

Digital Reminiscence-Based Interventions to Enhance Social Interaction of People With Dementia in Care Homes: A Scoping Review

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Abstract

The use of digital tools in reminiscence interventions has increased in recent years, encompassing multimedia platforms, virtual reality (VR), digital life storybooks, and interactive applications. Yet, evidence regarding the effectiveness of digital reminiscence-based interventions remains limited. This scoping review aimed to map and synthesise the existing evidence on digital reminiscence-based interventions in care homes, with a focus on: (i) their development and evaluation; (ii) the extent to which they address cultural diversity and inclusivity; (iii) the support provided to end users; and (iv) the barriers and facilitators influencing their implementation. A systematic search of five databases (MEDLINE Complete, CINAHL, PsycINFO, PubMed, Web of Science), and three grey literature sources (BASE, King's Fund Database, PsyArXiv) was undertaken. Reference lists of key papers were also hand-searched. Studies of all methodologies (qualitative, quantitative, and mixed methods) were included. Sixteen studies involving 365 participants met the inclusion criteria.

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Interventions were grouped into: (i) digital reminiscence, (ii) digital life story, and (iii) immersive VR. Reminiscence and life story interventions improved emotional wellbeing and social engagement, while VR mainly supported stimulation and mood. Stakeholder involvement in design of technology was limited, especially for people with dementia, and reporting on cultural diversity was minimal. Variation in intervention design and outcomes limited conclusions on overall effectiveness. Implementation facilitators were ability to personalise content, care provider/home manager support, staff engagement and training, and family involvement. Barriers included technology usability, organisational infrastructure and support, workforce knowledge and capacity, and difficulties integrating into routine care practices. Digital reminiscence generally improved wellbeing, mood, cognition, communication, social interaction, although findings were mixed and limited by small samples, and varied intervention designs and outcome measures. Future research should prioritise co-creation with people with dementia, families, and staff; include more diverse populations across the disease trajectory; and explore sustainable integration into routine care practice.

Keywords

dementia, digital reminiscence, care homes, technology, virtual reality, life story, person-centred care

Introduction

Reminiscence is a meaningful activity to support people with dementia to recollect memories and past experiences believed to be forgotten (Lin et al., 2003; Westerhof et al., 2010). Westerhof et al. (2010) identifies three categories of reminiscence: (1) 'Simple reminiscence' focuses on sharing selected personal stories and memories (2) 'Life review' which is structured and contains an evaluation of lived life (3) 'Life review therapy' encourages positive reminiscence rather than negative memories and is used with people with severe mental health illness. Research has shown that talking about the past gives people with dementia confidence and competence in the skills they retain and can improve communication and interaction (Morris, 1994; Woods et al., 2018). Care staff and family members can facilitate simple reminiscence, although life review and life review therapy are usually delivered by trained professionals, which incurs additional cost. Reminiscence, involving a life review process or personalised reminiscence work, has been found to be beneficial when undertaken in groups or individually with people living with dementia (Subramaniam and Woods, 2012).

A Cochrane review including 22 studies involving 1972 people with dementia and meta-analyses that synthesised data from 16 studies (1749 participants) concluded that reminiscence can improve mood, communication, wellbeing, social interaction, and quality of life (QoL) of people with dementia (Woods et al., 2018). The authors highlighted that positive benefits were most often seen in care home studies, due in part to the notion of maintaining personal identity, which becomes more vulnerable with a move to care home, without the familiar prompts and triggers for personal identity embedded in the person's own home. A systematic review and meta-analysis explored reminiscence therapy for people with dementia living in long term care facilities included five randomised controlled trials (RCTs) with 267 participants (two were meta-analysed) (Thomas and Sezgin (2021). They found reminiscence therapy to significantly improve quality of life (QoL) and was also effective in reducing depression and improving autobiographical memory, although its effects were inconsistent. Similarly, Saragih et al. (2022) reported the effectiveness of reminiscence

therapy for people with dementia in a systematic review and meta-analysis that accessed 29 studies (24 RCTs; 5 quasi-experimental studies) with a total of 3102 participants. They reported increased cognitive functions and QoL as well as decreased depression and neuropsychiatric symptoms, although it is noted that this review did not solely focus on people with dementia living in care homes and included papers focused on community settings.

In addition, a systematic review focusing on life story and its influence on people with dementia, family carers, and staff in nursing homes, reported on three studies using quantitative design and two studies (presented in three papers) using qualitative design (Grøndahl et al., 2017). The authors noted that life stories generally had a positive influence on people with dementia, family carers, and staff, helping to maintain the personhood and sense of identity of the person with dementia. However, they also noted that enabling people with dementia to tell their story could be challenging, particularly for staff and relatives when sensitive information was divulged. Moreover, a scoping review exploring the extent of reminiscence research undertaken in long-term care communities noted the lack of theoretical frameworks underpinning the studies, as well as small sample sizes, and weak methodology (Yang et al., 2022). Many researchers have suggested a need for future reminiscence research in long-term care communities, including RCTs to measure the effectiveness and impact of reminiscence on the physiological and psychological aspects of people with dementia, and to explore how it influences their relatives and staff (Grøndahl et al., 2017; Thomas and Sezgin., 2021; Yang et al., 2022).

Digitalisation of Reminiscence

Traditional reminiscence approaches include the use of photograph albums, life story books, and other physical objects. Digital reminiscence, by contrast, provides access to a wider range of multimedia resources including video, audio, and music clips. The benefits of digital reminiscence for people with dementia have been described as increasing opportunities for interactions and enhancing individuals' ability to take ownership of conversations. For facilitators, digital approaches may require less preparation time and also offer the potential to deliver sessions remotely via the internet (Astell et al., 2010; Lazar et al., 2014). Several digital tools and technologies have been used to facilitate reminiscence, including tablets, computers, virtual reality (VR), digital life story books, interactive applications (apps), and customised software. Tablets and computers provide access to multimedia content such as photographs, videos, and music, which can trigger memories and stimulate conversation. A scoping review highlights the use of digital life story and reminiscence as beneficial for people with dementia (Xu et al., 2023). VR offers immersive experiences that enable individuals to virtually revisit familiar places or engage in past activities, and a recent scoping review found VR to be feasible therapeutic tool within care home settings (Restout et al., 2023).

A further scoping review identified that touchscreen tablets can support people with dementia in care homes by increasing engagement and reducing responsive behaviours associated with environmental stress or unmet needs, which may ultimately improve enjoyment and quality of life (Hung et al., 2021). However, several barriers to implementation were identified: (i) physical accessibility issues, including difficulties holding devices because of their weight and placement of thumbs and challenges viewing reflective screens (ii) concerns regarding data protection and confidentiality of resident information stored on the device (iii) the need for prior training for staff and relatives (iv) technical difficulties such as lack of internet or Wi-Fi connectivity and faulty software. The authors therefore concluded that further research is required to identify effective implementation processes and practical strategies to overcome these barriers.

Effectiveness of Digital Reminiscence

Studies examining the effectiveness of digital reminiscence have, in the main, focused on community-dwelling individuals with dementia. However, there is some evidence to show improvements in mood, social interaction, cognition and QoL for individuals with dementia living in care homes. In Japan, [Tominari et al. \(2021\)](#) examined differences in cognitive function and morale between virtual reality (VR)- based reminiscence and conventional reminiscence using still photographs. They found no differences in cognitive improvement between the two approaches; however, participants in the VR group demonstrated greater improvements in morale scores, suggesting enhanced subjective well-being in this group. [Moon and Park \(2020\)](#) undertook a pilot RCT in daycare centres in Korea which showed that digital reminiscence therapy reduced depression ($F = 7.62, p = .001$, partial $\eta^2 = .17$) both immediately after the intervention (T1) and at 4-month follow-up (T2). In addition, engagement ($t = -2.71, p = .011$) was significantly higher during the final session compared with the storytelling control group. There is also some evidence that digital communication tools designed to encourage the recall of personal memories, such as CIRCA and CIRCUS, can support social interaction and have a positive impact on QoL in people with dementia, as measured using the EQ-5D ($p < 0.05$) ([Derbring et al., 2023](#)).

