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REVIEW ARTICLE

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Determinants of prescribers' recommendations of welfare technologies for people with dementia: a scoping review

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ABSTRACT

Background: Welfare technologies are increasingly promoted to support people with dementia in living independently and safely. While prior research has primarily focused on user acceptance, usability, and effectiveness, less attention has been paid to the role of professionals who assess, select, and recommend these technologies.

Objective: This scoping review aims to identify and map the determinants that influence prescribers' recommendations of welfare technologies for people with dementia.

Methods: The review followed an established scoping review framework and adhered to PRISMA-ScR guidelines. Searches were conducted in Scopus, Web of Science, and PubMed, focusing on empirical studies published between 2016 and 2026. Studies were included if they examined professional practices related to recommending or prescribing welfare or assistive technologies for people with dementia. Sixteen studies met the inclusion criteria and were analysed using a descriptive thematic approach.

Results: Three categories of determinants were identified: professional, organisational and systemic, and technological and contextual. Professional determinants included knowledge, experience, ethical reasoning, and assessments of user and carer capability. Organisational determinants encompassed time constraints, training, procurement systems, and availability of technologies. Technological determinants related to usability, reliability, and suitability for cognitive impairment. Across studies, recommendation emerged as a sociotechnical process shaped by the alignment between these factors.

Conclusions: The findings highlight that access to welfare technologies is mediated by professional recommendation practices and shaped by multi-level conditions. The study contributes a fit-based understanding of recommendation, emphasising the need to address professional, organisational, and technological conditions to improve equitable access to appropriate technologies in dementia care.

IMPLICATIONS FOR REHABILITATION

- Rehabilitation professionals require skills in assessing cognitive needs, matching these to appropriate assistive technologies, and explaining their use and benefits to users and carers.
- Organisational factors (e.g. time, training, procurement systems) directly influence access to welfare technologies and should be addressed within rehabilitation services.
- Welfare technologies for people with dementia must be simple, reliable, and tailored to cognitive impairment to be considered in practice.
- Effective use of welfare technologies depends on involving informal carers and support networks throughout assessment and implementation.

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Welfare technology; dementia; recommendations; review; determinants

Introduction

Welfare technologies are increasingly promoted as a means to support people with dementia to live more independently, enhance safety, and improve quality of life while also addressing the growing demands placed on health and social care systems [1]. Such technologies include time-related assistive devices, safety and monitoring systems, digital cognitive supports, and other forms of assistive or smart

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technologies designed to compensate for cognitive decline and facilitate everyday activities [2]. In many countries, including Sweden, the use of welfare technologies is embedded in policy agendas that emphasise ageing in place, person-centred care, and the efficient organisation of public welfare services [3].

Despite their policy prominence and technological development, welfare technologies for people with dementia remain unevenly used in practice, reflecting both enabling and constraining conditions. A substantial body of research has examined the usability [4], effectiveness [5,6], and acceptance of such technologies [7] from the perspectives of people with dementia and their informal caregivers. These studies highlight important factors such as perceived usefulness, ease of use, ethical concerns, and the fit between technology and users' cognitive abilities [7]. However, access to welfare technologies is not determined by users alone. In most health and social care systems, technologies are introduced, recommended, or prescribed by professionals such as occupational therapists, clinicians, or care coordinators, who assess needs, select appropriate solutions, and decide whether and how a technology should be implemented [8].

Existing empirical studies focusing on professional practice indicate that the recommendation of welfare technologies for people with dementia is shaped by a complex interplay of factors. Research has shown that prescribers must balance assessments of functional needs with ethical considerations, user capacities, and the involvement of relatives, while also navigating organisational routines, time constraints, training opportunities, and the availability of technologies within local service systems [8]. Studies of occupational therapists and municipal care providers reveal that even when technologies are considered potentially beneficial, they may not be recommended due to uncertainty about effectiveness, concerns about usability for people with cognitive impairment, lack of institutional support, or limited follow-up resources [9]. Recommendation patterns also vary across technology types, suggesting that professional judgement and organisational context influence which technologies ultimately reach people with dementia [10]. In addition, previous research indicates that welfare technologies are not always regarded by prescribers as a preferred alternative in practice [11].

Although these empirical contributions provide important insights, the literature remains fragmented. Existing reviews have predominantly focused on user adoption, caregiver experiences, technological categories, or general barriers and facilitators to implementation [4,12,13]. Comparatively less attention has been given to synthesising the factors that shape professionals' decisions to recommend or refrain from recommending welfare technologies for people with dementia. As a result, there is limited consolidated knowledge of how professional, organisational, technological, and contextual conditions interact in recommendation practices.

