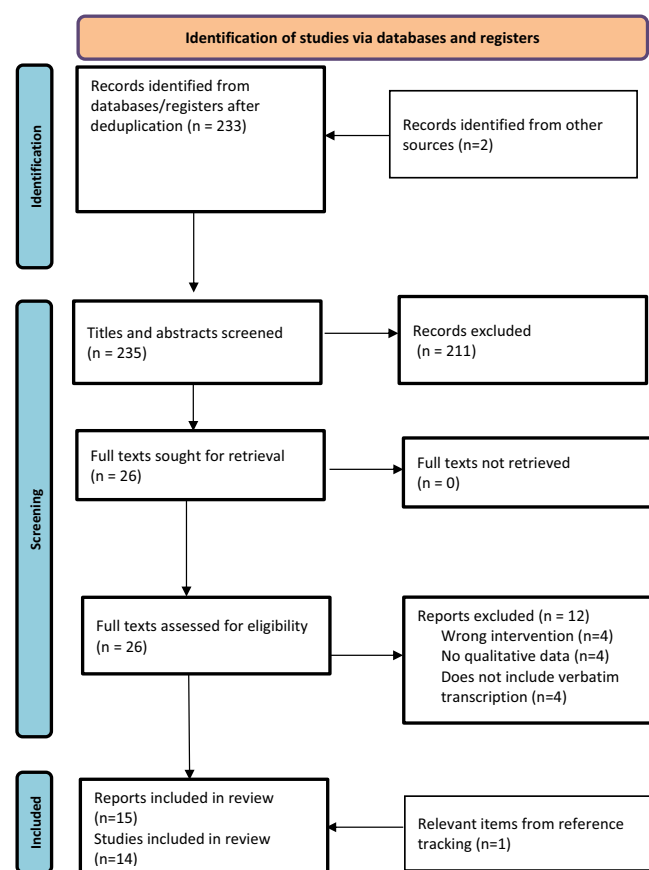
Oral Health Therapist, Australia [52]

The data shows that care resistance behaviour around oral health is a barrier to relationship-centred care, and this is highlighted by care staff as something they navigate daily:

TABLE 4 | Quality assessment of included studies using the CASP tool.

No.	Studies	A	B	C	D	E	F	G	H	I	J
1	Aagard et al. (2020)	✓	✓	✓	✓	✓	?	✓	✓	✓	✓
2	Hoang et al. (2018)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3	Johnson et al. (2021)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
4	Gomez-Rossi et al. (2022)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5	Patel et al. (2021)	✓	✓	✓	✓	✓	?	✓	✓	✓	✓
6	Patterson Norrie et al. (2019)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	Tynan et al. (2018)	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓
8	Maramaldi et al. (2018)	✓	✓	✓	✓	✓	✗	?	✓	✓	✓
9	Britton et al. (2015)	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓
10	Hearn and Slack-Smith (2016)	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓
11	Taverna et al. (2014)	✓	✓	✓	✓	✓	✗	✗	?	✓	✓
12	Glover and Kabir (2021)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
13	Wardh and Wikstrom (2014)	✓	✓	✓	?	?	?	✓	✗	✓	✓
14	Villarosa et al. (2018)	✓	✓	✓	✓	✓	✗	✓	✓	✓	✓
15	Maramaldi et al. (2019)	✓	✓	✓	✓	✓	✗	?	✓	✓	✓

Note: Quality criteria: A = Was there a clear statement of the aims of the research? B = Is a qualitative methodology appropriate? C = Was the research design appropriate to address the aims of the research? D = Was the recruitment strategy appropriate to the aims of the research? E = Was the data collected in a way that addressed the research issue? F = Has the relationship between researcher and participants been adequately considered? G = Have ethical issues been taken into consideration? H = Was the data analysis sufficiently rigorous? I = Is there a clear statement of findings? J = Is the research valuable? ✓ = Yes, ✗ = No, ? = Can't tell.

**FIGURE 2** | PRISMA flowchart detailing search and study selection process. From: Page et al. [58].

It's the residents that have the dementia and behaviors where it is really difficult...and you can't make them understand what you're doing so that's very difficult.

Care home management, USA [51]

Sometimes it comes down to throwing punches and we've got to duck out of the way and it's really quite labour intensive so naturally we wouldn't want to aggravate anyone any more that's in that state of agitation, so we go away.

Carer, Australia [46]

Fear of physical aggression from residents directed to care staff was a clear barrier to relationship-centred care, and a common reason that oral hygiene measures were not provided or possible.

3.4.1.1 | Sub-Theme 1: Assigning Responsibility to Daily Oral Care and Dentistry. The data highlights that there is a lack of clarity when assigning responsibility for oral care. There is inconsistent access to a dental professional for residents in care homes. Medical doctors and nursing teams may have regular input with residents, but do not always see the mouth and teeth as a domain to get involved with:

Physicians who come into the facility will not look at the mouth. Physicians don't look at the teeth ... or in the mouths

Focus group (administrators and directors), USA [56]

TABLE 5 | Main characteristics of the 15 included studies.