Rationale

Growing evidence demonstrates the benefits of digital reminiscence for people with dementia living in care home settings ([Derbring et al., 2021](#); [Tominari et al., 2021](#)). Existing literature reviews have explored the use of technology to support meaningful engagement for people with dementia in care homes ([Neal et al., 2020](#)), the effectiveness of digital technologies in supporting engagement and wellbeing for people with dementia and family carers both at home and in care homes ([Bradley et al., 2023](#)) and the use of technology within reminiscence interventions ([Lazar et al., 2014](#)). However, to our knowledge, no literature reviews have specifically addressed this population (people with dementia), concept (digital reminiscence), and context (care home settings), highlighting the need for this review.

Aim and Research Questions

The aim of this review is to map published research focusing on digital reminiscence approaches, tools and interventions utilised by, or with, people with dementia in care home settings, with a particular focus on their development and evaluation, and the involvement of people with dementia, family carers, and care home staff.

This review is guided by the following research questions:

- (1) What types of digital reminiscence-based interventions, tools, or approaches have been used to support social interaction with people with dementia living in care homes, and how and where have they been implemented?
- (2) What outcome measures have been used to evaluate the effectiveness of these digital reminiscence interventions, tools or approaches and whose perspectives have been captured, for example in relation to wellbeing, cognition and mood?
- (3) To what extent are these digital reminiscence interventions, tools or inclusive of diverse populations and cultures?

- (4) What are the barriers and enablers to implementing these digital reminiscence interventions, tools or approaches and how are end users (staff, residents, and families) supported to use them?

Methods

The review was conducted in line with the Joanna Briggs Institute (JBI) manual for scoping reviews (Peters et al., 2015) and the five-stage process outlined in the Arksey and O'Malley (2005) framework. Reporting is in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA-ScR) guidelines (Tricco et al., 2018). A review protocol was registered in the Open Science Framework (osf.io/u5dbm) to provide transparency throughout the process.

Inclusion Criteria

The inclusion criteria were developed using the Population, Concept and Context (PCC) framework to identify the topic of interest in terms of what, who, and where (Peters et al., 2015). Only studies reporting on the development and/or evaluation of digital interventions were included. Studies that were not published in English or not peer reviewed were excluded. Literature, scoping and systematic reviews were also excluded.

Population

This review includes studies involving people with dementia living in residential or nursing homes. Participants could be of any age, gender, or ethnicity. Studies were included where the type or severity of dementia was not specified, and where participants had or had not received a formal clinical diagnosis of dementia. The use of cognitive assessments, such as the Mini-Mental State Examination (MMSE) was noted were reported. Studies involving individuals with mild-cognitive impairment, or studies comparing older adults without dementia and people with dementia, were excluded.

Concept

This review includes reminiscence-based interventions aimed at enhancing social interaction for residents with dementia that are delivered digitally using an electronic device. Included studies focus on reminiscence, life stories, life review, photobooks, VR, or augmented reality. Studies focusing on cognitive stimulation therapy were excluded. Interventions in which reminiscence was a secondary component (such as communication support tools) and studies comparing traditional reminiscence with digital reminiscence were excluded. Studies focused on technology that monitors the person or environment were excluded.

Context

This review includes research undertaken in any long-term care home setting, including care homes with nursing care (nursing homes) and without nursing care (residential care homes). Studies were excluded if they were conducted in domiciliary or home care, day centres, hospitals, or extra care housing environments.

Literature Search

A comprehensive literature search was conducted by one author (MH), with support from two co-authors (AS, SF) and the University librarian from inception to 02 December 2023 and updated in December 2025. This review followed the three-step process outlined by JBI to identify both published and unpublished research studies (Peters et al., 2015). Prior consideration of relevant literature by the first author (MH) informed the search terms utilised in the first stage search of the MEDLINE Complete and Cumulative Index to Nursing and Allied Health Literature (CINAHL) databases to pilot the search strategy and identify additional key words. The second stage search involved applying the full comprehensive search strategy (Supplemental Material) in MEDLINE Complete, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PsycINFO, PubMed, and Web of Science databases. In addition, grey literature searches were conducted using the Bielefeld Academic Search Engine (BASE), the King's Fund Database, and PsyArXiv to identify unpublished studies. The third stage involved hand searching the reference lists of key papers and conducting keyword searches in Google Scholar to identify any additional studies. Empirical studies, including quantitative, qualitative, and mixed-methods research using any methodological approach, were included. Study protocols, conference papers, published theses and review articles were excluded. Only articles published in English, or with an English translation available were included. Articles for which the full text could not be accessed were excluded.

Study Selection

Studies identified through the search were imported into EndNoteX9.2 (Clarivate Analytics, PA, USA, 2019) and duplicates were removed. Alongside EndNote, Excel spreadsheets were utilised for screening articles against the inclusion criteria, with rating options of include (yes), exclude (no) or unsure. Two reviewers (MH, AS) independently assessed titles and abstracts against the selection criteria. A third reviewer (SF) was consulted to resolve any differences of opinion where consensus could not be reached between the two reviewers. Studies deemed potentially eligible then underwent full-text review by the two reviewers (MH, AS) and reasons for exclusion were recorded and reported. A PRISMA flowchart was used to document the study selection and inclusion decisions (Tricco et al., 2018).

Data Extraction and Synthesis

Following the Arksey and O'Malley (2005) framework and the JBI template (Peters et al., 2015), data were extracted, charted, collated and summarised to enable reporting of the results. Data extraction was undertaken by one or more of the three reviewers (MH, AS, SF) and discussed with the wider research team (all authors). There were no occasions of uncertainty that led to contacting study authors for clarification. The following details relating to the included studies were extracted and charted: study design, demographics, care setting, data collection, methods, intervention/tool/approach, participants, outcome measures, findings, barriers, facilitators, and any training provided. The nature of this review was to map current evidence base and identify gaps; therefore, the quality of included studies was not assessed. The papers highlighted a range of approaches, methods and digital technologies being used. Therefore, results are presented through a narrative synthesis, with findings from the studies summarised according to (i) characteristics of included studies (ii) intervention design (iii) intervention evaluation (iv) inclusivity and cultural representation (v) implementation barriers, enablers and end user support.

Results

A database search returned 5,138 articles, with 3,267 articles remaining after duplicates removed. Of those, 2,854 articles were excluded following title and abstract screening. Of the remaining 401 articles selected for full-text review, 16 studies involving 365 participants met the inclusion criteria. The PRISMA flow diagram summarises the study identification and selection process (Figure 1).