Understanding these determinants can inform the design of technologies that better align with professional workflows, support the development of training and decision-support tools, and guide organisational and policy interventions aimed at improving access to appropriate technologies for people with dementia. Such knowledge can also contribute to moving beyond a primarily technological or user-centred perspective towards a broader socio-technical understanding of how welfare technologies are introduced and made available in dementia care.

Against this background, this scoping review asks:

What determinants influence prescribers' recommendations of welfare technologies for people with dementia?

The review aims to identify and map the factors that shape how, when, and why welfare technologies are recommended in dementia care and, through this synthesis, to identify implications for future research, policy, and design.

Related research

Research on welfare and assistive technologies for people with dementia has expanded considerably over the past two decades, driven by demographic ageing, policy priorities promoting ageing in place, and rapid technological development. A large proportion of this literature has focused on the acceptance, usability, and effectiveness of technologies from the perspective of people with dementia and their informal caregivers. Studies consistently show that perceived usefulness, usability, and the fit between technology and cognitive abilities strongly shape adoption and sustained use [14–16]. Ethical concerns related to privacy, autonomy, and dignity, are also frequently highlighted as influencing how technologies are experienced and accepted in everyday life [17].

Evidence regarding the benefits of welfare and assistive technologies should, however, not be interpreted as uniformly applicable across technologies, users, or care situations. Research has demonstrated potential benefits associated with particular technologies and outcomes, but the appropriateness of a technological solution also depends on the needs and capabilities of the person with dementia and the context in which the technology is introduced [5,16]. Consequently, a decision not to recommend a particular technology does not necessarily represent a barrier to adoption, but may reflect professional judgement that the technology is not an appropriate solution for the individual or situation.

A second body of research has examined organisational and systemic conditions for implementation. This literature emphasises barriers such as fragmented service systems, limited resources, lack of training, and procurement constraints, which may hinder the integration of welfare technologies into routine care [18,19]. Studies on implementation in health and social care demonstrate that organisational readiness, leadership support, and clearly defined workflows are critical for sustained use of digital and assistive technologies [20,21]. These findings suggest that technology uptake is not solely dependent on technical quality but on alignment with organisational structures and professional practices.

Furthermore, research has begun to address the role of health and care professionals as mediators of access to welfare technologies. In many welfare systems, technologies are not directly chosen by users but are introduced through professional assessment and recommendation. Empirical studies indicate that such decisions are shaped by professional knowledge, experience, ethical reasoning, and contextual constraints [22,23]. Occupational therapists and other prescribers must balance functional needs, cognitive capacity, risk considerations, and the involvement of relatives when determining whether a technology is appropriate [24,25]. Uncertainty regarding effectiveness, perceived mismatch between technology and user capability, and concerns about responsibility and follow-up may lead professionals to refrain from recommending certain solutions even when technologies are available [26].

Another relevant strand of literature examines variation in recommendation patterns across technology types. Evidence suggests that safety-oriented and lower-complexity technologies (e.g. basic alarms and reminder-based supports) are more commonly implemented in dementia care than more complex digital or monitoring systems, partly due to concerns about usability, follow-up, and responsibility [27]. This pattern indicates that professional familiarity, perceived reliability, and confidence in managing technology-related risks influence decision-making. Additionally, local service structures, particularly procurement processes, implementation capacity, and availability of training, shape which technologies professionals feel able to recommend in practice [28,29].

Despite these important contributions, the literature remains fragmented. Existing reviews have largely focused on user experiences, caregiver perspectives, or general barriers and facilitators to technology implementation [30,31]. Comparatively little attention has been devoted to systematically synthesising what shapes professionals' recommendation and prescription decisions, how these determinants interact, and how they vary across contexts and technological domains. Consequently, there is limited consolidated knowledge on how professional recommendation practices mediate access to welfare technologies for people with dementia.

From a broader socio-technical perspective, professional recommendation can be understood as situated within the interaction between professional judgement, organisational conditions, and technological characteristics. Decision-making involves balancing care values, risk management, and resource constraints rather than simply matching users with available technologies [18,21]. Developing a clearer understanding of these dynamics is essential for improving equitable access to appropriate technologies and for designing systems that better support professional decision-making.

Against this backdrop, the present scoping review addresses a critical gap by mapping and synthesising empirical evidence on the determinants that influence prescribers' recommendations of welfare technologies for people with dementia.