Study number	Author (year), country	Study aim	Participants (setting)	Data collection method
1	Aagard et al. (2020), Denmark	Explores the implementation of a 'shared oral care intervention'.	Nursing home residents, care professionals, assistant nursing home managers, three dentists and the project dentist (41 participants from 3 nursing homes).	22 face-to-face and situated interviews and 6 focus groups.
2	Hoang et al. (2018), Australia	Examine aged care workers' views on the implementation of 'Better Oral Health in Residential Care Training' at their facilities	Care workers either registered nurses, enrolled nurses or care assistants (20 participants from 13 care homes).	Semi-structured interviews.
3	Johnson et al. (2021), UK	Explores care home residents' views and perspectives of oral care in care homes.	26 residents and 4 staff from 5 care homes.	Semi-structured interviews.
4	Gomez-Rossi et al. (2022), Germany	Explore barriers and facilitators for oral health policies, including oral hygiene and dental healthcare, among healthcare workers within care homes.	2 carers, 4 section managers, 2 staff managers and 3 dentists (from 2 care homes).	Semi-structured interviews.
5	Patel et al. (2021), UK	Report on findings from the NIHR funded Fluoride Interventions in Care Homes (FInCH) Trial, in relation to the challenges and issues of access to dental care for older people in care homes.	9 care home managers and 14 care home team members (3 residential and 3 nursing homes).	Open-ended interviews and focus groups.
6	Norrie et al. (2019), Australia	Investigate the perceptions of nursing and management staff in residential aged care facilities regarding oral care.	One focus group included 5 management staff: nurse unit manager, director of nursing and the CEO. The other focus group was for 7 nursing staff (from 2 facilities).	Focus groups.
7	Tynan et al. (2018), Australia	Investigate the impact and experience of an integrated approach to oral health.	3 registered nurses and 2 enrolled nurses from the integrated program; and 5 registered nurses and 3 enrolled nurses from facilities without the program.	1 focus group and 8 in-depth interviews.
8	Maramaldi et al. (2018), USA**	Propose interventions that might increase the opportunity to provide oral health care and oral cancer screening in care homes.	35 participants who were either an Administrator, Director or Director of Nursing (from 8 care homes).	1 interview, 6 mini-focus groups and 2 focus groups.
9	Britton et al. (2015), Australia	Investigate the perceptions of dental professionals—dentists, dental hygienists and oral health therapists (OHT)—of barriers and enablers they face providing oral care to residents in aged care facilities.	9 dental hygienists, 3 OHTs and 5 dentists from across Australia.	Semi-structured interviews.

(Continues)

TABLE 5 | (Continued)

Study number	Author (year), country	Study aim	Participants (setting)	Data collection method
10	Hearn and Slack-Smith (2016), Australia	Investigate the views of staff working in residential aged-care facilities on how to engage dental professionals in providing better oral care for their residents.	30 staff from six residential aged-care facilities (6 directors of nursing, 14 clinical nurses and 10 personal care assistants).	Open-ended interviews.
11	Taverna et al. (2014), USA	Explore the influence of resident autonomy on their oral hygiene care.	12 residents and 7 care staff that resided or were employed in a single long-term care facility.	Structured interview.
12	Glover and Kabir (2021), UK	Explore the potential barriers and opportunities of the oral health care pathway for residents, care staff and the dental team.	35 residents/friends and family, 7 care home workers, 2 dentists and 1 dental nurse (1 residential care home and 1 dental practice).	Semi-structured interview.
13	Wardh and Wikstrom (2014), Sweden	Explore the effects of oral health care intervention using oral care aides.	Oral care aides and dental hygienists from 1 nursing home.	Interviews—number of participants not stated.
14	Villarosa et al. (2018), Australia	Explore the perceptions of residential aged-care facilities care staff towards the provision of oral health care following implementation of “Better oral health in residential care” guidelines.	12 care staff from 2 residential aged-care facilities.	1 focus group.
15	Maramaldi et al. (2019), USA**	Explore the perceived benefits, barriers and ability to provide oral health care and oral cancer screening.	35 participants who were either an Administrator, Director or Director of Nursing (from 8 care homes).	1 interview, 6 mini-focus groups and 2 focus groups.

Note: **Indicates that two papers by Maramaldi et al. used the same qualitative data but reported on different aspects, so they were both included.

TABLE 6 | New concepts from the secondary thematic analysis as sub-themes within the four concepts of the a priori framework.

Themes and sub-themes	A priori framework concepts and definitions of new sub-themes
Theme 1: Relationship centred care	The dental care provided should ensure the older person is treated in a manner you would want for yourself
Sub-theme 1: Assigning responsibility to daily oral care and dentistry	Individual, carer and wider health care systems responsibility for oral health.
Sub-theme 2: Residents feeling trapped/powerless, with resignation and lack of agency towards their oral care	Negotiating autonomy and vulnerability are integral to supporting daily oral health care.
Sub-theme 3: Relevance of dental health to residents' personal identity and maintain sense of self	Mouth care does not just prevent disease it also provides fresh breath and confidence in eating, talking and speaking.
Theme 2: Integration between dentistry, care homes and the wider health and social care systems	How connected the care home is with local dental practices and how easy it is to seek advice and treatment for residents. Exploration of barriers and facilitators.
Sub-theme 1: Organisational	Communication and organisational links between those providing care can be a barrier or facilitator to care
Sub-theme 2: Financial	Cost of care and complexity of funding care
Sub-theme 3: Legislation and contractual	Difficulty navigating complex health care systems and understanding of eligibility for funded care.
Sub-theme 4: Physical	Availability of specialised and accessible care, waiting times and location of care (off site and on site) is moderated by level of dependence and access to support
Sub-theme 5: Adaptive, individualised care based on context	Guidelines and regulations can be a barrier or facilitator to the provision of care
Theme 3: Digital services	Digital equipment and infrastructure for communication with healthcare professionals, dental education and oral health habit monitoring of residents.
Sub-theme 1: Facilitators	Access to digital equipment and infrastructure facilitates delivery of relationship-centred care by aiding communication between staff, residents, families and healthcare professionals
Sub-theme 2: Barriers	Outdated/faulty equipment or poor Wi-Fi connections are unhelpful here
Theme 4: Workforce support	How care staff and dental team are supported, practically and emotionally, to deliver high quality care. Including provision of training opportunities.
Sub-theme 1: Time pressures and staff turnover	Staff workload and priorities affect the provision of dental care
Sub-theme 2: Relational working between care home staff and the dental team	The presence of a member of the dental team within the care home and whether this improves oral health care
Sub-theme 3: Practical techniques for oral hygiene	'Resistive behaviours' of both residents and professionals affect the provision of care
Sub-theme 4: Staff training opportunities and knowledge	Education and training of both carers and dentists moderate the care provided