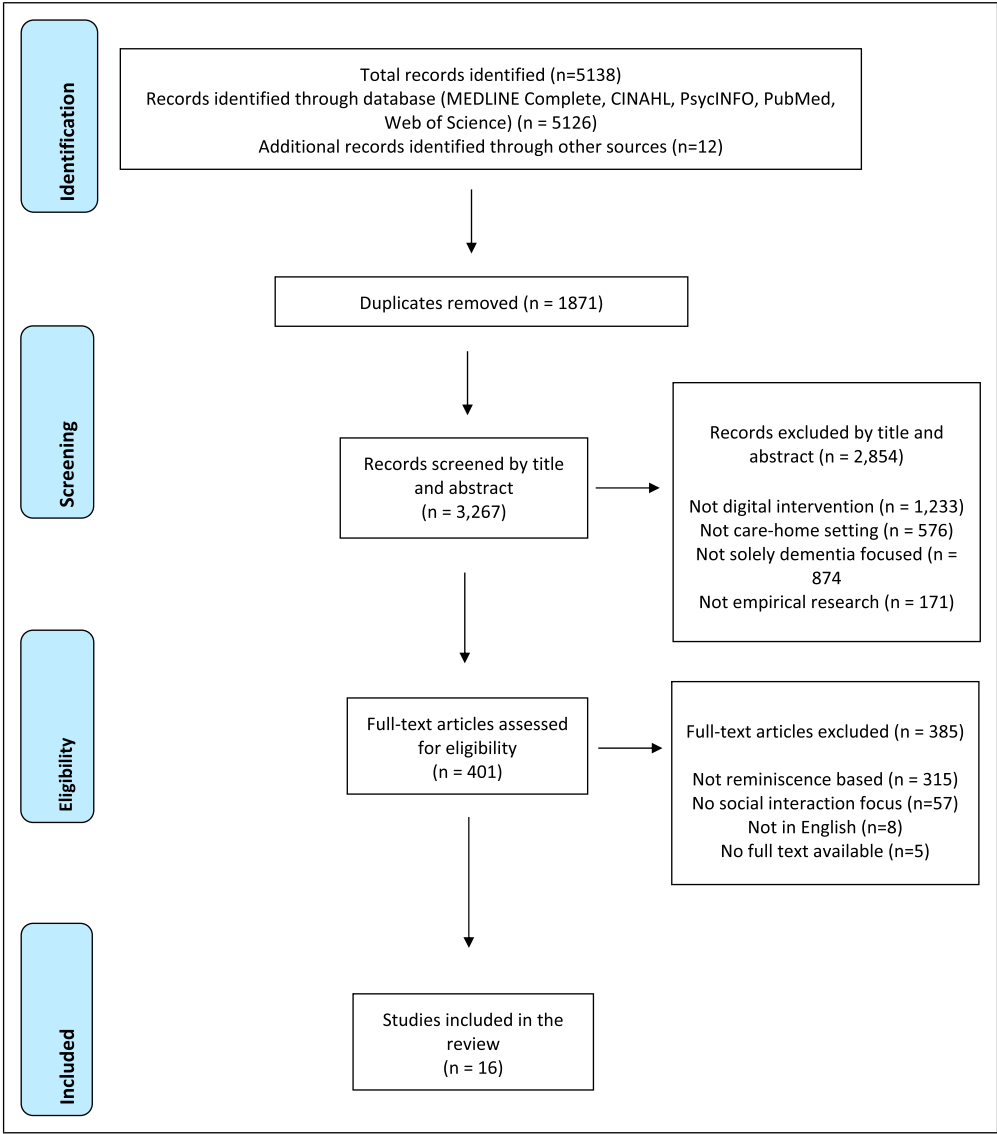


Figure 1. Prisma

Characteristics of Included Studies

Study characteristics are outlined in Table 1. Studies were conducted in Australia ($n = 3$), Brazil ($n = 1$), Canada ($n = 1$), Denmark ($n = 3$), Jordan ($n = 1$), Norway and Portugal ($n = 1$), Norway, Belgium, Portugal and Romania ($n = 1$), South Korea ($n = 1$), Taiwan ($n = 1$), Turkey ($n = 1$) the United Kingdom ($n = 2$). Study designs varied considerably. Two studies were part of RCTs, one randomized, single-blinded, cross-over trial (Davison et al., 2016) and one randomized controlled experimental study (Manav & Simsek, 2019), two were non-randomised trials (Saredakis et al., 2021; Sultana et al., 2021) and two were single arm feasibility studies (Abdalahim et al., 2022; Kim et al., 2021). Six studies reported solely quantitative findings (Davison et al., 2016; Huang & Yang, 2022; Kim et al., 2021; Manav & Simsek, 2019; Saredakis et al., 2021; Sultana et al., 2021). Seven studies were qualitative, including five descriptive studies (Goodall et al., 2021a, 2021b; McAllister et al., 2020; O'Philbin et al., 2017; Thoft et al., 2022) and two case studies (Abrahamo et al., 2018; Paay et al., 2022). Three studies used mixed methods designs and reported both quantitative and qualitative findings (Abdalahim et al., 2022; Bjørnskov et al., 2020; Subramaniam & Woods., 2016). Sample sizes also varied considerably, ranging from 2 to 63 participants. Two studies included 60 or more participants, and each used a mixed methods design incorporating both qualitative and quantitative data collection (Abdalahim et al., 2022; Bjørnskov et al., 2020).

Intervention Design

Three broad categories of digital reminiscence-based interventions were identified: (i) digital reminiscence interventions, (ii) digital life story interventions, and (iii) immersive VR interventions (Table 2).

Digital Reminiscence Interventions

Digital reminiscence interventions ($n = 8/16$) were the most frequently reported type of intervention. These interventions involved the delivery of reminiscence content through digital platforms, including tablets, laptops, televisions, and interactive screens. Sessions lasted, on average, 30 and 60 min, although one study reported that sessions could last up to 2.6 hr (Davison et al., 2016). Intervention frequency varied from daily (Davison et al., 2016) to weekly (Manav & Simsek, 2019), and overall duration ranged from short-term programmes (4–12 weeks) to longer-term initiatives extending up to 6 months (McAllister et al., 2020).

Content was either generic (e.g., pre-existing online media such as YouTube videos or reminiscence films) (Abdalahim et al., 2022; Manav & Simsek, 2019) or personalised (e.g., family photographs, preferred music and home videos) (Abrahamo et al., 2018; Davison et al., 2016; McAllister et al., 2020; Thoft et al., 2022). Two studies combined generic and personalised materials (O'Philbin et al., 2017; Paay et al., 2022). Personalised approaches were generally described as more meaningful for participants, although they required greater preparation and facilitation from staff.

More technologically advanced reminiscence environments incorporated multisensory components. For example, SENSE-GARDEN provided immersive sessions integrating projected imagery, music, scent, and interactive visual media tailored to the individual (Goodall, André, et al., 2021; Goodall, Taraldsen, et al., 2021). In some studies, reminiscence was embedded within routine care practices through structured staff training (Bjørnskov et al., 2020) or through the provision of multimedia "Memory Boxes" accessible over several weeks (Davison et al., 2016).

Table 1. Characteristics of Included Studies

Study	Country	Aim	Design	N	Technology	Participants ^a	Data collection ^b	Dementia severity (n =)	Cognitive measure	Outcomes measured
Abdalahmet et al., 2022	Jordan	To assess feasibility, acceptability, and preliminary effectiveness of digital reminiscence therapy for dementia patients in care homes	Mixed method (5-week single-group feasibility trial with process evaluation)	60	Digital touch screen	P: 5	Q, I, RS	Mild (28), moderate (20), severe (12)	Arabic version Saint Louis University Mental Status (Arabic SLUMS)	Quality of life Older People's Quality of Life questionnaire (OPQOL-brief-13) Mood Arabic version of Hospital Anxiety and Depression Scale (Arabic HADS) Communication Holden Communication Scale for persons with dementia (HCS) None specified
Abraham et al., 2018	Brazil	To explore the benefits and challenges of mobile digital storytelling as a form of multimedia communication for a person with dementia and their carers	Qualitative (case study)	11	Tablets, smartphone, Com-Phone Story Maker app	P (1), F(2), S (4), R(4)	I	Moderate (1)	Mini-Mental State Examination (MMSE)	None specified
Bjornskov et al., 2020	Denmark	To assess whether generic film material targeted at people with dementia can be utilized for recreational and reminiscence purposes in a nursing home.	Mixed Method (survey and focus group)	63	Life in the Memories DVD Box Set-50 Short Films	S (63)	Q (63), FG (8 in 2 focus groups)	Moderate to severe (not all participants had a dementia diagnosis, but all had symptoms)	None specified	None specified
Davison et al., 2016	Australia	Hypothesis: Memory box would lead to a greater reduction than the control condition in agitated behaviour counts and both anxiety and depressive symptoms.	Quantitative (Randomised, single blinded, cross-over trial)	11	Personal computer System called Memory Box	P	RS, I	Mild, moderate and severe	Mini-Mental State Examination (MMSE), Clinical Dementia Rating scale (CDR)	Mood - Cohen-Mansfield Agitation Inventory; - Cornell Scale for Depression in Dementia (CSDDD); - Rating and Anxiety in Dementia (CSDA)

(continued)

Table 1. (continued)