Methods

This study employed a scoping review methodology following the framework proposed by Arksey and O'Malley [32]. A scoping review was chosen because the aim of the study was to map the breadth,

characteristics, and determinants of prescribers' recommendations of welfare technologies for people with dementia, rather than to assess intervention effectiveness or aggregate outcomes. Given the conceptual diversity, methodological heterogeneity, and emerging nature of this research area, a scoping approach was considered appropriate to identify key concepts, types of evidence, and gaps in the literature. Consistent with Arksey and O'Malley's framework, the review was conducted in five stages: (1) identifying the research question, (2) identifying relevant studies, (3) study selection, (4) charting the data, and (5) collating, summarising, and reporting the results.

Stage 1: identifying the research question

The scoping review was guided by the following research question:

What determinants influence prescribers' recommendations of welfare technologies for people with dementia?

In line with the exploratory nature of scoping reviews, the question was intentionally broad to capture professional, organisational, technological, and contextual factors shaping recommendation and prescription practices in dementia care.

Stage 2: identifying relevant studies

A systematic search strategy was developed to identify empirical studies addressing professional recommendation, prescription, selection, or provision of welfare or assistive technologies for people with dementia. Three electronic databases were searched by the first author (Scopus, Web of Science, Pubmed). These databases were selected due to their different focus area.

The search strategy combined three core concept blocks:

1. Population: dementia, cognitive impairment, Alzheimer
2. Technology: welfare technology, assistive technology, digital health, monitoring systems, cognitive support, smart technology
3. Professional practice: prescrib*, recommend*, assess*, select*, provision, service delivery, clinician*, occupational therapist*, professional decision-making

Search strings were adapted to each database using appropriate Boolean operators and truncations (see Supplementary File). Reference lists of included articles were also screened to identify additional relevant studies.

Stage 3: study selection

All retrieved records were imported into the reference management software EndNote, where duplicates were removed before screening began. The screening process was carried out in two stages. First, titles and abstracts were reviewed to exclude studies that were clearly irrelevant. Articles considered potentially eligible were subsequently retrieved in full text. At the full-text stage, both authors reviewed the articles and assessed their eligibility against the predefined criteria. Any differences in eligibility assessments were discussed until consensus was reached.

Studies were included if they focused on people with dementia or cognitive impairment as the target population; examined professional practices related to the recommendation, prescription, assessment, selection, or provision of welfare or assistive technologies; reported empirical findings using qualitative, quantitative, or mixed-methods approaches; and were published in peer-reviewed journals in English. Studies were excluded if they concentrated solely on user adoption, usability, or caregiver perspectives without addressing professional decision-making; if they examined technology implementation only at a general organisational or policy level without reference to recommendation or prescription practices; or if they were reviews, editorials, or conceptual papers.

Stage 4: charting the data

Data were extracted from each included study using a structured charting form. The following information was recorded:

- Author(s), year, country
- Study aim and design
- Professional group(s) involved (e.g. occupational therapists, clinicians, care coordinators)
- Key findings related to determinants of recommendation or prescription

The charting process was iterative; categories were refined as familiarity with the literature increased, in line with Arksey and O'Malley's approach.

Stage 5: collating, summarizing, and reporting the results

Extracted data were analysed using a descriptive and thematic approach [33]. Findings were first summarised to provide an overview of study characteristics and research contexts. Both authors then independently reviewed and analysed the findings of the included studies and developed preliminary interpretations of recurring determinants, categories, and themes. These independently generated interpretations were subsequently compared and discussed, and differences were resolved through consensus. Through this iterative process, the determinants influencing prescribers' recommendations were organised into higher-order themes reflecting professional determinants, organisational and systemic determinants, and technological and contextual determinants.