(Continues)

TABLE 6 | (Continued)

Themes and sub-themes	A priori framework concepts and definitions of new sub-themes
Sub-theme 5: Working conditions for the dental team	Working within care homes can be seen as a barrier compared to conventional primary care practices
Theme 5: Parity of esteem (respect for oral health care)	Respect and value of dentistry and oral health care within care homes and its position in relation to other medical and basic care needs such as personal hygiene.
Sub-theme 1: Respect for dentistry compared to other medical issues	Is dentistry seen as important as other medical issues or self-care such as regular hairdresser appointments to care staff and residents' friends and family.
Sub-theme 2: Value the dental team and care staff place for supporting oral health within care homes	The importance of residents' oral health to the dental team and how care staff perceive the dental team's presence within care homes.

There appeared to be a tension between the value of prescriptive roles for staff and the importance of staff feeling personally responsible for ensuring that care was provided. It was often reported that roles and responsibilities were rarely well-defined [50, 52, 57]; however, the question of who was responsible for daily oral care and dentistry was influenced by other issues including: the availability or lack of resources [11, 47, 53]; differing priorities and perspectives [17, 37, 51, 56, 57]; the availability of family members [17]; and the need to support independence for less dependent people [48, 49, 54]. This complex network of interactions shows that barriers to relationship-centred care can exist when roles are not clearly defined, particularly for those who are unable to advocate for themselves or lack family support.

3.4.1.2 | Sub-Theme 2: Residents Feeling Trapped/Powerless, With Resignation and Lack of Agency Towards Their Oral Care. Although a care home is now a resident's home, there is a clear distinction between that and their previous living environment. Moving into a care home requires adjustment and adaptation to new routines and relationships. With one study highlighting how a person may avoid a care home environment until eventually they can no longer resist.

[I fell at home and] well that's when they sort of discovered I was around and then you see, I was in my nineties you see, so that was it, the ball was rolling, then they got me!

Care home resident, UK [47]

Care home staff reported in three studies that they recognised that the daily act of providing dental care was complex and presented challenges for residents' sense of vulnerability: the intimacy of the mouth and the need to respect privacy had to be balanced with a need to provide care to prevent dental pain and infection; negotiating care required an intimate understanding of that older person; and time and flexibility were needed to meet an individual resident's needs and wishes [11, 46, 57]:

... with a lot of residents in a nursing home facility, they can't actually do their own oral care, so they're relying on care staff to do that.

Care staff, Australia [57]

Dementia and other complex needs were reported as a barrier to oral health care [11, 45, 51]. For those residents who lacked agency to perform their own oral care, the responsibility often lies with caregivers who see this as a task to be completed quickly, methodically and without empathy:

... what you could do to actually help them open their mouth, cause you're not allowed to force anything in there...if they do open their mouth and you do get it in then they close straight away so you can't sort of ram it around in their mouth...I don't know how you actually could do a proper cleaning of teeth in a dementia wing.

Care home professional, Australia [46]

This description of oral health care as a forceful process is a barrier to relationship-centred care, whereby the act of oral hygiene results in discordance between residents and care staff.

3.4.1.3 | Sub-Theme 3: Relevance of Oral Health to Residents' Personal Identity and Maintain Sense of Self. It is well known that oral health is important for eating, speaking and confidence and its importance for personal identity was identified within six studies [45, 47, 49, 51, 52, 54]. The ability to build relationships depends on the confidence to interact with other people, with teeth being a strong indicator of sense of self. For example, the significance of maintaining teeth within the mouth, whether natural or prosthetic [46, 49]:

To me, it's all I've got left of my teeth but I'm trying to keep them. I want to die with some [teeth] left in my mouth.

Resident, Australia [46]

There was a balance between respecting the autonomy of less dependent residents and finding ways to support them with oral care. If a resident wants to be in charge of brushing their own teeth it can be difficult for staff or the dental team to contradict this, even if their oral hygiene technique is inefficient. This highlights the importance of the relationship between the resident and their care givers in achieving an outcome of oral health.

There are certain things I should be able to do by myself. But if not, I'll ask for help.

Resident, USA [54]

Some [residents] are adamant that they can brush their own teeth. It is quite a tricky situation to get the carers to maintain their oral health.

Oral health therapist, Australia [52]

This contrasts with fully dependent residents whereby staff felt oral health was no longer a key aspect of their personal identity:

...when people have got dementia... oral care to them just kind of goes out the window, it's not really a focus or an important part on their behalf.

Care staff, Australia [57]

3.4.2 | Theme 2: Integration Between Dentistry, Care Homes and the Wider Health and Social Care Systems

Relationship-centred care includes the wider context of interactions between communities, professionals and health care sites. The ease of connection of the care home to dental services is reliant on the presence of organisational structures and processes. All fifteen studies reported issues relating to the integration of dental care in care homes including organisational, financial, legislative and contractual, physical barriers and the need for adaptive, contextualised care.