Study	Country	Aim	Design	N	Technology	Participants ^a	Data collection ^b	Dementia severity (n =)	Cognitive measure	Outcomes measured
Goodall, André, et al., 2021	Norway/ Portugal	To create a transactional model of how narrative identity and relationships are promoted through the use of SENSE-GARDEN.	Qualitative (descriptive)	20	SENSE-GARDEN Room incorporates immersive technology, digital media and multisensory stimuli to create environments personalised to life story	P+F	I (7 P, 13 C)	Moderate to severe	Clinical Dementia Rating Scale (CDR)	None specified
Goodall, Taraldsen, et al., 2021	Norway, Belgium, Portugal and Romania	To create a transactional model of how narrative identity and relationships are promoted through the use of SENSE-GARDEN.	Qualitative (descriptive)	8	SENSE-GARDEN Room incorporates immersive technology, digital media and multisensory stimuli to create environments personalised to life story	S	OBS, I	N/A	N/A	None specified
Huang & Yang, 2022	Taiwan	The study aimed to assess the effect of VR reminiscence in people with dementia, immediately and 3-6 months after the intervention.	Quantitative (pilot study)	20	Virtual Reality (Immersive)	P	RS	Very mild, mild and moderate	Mini-Mental State Examination (MMSE); Cognitive Abilities Screening Instrument (CASI); Clinical Dementia Rating	Mood Center for Epidemiological Studies Depression (CESD) Caregiver burden Zarit Caregiver Burden Interview (ZBI)

(continued)

Table 1. (continued)

Study	Country	Aim	Design	N	Technology	Participants ^a	Data collection ^b	Dementia severity (n =)	Cognitive measure	Outcomes measured
Kim et al., 2021	South Korea	The study objective was to (i) confirm the activities that alleviate BPSD and classify these activities based on patient's psychological need (ii) develop VR platform environments based on patients' psychological needs and test whether it alleviates BPSD (ii) evaluate the participants VR immersion, preferences and interactions with VR and tolerance with VR.	Quantitative (Feasibility study)	10	Virtual Reality (Immersive)	P	Q	Mild to moderate	Mini Mental Status Examination-Korean version (MMSE-K) Activities of Daily Living (ADL)	None specified
Manav and Simsek, 2019	Turkey	The aim of this study is to investigate the effect of reminiscence therapy combined with Internet-based videos on cognitive status and apathy in people with mild dementia.	Quantitative (Randomised Experimental Controlled Trial)	32	Reminiscence therapy supported with internet-based videos	P	RS	Mild	Standardized Mini-Mental State Examination (SMMSE)	Mood -Apathy Rating Scale (ARS) Self-Assessment Form
McAllister et al., 2020	Australia	The evaluation of the prototype explores (i) barriers and facilitators to Memory Keeper use with PwD in long-term care settings (ii) the benefits (or otherwise of using the app in this setting (iii) the potential use and incorporation of the app in care in this setting.	Qualitative (descriptive)	11	Prototype digital application 'Memory Keeper' presents personalised prompts to PwD to support reminiscence	P (3), F (6), S (1)	OBS, FG, I	Participant 1 = Lewy Body Disease: Participant 2 = Alzheimer's Disease (moderate to severe); Participant 3 = Dementia (non-specified)	None specified	None specified

(continued)

Table 1. (continued)

Study	Country	Aim	Design	N	Technology	Participants ^a	Data collection ^b	Dementia severity (n =)	Cognitive measure	Outcomes measured
O'Phibin et al., 2017	United Kingdom	To explore (a) participants' experiences of a digital Life Story Work (LSW) service delivered through weekly workshops (b) the advantages and disadvantages of using a technological interface for LSW, and (c) how the context (e.g. the setting) affects user experiences of a digital LSW intervention.	Qualitative (descriptive)	16	Book of You – a multimedia digital life storybook app; Tablet	S(4) [community P(6), F(6)]	I	Mild to moderate	Clinical Dementia Rating scale (CDR) Oral communication Clifton Assessment Procedures for the Elderly (CAPE)	None specified
Paay et al., 2022	Denmark	To develop and evaluate a system, Memento, to connect people, artefacts, their stories, and multiple places within a care home.	Qualitative (case study)	2	<i>Memento</i> Smartwatch-Smartphone	P(1), S(1)	OBS	Mild Dementia	The Global Deterioration Scale (GDS)	None specified

(continued)

Table 1. (continued)

Study	Country	Aim	Design	N	Technology	Participants ^a	Data collection ^b	Dementia severity (n =)	Cognitive measure	Outcomes measured
Saredakis et al., 2021	Australia	The primary aim of this study is to examine whether using HMDs as a tool for reminiscence therapy improved outcomes compared with using a laptop computer supplemented by physical items if required (active control group). The primary outcome was apathy. Secondary outcomes included cognition and depression. Exploratory outcomes included loneliness and quality of life. The side effects of using HMDs were also examined in the VR group.	Quantitative (Multisite nonrandomised controlled trial)	43	Virtual Reality (Immersive) Head-Mounted Displays (HMDs).	P	Q, RS	Moderate	Psychogeriatric Assessment Scale	Mood -The Apathy Evaluation Scale (AES) (Clinician Version); -Geriatric Depression Scale Short Form (GDS); Cognition -Addenbrooke Cognitive Examination III (ACE-III); Quality of Life -The Quality of Life in Alzheimer Disease Loneliness Three-Item Loneliness Scale Side effects Sickness Questionnaire (SSQ) Quality of life - Quality of life- Alzheimer's disease scale (QOL-AD) Autobiographical memory The autobiographical memory interview (AMI) Mood - Geriatric Depression Scale (GDS-12R) Quality of relationships The quality of the caregiving relationship questionnaire ²⁴ (QCPR)
Subramaniam & Woods., 2016	United Kingdom	The aim of this study is to establish the importance of these potential benefits by comparing multimedia digital life storybooks with conventional life storybooks. with people with dementia in care homes, taking into account the perspectives of people with dementia, their relatives, and care staff.	Mixed Method (case study)	6	Digital Life Storybooks	P	RS, I	Mild to Moderate Dementia	Clinical Dementia Rating (CDR)	(continued)

Table 1. (continued)

Study	Country	Aim	Design	N	Technology	Participants ^a	Data collection ^b	Dementia severity (n =)	Cognitive measure	Outcomes measured
Sultana et al., 2021	Canada	To evaluate the feasibility (acceptance and safety) of VR experience designed to reduce responsive behaviours in nursing home residents with dementia	Quantitative (Single site case series (nonrandomised and unblinded)	24	Virtual Reality (immersive)	P	RS	Moderate to severe	Minimum Data Set-Cognitive Performance Scale (MDS-CPS)	Quality of life -Euro-Qol 5-Dimension scale (EQ-5D) Mood -Cornell Scale for Depression in Dementia (CSDD) -Cohen-Mansfield Agitation Inventory (CMAI) None specified
Thoft et al., 2022	Denmark	Aim: To explore how digital life stories can support identity, dignity, and communication for nursing home residents with dementia.	Qualitative (descriptive)	8	My Life Story app	S (8)	OBS, I	N/A	N/A	

^aP = Person with dementia (P), Family or informal carer (F), Staff or Practitioner (S), Researcher (R) (n =).

^bQuestionnaire (Q), Observation (OBS), Rating Scales (RS), Interviews (I), Focus Groups (FG).