3.4.2.1 | Sub-Theme 1: Organisational Factors. Organisational issues can mean that some care home residents are unable to access dental appointments:

So, it's like going back and forth in a circle and the poor resident in the end, some of them never got the treatment they needed. Some of them ended up with, em, passing on, God bless their soul, without getting any treatment.

Care staff, UK [11]

For those residents who manage to obtain a dental appointment they are often waiting a long time for transport and other related services:

Our resident went to the Dental Service. He left at 9:00 in the morning and got back past 11:30 at night." – nurse, because "the non-emergency transport cancelled, he's diabetic, he was there without food, without insulin.

Care home manager, Australia [49]

Often care homes have limited transport available for appointments or rely on ambulance transport services. Commonly, there is a cost related to care staff accompanying patients externally. Therefore, care home residents are often solely reliant on family members and friends to help them attend dental appointments:

I have had to take over the driving, I don't like it but otherwise we couldn't get there.

Friends and family, UK [17]

3.4.2.2 | Sub-Theme 2: Financial Factors. Finance was identified as a barrier to dental care which was seen as costly by residents and their families who complained about a lack of transparency around free or subsidised care [11, 17, 49, 53, 57]. Dentists too felt inadequately compensated for the extra time needed to treat people with severe physical and cognitive disability [48, 52, 53]. The financial costs of attending domiciliary visits were seen as less profitable than working a day in a fixed clinic, with recommendations to build a dental chair within the care home:

In my opinion, a simple solution would be to simply add money for a chair, in every care home, for a regular prophylaxis assistant who does her work there regularly.

Dentist, Germany [48]

Care staff highlighted the cost of transport to dental appointments outside of the care home and that this discouraged residents from seeking dental treatment [11, 17, 50, 53, 56].

If they haven't got money to pay for the dentist how are they going to have money to pay for their transport? So, who is then going to fund that transport.... The ones who are local authority that are bed bound that

can't leave the home or if they can they need to go stretcher by transport, that don't have any money they are the ones that struggle when they got a toothache... if they do need treatment to have somewhere to go, where transport is then arranged for them to go and have their dental health care. Especially if they are residents that have no money. They are the ones we worry about, the ones who have no money are the ones that are left behind.

Care home staff, UK [11]

Relationship-centred care depends on genuine relationships that extend between communities, cost and motivations for providing care can create barriers when funding is not seen to be adequate.

3.4.2.3 | Sub-Theme 3: Legislation and Contractual Factors. There was often misunderstanding and lack of information when accessing dental care, with one study reporting a fear of making a mistake when filling out the necessary paperwork:

If you fill this form out 'wrong' you are liable for charges. It makes you feel like oh my gosh I don't want to fill this form out because I am only filling it out from the information that I do have but if I am wrong then I can be in trouble or giving the wrong information even though there's nowhere for me to collect the information from.

Care home staff, UK [11]

There were also concerns about the consent process which delayed care home residents accessing care [17, 53]. Despite positive intentions, one study noted that although national guidelines were adhered to, they only considered dietary planning and did not result in access to dental services or daily oral care for the residents [54]. Guidelines can support relationship-centred care by providing a framework to organisations, however, they must be relevant and useful for those working directly with residents.

3.4.2.4 | Sub-Theme 4: Physical Factors. The studies identified physical barriers to accessing dental care such as a lack of equipment including hoists. There were issues with the design of buildings, for example steps leading up to a dental surgery and unsuitable car parking arrangements [11, 17, 50, 53]:

Unfortunately, it is difficult for anybody who is not mobile to get over there (to access the oral health facility). If you have got someone who is bed bound, or even anyone who requires a lift or assistance with transfers to any chair. Transferring to the Dentist chair would be impossible. That is a barrier.

Nurse, Australia [50]

Related to this, managers in one study reported being worried about residents leaving the care home to visit a dentist [17], and

lack of adequate oral hygiene equipment meant in-house care could be compromised [45]. Having suitable equipment available supports relationship-centred care by ensuring that residents and their care teams feel safe and confident providing and acquiring oral care. One solution was to bring dental services on-site by utilising mobile dental services or establish an in-house dental clinic or chair [11, 48, 49, 57]:

A dentist chair, just for basic oral care, like not so much ripping out teeth and doing all this great work, but that would be really good here.

Care home staff, Australia [57]

3.4.2.5 | Sub-Theme 5: Adaptive Individualised Care, Based on Context. Successful integration of dental care required a contextualised approach, whereby pre-existing relationships between care staff and care home residents help facilitate delivery of care, rather than relying on external guidelines [11, 48, 49]. Adjusting delivery of care for each resident eased their acceptance of dental care:

Some bite, some try to punch you, or I don't know what. You need time, so I can't just get in there, ask them to open their mouth quickly, close their mouth and that is it. So, we take little presents, little boxes with us or little toothpaste, one wants it, the other comes with a doll. You have to be prepared for that.

Dentist, Germany [48]

Often 'workarounds' existed for care home residents unable to access a dentist [11, 49]:

If there's a dental emergency and generally that is pain, so we would call the GP to manage the pain.

Manager, Australia [49]

3.4.3 | Theme 3: Digital Services

Digital services and equipment were identified as being useful for supporting relationship-centred care by enhancing communication between health care professionals and for monitoring oral health initiatives. The data mainly considered the use of digital services when it comes to staff training, with both positive and negative elements considered:

'Online is more accessible for everybody. Because if we can do that in our own time, and because of our different shifts that might be an easy way to get it done.

Carer, Australia [46]

I've done it [online learning] and flicked through it, guessed the questions at the end, it's not training.

Care home professional, UK [17]

Communication between healthcare professionals is aided by electronic records and clear referral pathways to share information effectively. Having functional digital services in place can help alleviate confusion around referral pathways into dental care:

Probably because we don't know a lot about - you know, you talk about your referral pathways and that happens in various informal ways, but we certainly don't have a formal, okay, now we follow this process.

Manager, Australia [49]

Digital services can also help reduce barriers to accessing in-person advice and support from dental professionals:

The tele-dentistry appointment is really good. If (the Oral Health Therapist) meets a problem which needs further suggestion, you know advice, it is easy to ask the Dentist on the spot. And as the representative from here I listen.

Nurse, Australia [50]

3.4.4 | Theme 4: Workforce Support

The data showed that staff workload and priorities affected provision of relationship-centred care. The first sub-theme explores issues such as a general lack of time, staff shortages and conflicting priorities between oral care and other responsibilities, such as basic personal hygiene of residents. Four further sub-themes highlight the importance of relational working, the desire for practical oral hygiene techniques, staff knowledge and training opportunities and working conditions for the dental team.

3.4.4.1 | Sub-Theme 1: Time Pressures and Staff Turnover. Lack of time clearly impacted on delivery of relationship-centred care, with one study noting that residents with dementia or complex needs made it even more difficult to meet time constraints.

One of the biggest barriers is the resident themselves, staff and timing. Staff, carers are often really rushed and there's not a lot of them. So for them it's run, run, run. Teeth take a long time, it's not a good job.

Nurse, Australia [49]

Time constraints with our staff is the real, is the main problem....like you set them up to brush their teeth..., but you kind of leave them to it rather than make sure it's done probably correctly. ...Sometimes we have people ring in sick like...one day we were 2 carers down... so that sort of makes things a little bit more difficult because then you're doing more in a shorter space of

time and then you're doing less for each person really. Potentially oral health could be overlooked easily.

Care worker, Australia [46]

Furthermore, high staff turnover was noted as an issue particularly as this also affects delivery of staff training [46, 49].

[staff turnover becomes] a barrier with consistency to most things; it's not just in oral health, but for the whole general care of the residents.

Care home manager, Australia [49]

3.4.4.2 | Sub-Theme 2: Relational Working Between Care Home Staff and the Dental Team. One key issue highlighted in all of the included studies, except two [46, 47] was the need for in-person support between members of the dental team and care staff. Care staff felt their confidence improved with increased presence and connection with dental care professionals [45, 50, 53, 55]:

They (dental practitioners) come with their professionalism and say, well, if you do so and so, then it will be much better.... It is nice to know, if it is the right thing you do.

Care professional, Denmark [45]

Having regular visits and a familiar face can help support care home residents with dementia and other complex care needs. For example, care staff are aware that routine personal hygiene is easier to achieve with consistent members of staff. Therefore, having the same member of the dental team visit may help residents feel more relaxed and able to cooperate with care:

Regular dentists would visit and then it would help, and I think with the residents living with dementia if that consistency is there as well it becomes, okay... so that's become the routine for them and so there's no issues getting their toenails cut and all that so.

Care staff, UK [11]

However, some studies demonstrated resistance from care home staff to an in-person dental presence [48, 51–53, 55]:

Nobody cared, they'd just sigh and say, 'here come those dental people.'

Dental hygienist, Sweden [55]

3.4.4.3 | Sub-Theme 3: Practical Techniques for Oral Hygiene. Many of the studies identified the need for in-person tips and tricks for carrying out oral hygiene procedures [48, 53], particularly in relation to residents with dementia or other complex needs [17, 45, 46, 50, 56, 57]. Practical techniques can help support relationship-centred care by ensuring that care staff feel confident to provide high-quality oral hygiene for residents in their care.

If someone has dementia or Alzheimer's and you want to get into a mouth it is very difficult; the muscles of the face are very strong and there is no way that carers have the skill to get the mouth open.

Oral health therapist, Australia [52]

Care staff expressed a desire for information to support them when carrying out oral hygiene procedures:

...We need to get their dentures out or a way for them to let us clean their teeth instead of them getting... upset or abusive and hitting us...

Care staff, Australia [57]

3.4.4.4 | Sub-Theme 4: Staff Training Opportunities and Knowledge. Thirteen of the included studies described opportunities and implementation suggestions for oral health care training and knowledge acquisition [17, 45, 46, 48–54, 56, 57]. In-person training was a popular suggestion, whereby practical elements could be demonstrated and experiences shared of what works and what doesn't rather than just a didactic or e-learning style delivery [17, 46, 48–51].

The actual training that we had was very helpful in that it showed us techniques on how to actually get into the side of a mouth of somebody that's a little bit resistive.

Care staff, Australia [46]

Although a mix of both styles was suggested to be beneficial in a care home environment whereby all staff may find it difficult to attend face-to-face training:

Yes, a combination would probably be ideal. Everybody has different learning styles. A face-to-face issue—section would be good, but then not everybody can attend that. So later down the track it fades, but at least then if it is online you can go and refresh.

Nurse, Australia [49]

Five studies reported no awareness of training being provided previously [48, 49], or inadequate training [50, 52, 54]:

But as for actual training, I've never had any since I've been here. I've never had any, hints or tricks on how to do it, you just put a toothbrush in their mouth and just hope for the best.

care staff, Australia [46]

Lack of knowledge and the role of assessments and guidelines was highlighted in three studies [46, 49, 50] but in some cases, although an oral health assessment was implemented, it did not help to improve knowledge:

I think we flew by the seat of our pants as far as oral health assessments go and it was more or

less just going through just the piece of paper, the assessment, the oral health assessment, doing what it said, not really knowing what you were looking for.