Table 2. Study and Intervention Characteristics

Study	Intervention type	Intervention description	Technology	Theoretical framework	Intervention duration	Session length	Session frequency	Content type
Abdalahim et al., 2022	Reminiscence	Guided digital Reminiscence Therapy using touch screen technology adapted Schweitzer and Bruce (2008) sessions	Digital touch screen technology	Socioemotional Selectivity Theory (SST), Technology Acceptance Model	5 weeks	Up to 1 hr a session (depending on ability and willingness to participate)	10 sessions	Generic (focused to specific geographical area of study)
Björnskov et al., 2020	Reminiscence	Caregivers training workshops to support use of Life in the Memories films in their daily practice	DVD; television	Not specified	4 weeks	Unknown	Unknown	Generic
Davison et al., 2016	Reminiscence	Multimedia device 'Memory Box' in two care homes	Personal computer preloaded with individually digitalised content	Not specified	8 weeks (4 week intervention, 4 week control)	Mean daily running time 2.6 hr (SD 1.36) range 25 min to 5 hr	Daily	Personalised music, movies, messages, photos.
Goodall, André, et al., 2021	Reminiscence	SENSE-GARDEN – immersive, personalised, multi-sensory room facilitated by staff in two care homes	SENSE-GARDEN room (interactive screens, tablets, projectors, scent dispensers, music systems, touch screen of photos)	Symbolic interactionism and Deweyan transactionalism	12–16 weeks	Each session lasted 30–60 min	2–3 sessions per week	Personalised (life story media: Photos, music, video, scents, interactive activities)

(continued)

Table 2. (continued)

Study	Intervention type	Intervention description	Technology	Theoretical framework	Intervention duration	Session length	Session frequency	Content type
Goodall, Taraldsen, et al., 2021	Reminiscence	SENSE-GARDEN – immersive, personalised, multi-sensory room facilitated by staff in two care homes	SENSE-GARDEN room (interactive screens, tablets, projectors, scent dispensers, music systems, touch screen of photos)	Symbolic interactionism and Deweyan transactionalism	12–16 weeks	Each session lasted 30–60 min	2–3 sessions per week	Personalised (life story media: Photos, music, video, scents, interactive activities)
Manav & Simsek 2019	Reminiscence	Reminiscence therapy supported with internet-based videos based on Schweitzer and Bruce (2008) guide.	YouTube videos identified by researcher. Device used to watch was not specified.	Not specified	3 months	60 min	Once per week	Generic
McAllister et al., 2020	Reminiscence	Families and residents trained to use digital application ‘Memory Keeper’	iPad	Not specified	6 months	Not specified	Not specified	Personalised (photos, music, video clips, book covers, and other generic image based on themes such as work, food, pets)
Paay et al., 2022	Reminiscence	Memento smart watch for family carer	Smartwatch, smartphone and small transmitters	Not specified	Not specified	Not specified	Not specified	Personalised and generic

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Table 2. (continued)

Study	Intervention type	Intervention description	Technology	Theoretical framework	Intervention duration	Session length	Session frequency	Content type
Abraham et al., 2018	Digital life story	Digital storytelling using Com-Phone Story Maker app (Android)	Smartphone or tablet	Not specified	4 weeks	1 hr per session	12 sessions with the resident (3/ week), 4 support sessions with carers/family to aid story creation (1/ week)	Personalised (stories were created by researcher when visiting video sessions and use photos and sound clips, also health reports from carers, clips of social events, and resident's artwork or other media)
O'Phillip et al., 2017	Digital life story	Digital Life Story Work (LSW) delivered through workshops in community, home, and care home settings	Book of You – a multimedia digital life storybook app for computers, tablets, and smartphones	Not specified	4 weeks (plus follow-up) for care staff (6 weeks for dyads in community)	1–2 hr per session	4 weekly sessions or staff, plus optional follow-up (6 total for dyads in community)	Both generic (templates, images, audio clips) and personalised (photos, videos, memories, narration)
Subramaniam and Woods, 2016	Digital life story	Digital life storybook	Windows Movie Maker program was used to create a dynamic presentation of peach participants life which was burnt onto DVD	Not specified	Three sessions were set up to loop and play continuously	(The length of movie 12–27 min, M = 18)	12 months (with follow up data collected at 18 months)	Personalised
Thoft et al., 2022	Digital life story	Digital life stories	My Life Story app used on PCs, tablets, smartphones	Hermeneutic approach	Over a 3-month period.	Approx....5 hr (observation)	Total of 20 hr	Personalised with each resident's life story by staff

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Table 2. (continued)

Study	Intervention type	Intervention description	Technology	Theoretical framework	Intervention duration	Session length	Session frequency	Content type
Huang & Yang, 2022	Virtual reality (immersive)	Virtual reality (Immersive)	VIVE Pro VR Head-Mounted Display (HMD).	Not specified	3 months	10–12 min	Twice per week	Personalised photos, narration, music plus generalised holding rice to feed chickens (traditional in the old villages)
Kim et al., 2021	Virtual reality (immersive)	Virtual reality (Immersive)	Samsung HMD Odyssey Windows Mixed Reality Headset plus wireless controller, Head Mounted Display	Not specified	1 day	20–30 min each	1–2 sessions	Generic – five scenes created for the intervention: Train of memories, street of memories, nostalgic youth, homely hometown, where I want to go.
Saredakis et al., 2021	Virtual reality (immersive)	Virtual reality (Immersive)	Oculus Quest Head Mounted Display: YouTube VR (developed by Google LLC), a VR version of YouTube, was used to view personalized videos in VR. Google Street View, YouTube, and the internet	Not specified	2 weeks	20 min	Three individual reminiscence sessions	Generic

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Table 2. (continued)

Study	Intervention type	Intervention description	Technology	Theoretical framework	Intervention duration	Session length	Session frequency	Content type
Sultana et al., 2021	Virtual reality (immersive)	Immersive virtual reality (VR) experience using a smart projector	MK Player 360© projector with Broomx© software (non-head-mounted VR)	Not specified	2 weeks	30 min	5 sessions/week x 2 weeks = 10 sessions	Personalised (e.g. farm scenes, music, nature videos tailored to residents past interests)

Digital Life Story Interventions

Digital life story interventions ($n = 4/16$) focused on the co-construction of personalised biographical narratives using multimedia formats designed to stimulate conversation and social interaction. These interventions ranged from 1 to 12 months in duration, with sessions taking place weekly or on an ad hoc basis and lasting between 12 min to 2 hr. In one study, the format was adaptable, enabling the inclusion of a range of past and present life events (Abrahao et al., 2018). Applications included tablet-based storybooks, mobile applications, and video-based life stories. Abrahao et al. (2018) employed the Com-Phone Story Maker application to combine photographs, audio recordings, and personal information into digital narratives collaboratively developed by residents and carers. The Book of You application enabled staff and families to create multimedia life storybooks using templated structures populated with personalised content (O'Philbin et al., 2017). Other studies developed video-based life stories using Windows Movie Maker, which were stored on DVD for repeated use (Subramaniam & Woods, 2016), or used interactive platforms such as My Life Story (Thoft et al., 2022).

Immersive Virtual Reality (VR) Interventions

VR-based interventions ($n = 4/16$) represented some of the more recent studies identified in the review. Typical VR session durations ranged from 10 to 30 min, with interventions ranging from a single day (Kim et al., 2021) to 12 weeks (Huang & Yang, 2022). Some studies delivered sessions multiple times per week. Huang and Yang (2022) delivered personalised VR reminiscence sessions combining photographs, narration, and music through the VIVE Pro headset. Kim et al. (2021) developed generic nostalgic VR environments using the Samsung HMD Odyssey. Other studies employed Oculus Quest in conjunction with YouTube VR and Google Street View (Saredakis et al., 2021), or non-head-mounted immersive projection systems such as the MK Player 360 projector to create immersive nature-based environments (Sultana et al., 2021).

Representation of Stakeholder Voices in Intervention Development

The extent of stakeholder involvement in intervention design and development varied widely across studies (Table 3). Reminiscence and digital life story interventions demonstrated the greatest degree of user engagement, with several studies involving people with dementia (PwD), family carers, and care staff in content selection, prototype development, or providing qualitative feedback on design (e.g., Abdalrahim et al., 2022; Abrahao et al., 2018; McAllister et al., 2020). However, involvement was most commonly consultative rather than based on co-design principles. In contrast, VR-based interventions (e.g., Huang & Yang, 2022; Kim et al., 2021; Saredakis et al., 2021) typically involved people with dementia as end users, with limited input into design or adaptation. Feedback was usually gathered post-intervention and focused on comfort and usability, rather than informing the development of the technology itself.