Care home professional, Australia [50]

3.4.4.5 | Sub-Theme 5: Working Conditions for the Dental Team. Six studies considered the workforce support for the dental team attending care homes and the impact this had on delivering quality care [11, 17, 48, 51, 52]. Limited equipment, difficult postural positions and uncooperative care home residents resulting in 'wasted journeys' with a lack of financial incentive were key barriers to relationship-centred care. Whereby, relationships are not supported if care providers do not feel their working environment takes their needs into account.

Less than optimum working conditions, lack of suitable equipment and poor remuneration, often resulting in no dental services, particularly when compared to their more usual work environment with: ... a nice controlled surgery where you are seeing one very capable adult... it is much easier staying in my practice all day. If...you asked 100 dentists... You would be lucky if you found ten that say yes I would be willing to do it.

Dentist, Australia [52]

During a domiciliary visit, the dental care professional is in a compromised position ... it's not practical and there is a lot of equipment you need to take with you and it is not always possible to ... it also limits your diagnostics such as x-rays.

Dental care professional, UK [17]

3.4.5 | Theme 5: Parity of Esteem

Parity of esteem represents the respect afforded to dentistry and oral health care within care homes. This wider web of society and economic contexts can create a barrier to relationship-centred care if dental teams, residents and care staff do not value oral health care or oral hygiene. We consider its value in relation to other medical and basic care needs such as personal hygiene. Care staff themselves can often feel that their efforts and expertise are undervalued within the wider health-care system [41]. The studies highlighted dental professionals' opinions of providing oral care within care homes as well as care home staff members' confidence in delivering oral care.

3.4.5.1 | Sub-Theme 1: Respect for Dentistry Compared to Other Medical Issues. It was clear from the data, as all the studies except two [47, 55] highlighted the difficulties of attending to oral care in a busy care home environment with multiple conflicting priorities:

The mouth is a small part of the whole human being, so the mouth is just not first on our list. Many times,

you have to choose between the most basic care and the choice is on a clean pair of trousers and a clean diaper.

Carer, Denmark [45]

This issue was exaggerated in cases of poor co-operation from residents themselves such as:

If the resident is resistive, and bites or kicks or scratches, they're [staff] going to focus more on making sure that they're clean and dry and toileted over whether their mouth gets clean unfortunately... and that happens a lot.

Management, USA [51]

Family and friends also echoed care staffs comments, with similar issues prioritising the various health care needs of their relatives [17, 49, 51, 57]

It's so difficult to get him there and I have so many other things I have to do like doctors and hospitals and everything. It is just not a priority, I can't do everything.

Friends and family, UK [17]

However, the data did also highlight an awareness of care staff to the importance of a healthy mouth to overall systemic health, suggesting that increased awareness does increase respect for oral care [11, 46, 49, 56]:

Oral health affects the whole body, because if they're not eating, they're not going to get fluids or they're not going to eat, they're not going to get nutrition, then just going to get weaker and they're not going to be able to walk. In the end, the whole body just starts to deteriorate.

Care staff, Australia [57]

3.4.5.2 | Sub-Theme 2: Value the Dental Team and Care Staff Place for Supporting Oral Health Within Care Homes. Relationship-centred care is compromised when there is friction between the goals of dental care professionals and care staff, with each party having differing values when it comes to providing oral health care within care homes. Organisational support is essential for relationship-centred care, so that all stakeholders value their contributory role in maintaining the oral health of residents. A lack of priority for providing dental care within care homes was highlighted in one study:

Interviewer: "Would you say that treating these patients in care homes is one of your most important tasks professionally?"
Dentist: "No." Germany [48].

Furthermore, care staff displayed a fear in one study of dental care professionals' opinion and advice:

It's super embarrassing to be told by the dental practitioner that my colleagues in the nightshift haven't brushed the residents' teeth before helping them to bed.

Carer, Denmark [45]

4 | Discussion

The objective of this qualitative evidence synthesis was to explore factors relating to the provision of relationship-centred dental care for older people living in care homes. Relationship-centred care focuses on how the relationships between different stakeholders, as well as their place in the wider health care system, influence the processes and outcomes of care [32]. The studies included in this synthesis brought together perceptions of care home staff, members of the dental team, care home residents and their family and friends. Data within the included studies supported all the key themes in the a priori framework: *Relationship-centred care*, *Integration within the wider health and social care systems*, *Digital inclusion*, *Workforce support and Parity of esteem*. The sub-themes produced by the synthesis related to the contextual specifics of the setting (the care home) and the interventions (dentistry and daily oral care). Whereas *Digital Services* was a key component of the original a priori framework, it was underrepresented in the findings of this review, with limited data to inform the impact of digital integration on relationship-centred care. This review highlighted that referral processes were often fragmented and limited information sharing between professionals was a barrier to relationship-centred care. Adoption of digital services such as electronic patient records and simple online referral pathways can aid connection between care homes and professional advice and opinions [59]. Other digital services, such as tele-health, may be more valuable in countries such as Australia, where care homes may be in remote locations with limited access to in-person secondary care [60].

A conceptual model, based on the synthesis and illustrating the essential components of relationship-centred care in this context, is depicted in Figure 3. The a priori framework (Figure 1) was found to be a good fit for the evidence: data were present in the included studies to support all the themes in this original framework. However, the importance of integration of dentistry in care homes was felt to be a key factor for relationship-centred oral health care and was placed centrally in our model. The themes are related to one another, and success or failure in addressing the organisational and personal factors articulated within *digital services*, *parity of esteem* and *workforce support* is dependent upon the *integration between dentistry, care homes and wider health and social care systems*. These four themes will influence successful and co-ordinated provision of *relationship-centred care* within care homes.

There is a high level of unmet dental need in care homes, often worsened by funding issues, lack of suitable clinicians and difficulty co-ordinating and providing care [11, 49, 53]. Guidelines such as NG48 [22] (issued by the National Institute for Health and Care Excellence (NICE)) which aim to address

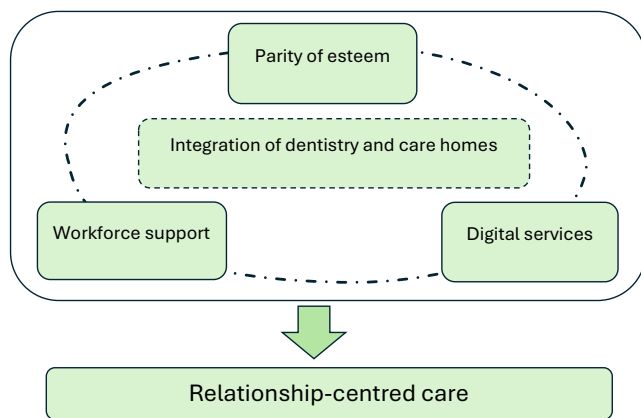


FIGURE 3 | Conceptual model of qualitative evidence synthesis findings.

these unmet needs are not always seen as useful or practical [28, 61]. It was noted that despite aggressive and defensive behaviours limiting oral hygiene being a key issue for care homes, the NG48 guidelines did not provide any practical advice on how to deal with this contextual situation [28]. Context is important, as this can often explain why evidence-based implementations may fail or show variability in their effectiveness [62]. A recent qualitative study exploring care home staff views of an oral health intervention further highlighted the importance of how understanding the contextualised real-life experience of those targeted by guidelines is important [63]. This gap between guidelines and practices has been described as ‘mindlines’, whereby the knowledge and lived experience of individual health practitioners create internal “guidelines-in-the-head” relevant to local context and systems [26, 28]. For example, staff time constraints can affect the ability to implement oral health guidelines into practice, with 20-min windows reported to support each care home resident’s morning personal hygiene routines [28, 49]. However, guidelines can help shine a spotlight, with the ‘Smiling Matters’ report showing an improvement in care home managers being aware of the NG48 guidelines and a resultant increase in oral health policy implementation [64].

Practical aspects of how dentistry can be integrated into a care home environment can also be considered from a domiciliary or ‘in-house’ perspective [49, 53]. Issues with domiciliary dental visits include long-waiting times for subsidised government care or expensive private mobile dental services [17, 51, 53]. From the authors’ experience delivering domiciliary care within both Australia and the UK, it can be difficult to gain an accurate medical and dental history and understand patients’ previous wishes, particularly if a relative is not present. UK publicly funded domiciliary visits mostly have limited equipment, allowing only for examinations and non-invasive procedures [11]. It remains unclear how decisions about the need for domiciliary care or transportation into clinical care are made. There is also a lack of transparency about what care is reasonably provided within a domiciliary visit and what residents and their families expect [65]. If treatment is required, transport to clinic usually needs to be arranged, but often a palliative approach to care is appropriate in line with current treatment planning advice [16].

A Belgian program, *Gerodent*, helps prevent spiralling domiciliary dental fees by adhering to a government fixed-fee guide with partial coverage provided through mandatory health insurance [66]. In a qualitative study of care home managers, the *Gerodent* program helped avoid transport issues when accessing dental care but noted the limited capacity or ability to provide complex treatment [66]. Even with the partial coverage, the cost of the scheme was still an issue, and the authors suggest expanding the role of dental hygienists, rather than dentists, in providing general oral care [66]. Various studies discuss the resistance of dentists visiting care homes due to lack of knowledge and equipment, lack of clarity around guidelines and physical difficulties of providing care [11, 48, 52, 67]. The alternative is to transport residents to fixed dental clinics; however, non-emergency transport can be unreliable or lacking suitable equipment [11, 50]. This can affect patient experience and also patient safety, as highlighted by a nurse and care home manager explaining how a diabetic resident was left for over 14 h at a dental service without food or medication due to transport issues [49].

Integration of dentistry within care homes is dependent on a further theme of *workforce support*. Care home staff have a demanding role affected by time constraints and high staff turnover [46, 49, 50, 55]. Relational working between the dental team and care home staff, respectful of their working environment, is important for achieving optimal oral health outcomes [8]. Having the physical presence of a dental team member helps improve the confidence of care home staff in their ability to deliver care and gain in-person practical tips [45, 53]. As mentioned, in-person care can be provided by not only dentists, but also dental hygienists and dental therapists. Models of care which focus on skill mix, with clear communication pathways to dentist input when required, have been shown to be well received by care home staff [50, 68]. In-person relational working can provide a practical supplement to more didactic oral health training within care homes which risks becoming a tick-box exercise [17, 28, 57].

There was limited data to support the theme of *Digital Services*, suggesting that further research is needed in this area. Bradshaw et al. [41] found that where digital services were supported by sufficient infrastructure, integration with external services improved. However, care home staff needed support to use these technologies, and a video consultation could be distressing for residents [41]. Benefits of virtual consultations include no travel time or transportation costs and were used between care staff and the dental team, rather than directly with residents [50, 69]. COVID-19 accelerated the use of digital services in care homes; however, there are concerns on the negative impact to relationship-centred care, for example, lack of in-person interaction with residents’ families and friends [70]. It is clear that there is a balance between streamlined digital services and the need for in-person, human interaction.