Intervention Evaluation

Evaluation approaches varied across intervention types. Digital reminiscence interventions commonly employed qualitative or mixed methods designs, combining interviews, focus groups,

Table 3. Delivery, Co-Design and Outcomes

Study	Intervention type	Delivery format	In-person delivery	Commercial technology developed for the study	Co-design involvement ^a	Observed technology use ^b	User feedback collected ^c	Reported outcomes	Implementation barriers	Implementation facilitators	Key findings
Abdairahim et al., 2022	Reminiscence	One-to-one	Yes	No (custom-developed for the study)	PwD, F, S	PwD, S	PwD, S (post-intervention)	Improved mood, communication, and QoL. Participants preferred personalised content; practical challenges related to usability and staff support noted.	Limited technical skills among staff; residents need for assistance with technology; time required for preparation of personalised content.	Personalised content; simple step-by-step instructions; staff training and technical support.	Significant improvements in cognitive function, communication, anxiety and depression. Participants preferred personalised memories.
Bjornskov et al., 2020	Reminiscence	Unknown	Yes	Unknown	Unknown	No	S	Staff described some interventions as burdensome and time-consuming.	Staff workload; negative emotional responses to some generic content; competing care priorities.	Generic films reduced preparation time; staff training; flexible integration into routine care; quiet spaces.	Supported reminiscence and conversation; films were perceived as less burdensome than memory boxes.
Davison et al., 2016	Reminiscence	One-to-one	Yes	No	P (10)	No	PwD, F	Enhanced mood and social interaction. People with dementia required assistance using devices; some family members experienced technical difficulties.	Residents required assistance using devices; family members experienced difficulties creating video content; initial intervention costs.	Personalised content; technical support; scalable production of Memory Boxes.	Significant reductions in depression and anxiety.

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Table 3. (continued)

Study	Intervention type	Delivery format	In-person delivery	Commercial technology	Co-design involvement ^a	Observed technology use ^b	User feedback collected ^a	Reported outcomes	Implementation barriers	Implementation facilitators	Key findings
Goodall, André, et al., 2021	Reminiscence	One-to-one	Yes	No – developed as part of an EU research project (prototype stage)	People with mild cognitive impairment, S, F	S	PwD, F	Higher emotional engagement and QoL. Technical issues disrupted sessions and reduced intervention flow.	Technical problems could disrupt sessions; high-cost immersive technology raised scalability concerns.	Multisensory and personalised experiences; staff/family support; social interaction.	Supported mood, emotional engagement, identity and social interaction.
Goodall, Taraldsen, et al., 2021	Reminiscence	One-to-one	Yes	No – developed as part of an EU research project (prototype stage)	People with mild cognitive impairment, S, F	S	PwD, F	Higher emotional engagement and QoL. Staff reported intervention setup was time intensive and burdensome.	Staff struggled with technical components; set-up could take up to 1 hr per resident; excessive workload.	Peer/social support; technical assistance; organisational support and training.	Supported meaningful and personalised engagement.
Manav & Simsek 2019	Reminiscence	Group	Yes	Videos from YouTube but no mention of links to replicate	No	No	No	Improved MMSE and mood.	Preparation and delivery of digital material may require staff time and technical support.	Video-based content; structured reminiscence sessions.	Improved cognitive status, including MMSE scores.
McAllister et al., 2020	Reminiscence	One-to-one	Yes	No	PwD, F (worked together over 6 months with 2 families to develop prototype)	P, F	PwD, F, S	Enhanced emotional connection and communication.	Personalised approaches required greater preparation and facilitation.	Personalised information; involvement of carers; integration into relationships and care.	Supported engagement and improved relational quality between residents and carers.

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Table 3. (continued)

Study	Intervention type	Delivery format	In-person delivery	Commercial technology	Co-design involvement ^a	Observed technology use ^a	User feedback collected ^a	Reported outcomes	Implementation barriers	Implementation facilitators	Key findings
Pay et al., 2022	Reminiscence	One-to-one	Yes	Unsure	PwD, S (two-year collaboration with one care home)	P, S	PwD, S	None specified	Reliance on accurate and accessible personal information; technology integration into care routines.	Immediate access to personalised information; supported staff understanding of residents.	Supported spontaneous reminiscence and more personalised care.
Abraham et al., 2018	Digital life story	One-to-one	Yes	Open source app (free on Google Play)	Unsure	PwD, F, S	PwD, F, S (pre- and post-interviews)	Challenges associated with content management and uploading media.	Small screens; complexity of uploading/organising content; technical demands.	Larger screens; personalised photographs and information; involvement of residents and carers.	Supported communication, reminiscence and social interaction; personalised content enhanced engagement.
O'Philbin et al., 2017	Digital life story	One-to-one (group in community)	Yes	Book of You®	Not specified	No	S	Increased QoL and emotional well-being. Potential emotional distress when difficult memories emerged during life story work; staff required support to manage sensitive discussions.	Limited digital literacy among staff/families; technical and emotional challenges; time required to develop content.	Staff/family involvement; training; remote family access; personalised content; organisational support.	Supported communication, relationships and person-centred care; increased staff understanding of residents' identities.
Subramaniam and Woods, 2016	Digital life story	One-to-one	Yes	Windows Movie Maker	No	No	PwD, F, S	Improved mood and QoL.	Developing life stories later in dementia may limit resident involvement.	Early life story development; resident participation; personalised narratives.	Improved QoL and depression scores; supported identity and communication.

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Table 3. (continued)

Study	Intervention type	Delivery format	In-person	Commercial technology	Co-design involvement ^a	Observed technology use ^b	User feedback collected ^a	Reported outcomes	Implementation barriers	Implementation facilitators	Key findings
Thoft et al., 2022	Digital life story	One-to-one	Yes	Yes	Unsure	P, S, F	S	Greater empathy and understanding among staff.	Limited staff digital competence; need for training; workload and integration into routine practice.	Early assessment of digital skills; ongoing training and support; management involvement; personalised content.	Supported person-centred care, communication and understanding of residents' identities.
Huang & Yang, 2022	Virtual reality (immersive)	One-to-one	Yes	VR headset is available; content is not as developed as part of the project	Not specified	P	No	Reduced caregiver burden, mild mood improvement.	VR requires specialist equipment and support; evidence remains limited.	Personalised photographs; narration and music; immersive experience.	Preliminary evidence of positive effects on wellbeing/mood.
Kim et al., 2021	Virtual reality (immersive)	One-to-one	Yes	VR headset is available; content is not as developed as part of the project	PwD (feedback on psychological needs which was integrated into design)	P	No	Enjoyment and reminiscence responses reported. Some participants experienced discomfort and fatigue associated with head-mounted VR displays.	Headset discomfort and fatigue; usability issues associated with immersive equipment.	Nostalgic and engaging environments; relatively short sessions.	VR was feasible and acceptable, with potential to support engagement.
Saredakis et al., 2021	Virtual reality (immersive)	One-to-one	Yes	Headset is and content online	No	No	No	Improved mood and reduced loneliness. Measured simulator sickness: no significant adverse effects reported. Participants generally willing to use VR again.	Limited evidence of clinical effectiveness; potential usability issues associated with VR.	Acceptability: engaging immersive experiences; willingness to participate again.	No significant effects on depression, QoL, loneliness or sickness, but participants were willing to repeat the activity.

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Table 3. (continued)

Study	Intervention type	Delivery format	In-person delivery	Commercial technology	Co-design involvement ^a	Observed technology use ^a	User feedback collected ^a	Reported outcomes	Implementation barriers	Implementation facilitators	Key findings
Sultana et al., 2021	Virtual reality (immersive)	One-to-one	Yes	MK Player 360 and Broomx software	Family members provided content preferences; staff and researchers designed and implemented sessions	No	No	Increased relaxation and emotional engagement. Low adherence due to scheduling conflicts rather than intervention-related harms.	Fixed intervention schedule contributed to low adherence; small sample; disruption by family visits/daily routines.	Flexible scheduling; extending intervention duration; immersive nature-based content	Significant reductions in depression and agitation, although findings require cautious interpretation.

^aPeople with dementia (PwD), family carers (F), staff (S).

observations, and rating scales measuring mood, quality of life, and communication. Digital life story interventions were predominantly qualitative, involving interviews and observations, although some studies also utilised rating scales to assess QoL, mood and autobiographical memory (Abrahao et al., 2018; O'Philbin et al., 2017; Thoft et al., 2022). In contrast, VR interventions were primarily quantitative and mainly involved residents with dementia, using rating scales and questionnaires to measure mood, QoL, loneliness, side effects, although one study also assessed caregiver burden (Huang & Yang, 2022). Twelve studies assessed levels of cognitive impairment using established instruments such as the Mini-Mental State Examination (MMSE), Clinical Dementia Rating (CDR), or Global Deterioration Scale.