There was conflicting awareness in care homes of the importance of oral health within the included studies, which affects the position of oral care when considering general care priorities. Furthermore, despite oral health playing an important role in overall health and wellbeing of older people living in care homes, time constraints mean it may not be considered as a priority compared to other aspects such as nutrition, wound care

and ensuring clean clothes [68, 71, 72]. Issues such as preventing bed ulcers or clean clothing may have a greater priority of esteem than dental care or oral hygiene [45, 71].

When looking at implications for practice, the provision of relationship-centred care depends on the presence of organisational structures, support and processes to provide care home staff with the resources, time and skills they require. This review raises specific issues in providing evidence-based, personalised dental care in this context with guidelines and regulations not always seen as practicably useful [11, 49, 54], problems caused when oral care is seen as a task to be completed, rather than a valued aspect of personal care and the importance of individual patient experience [47, 49, 53] and the difficulty of managing high workloads and conflicting priorities [17, 46, 52].

This review also illustrates the strength of the available evidence base, which appropriately uses qualitative interviews and focus groups to explore the experiences, values and preferences of older people and of those who care for them. It highlights the complexity of providing dental care in this context and the current evidence gaps. It highlights that future research should seek to understand more fully what the best service delivery models would be to support the integrated working between care homes and dental services which seem necessary to achieve the oral health outcomes that matter most to the older person. This review seems to support what others have found outside of dentistry: "how relational working is structured between health and care home staff is key to whether health service interventions achieve health related outcome for residents and their respective organisations" [8].

The evidence also suggested how some of these barriers might be overcome: for example, by providing greater clarity in terms of what residents should expect and what care home staff should expect to provide; ongoing training of all care home staff and dental professionals to establish and maintain relevant knowledge and skills; the provision of tools to support communication and the co-ordination of care; the provision of support for residents to enable self-care and access services; as well as greater resources to permit prioritisation of oral care alongside residents' other key care needs. Insights from Warmouth et al. [73] on collaboration between care homes and primary care emphasise the importance of mutual trust, role understanding and shared learning as foundations for effective care. These principles are applicable to relationship-centred provision of dental care in care homes, whereby interpersonal relationships as well as the wider environmental context must be considered.

However, this synthesis is not simply about understanding mechanisms to improve oral health. Interventions are needed that help support care home staff and dental professionals to work effectively together to integrate patient values, contextual knowing of practitioners and evidence-based care. These elements require organisational change if the benefits of this relationship-centred model of care are to be realised.

4.1 | Limitations

The final synthesis does not appear to have been influenced by the quality or publication date of the studies included. Nor

was it influenced by the location of the studies, whether from Australasia, Europe or North America, or by the type of care provided. However, the synthesis was sensitive to the perspective of studies' participants and quotes were not always attributed on an individual basis, particularly from focus groups. Furthermore, key care home characteristics such as size and funding model were not clearly stated in the included studies, which would likely have an impact on stakeholders' experiences and perspectives. When broad terms needed to be used such as 'dental care professional' some of the conceptual clarity of the quote is lost. For example, this encompasses dentists, dental nurses, therapists and hygienists who may have differing viewpoints and backgrounds. Moving forward, it is recommended that qualitative research studies clearly attribute quotes so that it is easier to interpret the context of the findings [74].

Of note, the inclusion criteria were restricted to English-language only literature and had limited geographical coverage. Restriction to English-language only limits the inclusion of diversity of perspectives and cultural contexts [75]; however, translation services were not in the scope of this evidence synthesis. Similarly, exclusion of studies from Asia, Latin America, Eastern Europe and Africa also means different cultural perspectives and variations across the whole spectrum of care home oral health care provision are not evidenced. Future studies comparing oral health in care homes from a global perspective are recommended.

A further limitation was that this evidence synthesis does not include grey literature or citation tracking beyond reference lists. However, care was taken to involve the Newcastle University library search team to ensure the search terms used were likely to capture all relevant academic literature. Grey literature was not included as it can be difficult to quality assess the findings; however, inclusion of a grey literature search could have been useful as there was an underrepresentation of key stakeholders. For example, only four studies included residents and family members as participants [17, 45, 47, 54] and five included oral health care professionals [17, 45, 48, 52, 55]; the vast majority, principally or exclusively, explored the views of care home staff. Future research should seek to address this imbalance, and one recent study has already sought to do so [76]. It will also be important to explore in more depth the experiences of dental professionals in this context and how they view their role in relationship-centred care for older people living in care homes. In this way, a more rounded view of the requirements of relationship-centred care might be achieved.

4.2 | Conclusions

This 'best-fit' framework synthesis of stakeholders' views of dental care for older people living in care homes found that care home staff in particular identified many barriers to the provision of relationship-centred care. More research is needed to explore the views of dentists, family and residents themselves, who were less well-represented than care home staff, including managers, in this sample of studies. Acknowledging the complexity of dental care in this context and by highlighting issues relating to integration, workforce support, digital services and parity of esteem, this synthesis suggests there might be value in using

organisational change research to achieve improvements in oral health related outcomes for older people living in care homes.

Author Contributions

R.P. and R.R.W. conceived and designed the qualitative evidence synthesis; R.P. and R.R.W. extracted the data, appraised included studies and analysed and interpreted the data. R.P. drafted the paper, R.R.W., C.C. and C.E. undertook critical revision of important content of the manuscript. All authors approved the final version of the manuscript.

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Ethics Statement

Ethical approval was not relevant for this evidence synthesis, which used only secondary data.

Consent

All authors consent to the publication of this work.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

Data available on reasonable request to the authors.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section. **Table S1:** Supportive quotes for qualitative evidence synthesis findings.

Appendix 1

Excluded Studies

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