The reviewed studies demonstrated psychosocial benefits for residents with dementia, particularly in relation to mood, communication, and QoL. However, considerable heterogeneity was observed in the actual outcome measures utilised across studies. Within the digital reminiscence interventions, mood was shown to improve post intervention. Davison et al. (2016) reported a statistically significant reduction in depression and anxiety, with scores on the Cornell Scale for Depression in Dementia falling from a mean of 5.7 to 3.5 ($p < 0.01$) while scores on the Rating for Anxiety in Dementia scale fell from a mean of 6.6 to 3.2 ($p < 0.05$). Similarly, Abdalrahim et al. (2022) reported statically significant improvements in cognitive function, communication, anxiety and depression from pre-to post-intervention. Cognitive improvement was also observed in the reminiscence intervention reported by Manav and Simsek (2019), with increased MMSE scores in the intervention group post-intervention. Digital life story interventions similarly demonstrated improvements in QoL and self-expression. O'Philbin et al., 2017 highlighted qualitative feedback illustrating the value of the intervention for both residents and care staff, while Subramaniam and Woods (2016) reported improved QoL and depression scores post-intervention for 5/6 participants. VR studies were less conclusive. Sultana et al. (2021) reported significant reductions in depression and agitation scores, although the authors highlighted the need to interpret these findings cautiously due to the small sample sizes. Measures of depression, QoL, loneliness and sickness in Saredakis et al. (2021) were non-significant, although participants in both the VR and control groups reported that they would like to participate in reminiscence activities again. Reporting of adverse events was limited across studies. Most studies did not explicitly monitor or report harms. Where adverse effects were described, they primarily related to usability challenges, staff burden, emotional distress associated with sensitive memories, and discomfort or fatigue associated with immersive VR technologies.

Relational Benefits

Several interventions also demonstrated potential to enhance relationships between residents with dementia, care staff and family members. Goodall, André, et al. (2021) reported qualitative improvements in mood and emotional engagement through SENSE-GARDEN, while McAllister et al. (2020) documented improvements in relational quality between people with dementia and carers. The Memento smartwatch intervention provided care staff with personal information about residents with dementia, which staff described as supporting the delivery of more personalised care, particularly when caring for multiple residents (Paay et al., 2022). O'Philbin et al., 2017 further observed that digital life story interventions facilitated stronger relationships not only between staff and residents, but also between residents and their families, with some care homes using shared digital platforms to enable relatives to access content remotely. Staff reported a deeper understanding of residents' life histories and identities, which in turn fostered more empathetic and individualised care (O'Philbin et al., 2017).

Inclusivity and Cultural Representation

Reporting on inclusivity and cultural diversity was limited. Most studies provided minimal demographic information beyond age, gender, and dementia severity. Ethnicity, language background, cultural identity, and socio-economic factors were rarely described. Although personalised reminiscence content inherently allows for individual tailoring, explicit consideration of cultural adaptation, multilingual accessibility, or culturally specific materials was not reported. Consequently, the extent to which interventions were culturally responsive or inclusive of diverse populations remains unclear. Furthermore, most studies included individuals with mild to moderate dementia, frequently excluding those with advanced cognitive impairment. This highlights a gap in understanding of how accessible these interventions are across the full trajectory of dementia.

Implementation Barriers, Enablers, and End-User Support

Device design and interface features appeared to influence engagement (Table 3). Larger screens were preferred over smaller devices (Abrahao et al., 2018), and physical buttons were sometimes favoured over touchscreens (Davison et al., 2016). Content management processes, including uploading and organising digital media, were reported as complex and time-consuming (Abrahao et al., 2018). VR head-mounted displays were associated with discomfort or fatigue for some residents (Kim et al., 2021). Limited digital literacy among staff and family members necessitated additional support and training to use the technology (O'Philbin et al., 2017; Thoft et al., 2022). Davison et al. (2016) found that people with dementia required assistance to use devices, while family members experienced difficulties creating video messages due to limited technical proficiency. Technical issues disrupting sessions, were also reported in immersive systems such as SENSE-GARDEN, which reduced the seamlessness of the intervention experience (Goodall, André, et al., 2021).

Training to support the use of interventions in care practice typically addressed technical operation, troubleshooting, and communication strategies to facilitate reminiscence sensitively and effectively (Bjørnskov et al., 2020; Davison et al., 2016; O'Philbin et al., 2017). Ongoing technical support from researchers or IT personnel was considered critical for resolving issues promptly and maintaining engagement (Davison et al., 2016). Peer and social support among staff and family members also played a role in overcoming technical barriers (Goodall, André, et al., 2021; Goodall, Taraldsen, et al., 2021). Thoft et al. (2022) argued that early identification of care staff digital competencies, coupled with ongoing support and management involvement, was essential to ensure that digital life story tools were meaningfully integrated into daily care practices. Similarly, O'Philbin et al., 2017 highlighted the importance of equipping staff with the skills necessary not only to operate digital tools but also to navigate the emotional complexities that may arise during life story sessions, particularly when residents encounter difficult or distressing memories.

Organisational and Contextual Factors

Several studies reinforced the importance of designing interventions that are adaptable to the everyday rhythms of care home environments and the lived realities of participants. Sultana et al. (2021) observed that a fixed, two-week intervention schedule contributed to low adherence rates, particularly when sessions conflicted with family visits or daily routines. To address this, the

authors suggested that extending the intervention period and incorporating more flexible scheduling options may improve participation. Interventions that were rigidly scheduled were associated with reduced adherence (Sultana et al., 2021). Flexible integration into daily routines and delivery within quiet spaces were recommended to enhance feasibility (Bjørnskov et al., 2020). Staff workload and competing priorities also influenced perceptions of feasibility, with some reporting that personalised interventions were more time-intensive than generic alternatives (Bjørnskov et al., 2020). One study argued for the inclusion of current experiences alongside memories from the past (Bjørnskov et al., 2020). To enhance usability for staff, families, and residents, practical tools such as step-by-step instruction cards were proposed to facilitate engagement and reduce reliance on technical expertise (Abdallah et al., 2022). The value of personalised content in prompting interaction was highlighted across studies (O'Philbin et al., 2017; Paay et al., 2022). Abdallah et al. (2022) reported that people with dementia preferred interventions using personal memories, although this preference was not always reported by care staff, who often preferred interventions requiring less preparation time. For example, Bjørnskov et al. (2020) found that care staff perceived reminiscence films as less burdensome than memory boxes, although staff also reported negative emotional reactions to generic media, which emphasised the need for careful content selection.

The timing of interventions in the dementia journey was also considered important. Digital life story studies advocated initiating life story development earlier in the dementia trajectory to maximise resident involvement and ensure narrative authenticity (Subramaniam & Woods, 2016; Thoft et al., 2022). Early engagement enabled individuals to articulate their own life stories in their preferred manner, supporting identity preservation and providing care staff with a valuable resource to inform person-centred care during later stages of the condition. Although late-stage implementation was still considered beneficial, particularly for informing end-of-life care, opportunities for active resident participation were more limited.

Effective delivery of reminiscence interventions required care staff to feel knowledgeable and confident in using the technology with residents and/or family carers (Abdallah et al., 2022). However, attitudes towards technology and perceptions of value varied across studies. Goodall, Taraldsen, et al. (2021) reported that care staff were unable to manage the technical components of the SENSE-GARDEN intervention and felt that the set-up process which could take up to 1 hour per resident, placed excessive demands on staff alongside existing responsibilities. In some contexts, technology was perceived as an additional burden when introduced without sufficient organisational and managerial support (Abraham et al., 2018). Cost considerations were discussed in three studies. High-cost immersive systems raised concerns regarding scalability and sustainability (Goodall, André, et al., 2021; Goodall, Taraldsen, et al., 2021). Davison et al. (2016) similarly acknowledged the initial expense of producing Memory Boxes but argued that costs could be substantially reduced through scaled production.

Discussion

This scoping review explores digital reminiscence-based interventions in care homes, focusing on design and evaluation, inclusivity, and the barriers and facilitators to implementation. To our knowledge, this is the first review to explicitly synthesise evidence at the intersection of population (people with dementia), concept (digital reminiscence), and context (care home settings), building on previous reviews examining technology use in care homes (Bradley et al., 2023; Neal et al., 2020) and technology-supported reminiscence (Lazar et al., 2014). Overall, the findings suggest that there is growing evidence to support use of digital reminiscence-based interventions as a means of supporting engagement, communication, and emotional wellbeing among residents with

dementia in care homes. The evolution of interventions across studies reflected broader societal technological developments, with earlier interventions utilising DVDs and PowerPoint-style storybooks (Subramaniam & Woods, 2016), while more recent studies adopted immersive and multisensory systems such as SENSE-GARDEN (Goodall, André, et al., 2021; Goodall, Taraldsen, et al., 2021) and VR platforms (Huang & Yang, 2022; Kim et al., 2021; Saredakis et al., 2021; Sultana et al., 2021). Studies spanned different technology readiness levels (European Commission, 2022), although most were early-stage, with fewer than half ($n = 7$) evaluating commercially available tools such as Book of You©. This variation hindered consistent data collection, made quality assessment challenging, and limited comparison of outcome measures, particularly as some studies had not yet incorporated standardised outcome measures.

Digital technologies provided several advantages over traditional reminiscence approaches. Digital platforms enabled the creation of personalised life story resources that could easily be updated and shared between care staff, residents, and family members, including those living at a distance. This aligns with the principles of person-centred care, which emphasise the importance of recognising individuals' life histories and personal identities within care practices (Kitwood, 1997). Several studies reported that personal memories, compared with generic content, enhanced emotional resonance and therapeutic impact (Abdallah et al., 2022; Paay et al., 2022; Subramaniam & Woods, 2016). Personalised digital tools, such as life storybooks and digital memory prompts, supported caregivers in initiating conversations and deepening understanding of the individual (O'Philbin et al., 2017; Paay et al., 2022). Furthermore, documenting present-day experiences alongside memories stimulated richer conversations and reinforced continuity of identity (Abrahao et al., 2018). The findings therefore extend the current body of reminiscence literature (i.e., Thomas and Sezgin, 2021; Saragih et al., 2022; Woods et al., 2018) by demonstrating the social and emotional benefits of digital interventions for people with dementia living in care homes.

Despite these promising findings, several challenges relating to the implementation of digital reminiscence-based interventions were identified across the included studies. Common difficulties in integrating interventions into routine care practices included usability issues relating to technology design, lack of organisational infrastructure and support, and limited workforce capacity and digital literacy. Similar challenges have been noted in research on digital health technologies in long-term care settings, where organisational and resource limitations can affect technology adoption (Subramaniam & Woods, 2012). Additionally, considerable variation in intervention design, duration, and outcome measures was observed across studies, making it difficult to draw firm conclusions regarding the overall effectiveness of digital reminiscence-based interventions.

Gaps for Future Research

Future research should utilise participatory approaches involving residents, family members, and care staff in the co-design of digital reminiscence-based technologies. Such approaches may help ensure that a range of voices are included during design and development, and that interventions are both accessible and meaningful within residential care contexts (Bradley et al., 2023). There is also a need for greater standardisation in intervention design and outcome measurement to enable meaningful comparisons across studies. Larger and more rigorous studies are needed to evaluate the longer-term outcomes of digital reminiscence-based interventions in care homes.

The timing of interventions was identified as a key factor influencing effectiveness. Initiating life story documentation early, ideally at the point of diagnosis, was considered beneficial for maximising participation and supporting the maintenance of identity throughout the progression of

dementia, including transitions into residential care (McAllister et al., 2020; Thoft et al., 2022). However, this approach also raises important ethical considerations regarding informed consent as cognitive decline advances (Batchelor et al., 2012). Although this issue was not addressed within the included studies, it warrants further exploration in future research. Moreover, gaps were identified regarding the stages of dementia represented within the evidence base. Most studies focused on people with mild to moderate dementia and excluded individuals with more advanced dementia. Future research could therefore explore the impact of introducing digital interventions at the point of diagnosis and continuing through to end-of-life.

Limited information was reported regarding cultural diversity and inclusivity. This is a significant concern given the existing inequalities across the dementia care pathway. Ensuring that new interventions are designed and evaluated with inclusivity in mind is essential to avoid perpetuating or reinforcing these disparities from the outset (Clark et al., 2026). Although personalised reminiscence inherently allows adaptation to individual histories and identities, few studies explicitly addressed cultural sensitivity, language considerations, or socio-demographic diversity. This reinforces the need for future research to explicitly address representation and cultural responsiveness. Further research is also needed to understand digital literacy levels and identify effective training and support models within care home contexts. Exploring what works best in supporting residents, families, and staff to use digital reminiscence-based interventions in care homes, alongside applying clearer theoretical frameworks to guide intervention development, is essential for effective implementation (Abdallah et al., 2022; Goodall, André, et al., 2021).

Implications for Practice

Digital reminiscence should not be viewed as a stand-alone activity, but rather as a mechanism for embedding person-centred care within everyday routines. Integrating life story information into care planning systems can enhance staff understanding of residents' histories, preferences, cultural identities, and communication styles (Doran et al., 2019). This supports more relational approaches to care, particularly for staff who are new, agency-based, or less familiar with residents. Workforce development was central to the effectiveness of the digital reminiscence-based interventions. Staff required confidence not only in operating devices, but also in facilitating meaningful conversations and responding sensitively to distress (Hung et al., 2021). Embedding digital reminiscence within mandatory training programmes and supervision structures could normalise use as part of core practice among staff and residents, rather than positioning it as an optional activity. Moreover, digital tools may support greater involvement of family carers and other relatives in sharing life story information to enhance collaboration, support continuity of identity, and ease transitions into residential care (McAllister et al., 2020; Thoft et al., 2022). Digital reminiscence also has the potential to contribute to regulatory and quality frameworks by evidencing person-centred practice, provision of meaningful activities, and wellbeing outcomes. Managers and providers should therefore consider allocating protected time for reminiscence activities, ensuring access to reliable Wi-Fi and devices, and identifying 'digital champions' within staff teams to model and support practice.

Strengths and Limitations

This review synthesised 16 studies focused specifically on digital reminiscence-based interventions within care home settings. It highlights both the potential of digital reminiscence and the gaps requiring further investigation. Although several studies reported improvements

in mood and QoL, variability in methods, measures and small sample sizes limited comparability across studies. VR studies frequently excluded family perspectives, and longer-term impacts were rarely assessed. It should also be noted that the updated search conducted in 2025 did not identify any additional studies. This absence may reflect the interruption of research in care home settings during the COVID-19 pandemic, alongside potential delays in the dissemination and publication of findings. Studies examining artificial intelligence (AI)-based interventions (e.g., [Sheehy et al., 2024](#)) were also outside the scope of this review and warrant separate exploration.

Conclusion

The included studies suggest that digital reminiscence-based interventions represent a promising approach for supporting engagement and person-centred care of residents with dementia in care homes. Reminiscence and life story approaches appeared to enhance emotional and relational outcomes, while VR offered stimulation and mood support. Effective implementation requires personalisation to individual needs, acceptance from care providers and management, staff involvement and training, and family participation. However, further research is needed to strengthen the evidence base, address implementation challenges, and explore the ethical and cultural implications of effectively integrating digital technologies into everyday care practices. Future studies should utilise co-design approaches to develop interventions, standardise outcomes used to measure effectiveness, and examine sustained effects over time.

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Ethical Considerations

This is a review article based on publicly available published data, thus no ethical approval was sought, as no primary data were collected.

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The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Patient and Public Involvement

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Supplemental Material

Supplemental material for this article is available online.

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Graham Brittain is Director of Quality and Clinical Governance at Splendid Care, Sussex, UK. He has extensive experience in health and social care, with a particular focus on quality improvement, clinical governance, and the delivery of person-centred services for older adults. His work supports the development and evaluation of care practices that enhance outcomes and quality of life for people living with dementia and other complex care needs.

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