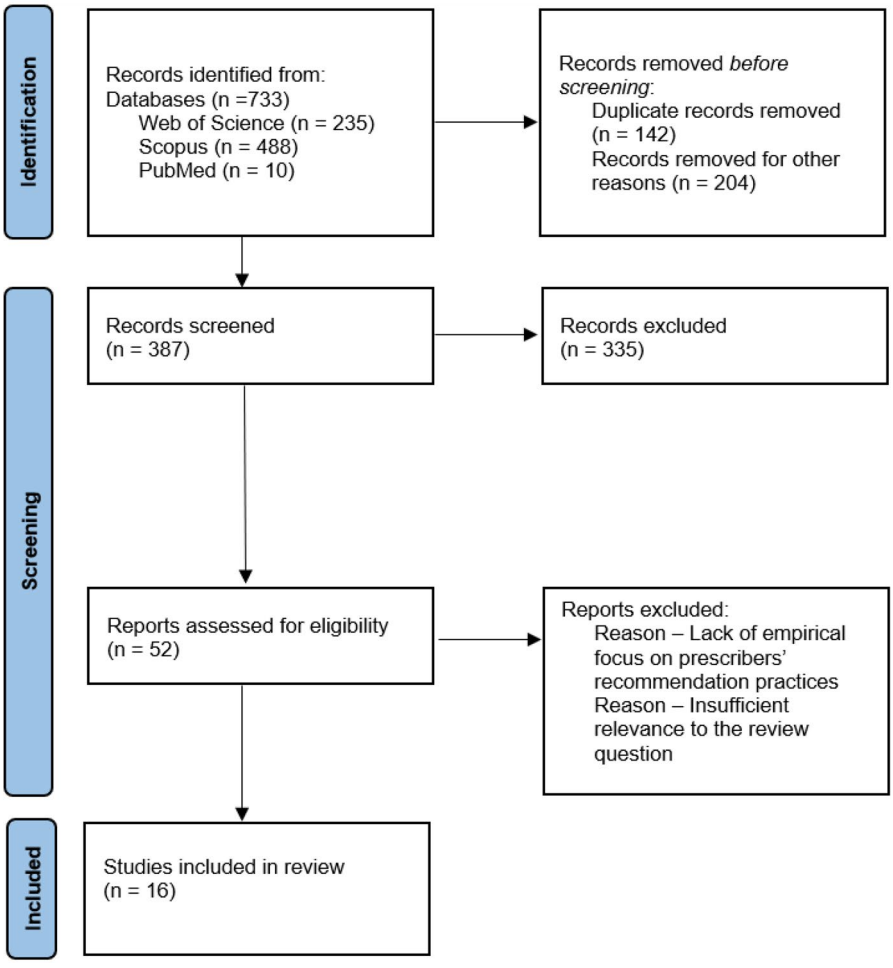

Figure 1. PRISMA flowchart.

The results are presented narratively and thematically to map the scope of existing evidence and to highlight areas where empirical research is limited or inconsistent.

Reporting and study selection process

The database searches yielded a total of 733 records, including 235 from Web of Science, 488 from Scopus, and 10 from PubMed. During an initial screening step, 204 records were excluded because they were published prior to 2016 and were identified as irrelevant to the scope of the review, despite being retrieved after search refinement. In addition, study protocols were excluded at this stage. Following these exclusions, 529 records remained for further screening. Duplicate records were then identified and removed ($n = 142$), resulting in 387 unique records. Titles and abstracts of these records were screened for relevance to prescribers' recommendations of welfare technologies for people with dementia. During this stage, 335 records were excluded because they did not focus on professional decision-making, did not target people with dementia, or addressed technology use solely from user or caregiver perspectives.

Full texts of 52 articles were subsequently retrieved and assessed for eligibility. Following full-text screening, 36 articles were excluded due to lack of empirical focus on prescribers' recommendation practices or insufficient relevance to the review question. In total, 16 articles met the inclusion criteria and were included in the final synthesis (see Figure 1).

Results

Characteristics of reviewed articles

The characteristics of the reviewed articles are summarised in Table 1. Of the 16 included studies, 2 were conducted in Australia, 1 in Denmark, 1 jointly in Canada and the Netherlands, 1 in Germany, 1 in the Netherlands, 4 in Sweden, and 6 in the United Kingdom. Regarding study design, 3 used mixed methods, 1 used observations, 1 was a randomised controlled trial, 5 were survey-based, and 6 employed qualitative methods. As shown in Table 1, the studies involved a wide range of professionals, most commonly occupational therapists. The aim of each study is also listed in Table 1 and aligns clearly with the focus of this review.

Determinants influencing prescribers' recommendations

The descriptive thematic analysis identified three broad categories of determinants influencing prescribers' recommendation of welfare technologies for people with dementia: professional determinants, organisational and systemic determinants, and technological and contextual determinants. Across the 16 included studies, recommendation emerged not as a purely clinical or technical act, but as a situated decision shaped by interrelated competencies, institutional conditions, and judgments about technological fit. Several studies contributed to more than one category, reflecting the overlap between professional practice, service organisation, and technological suitability (see Table 2).

Professional determinants

Knowledge, competence, and experience

Knowledge, competence, and experience emerged as important influences on recommendation, although their relationship with recommendation was not straightforward. Tsertsidis [8] highlighted that occupational therapists may be generally familiar with welfare or assistive technologies while still lacking knowledge specifically related to cognition and dementia. Haydon et al. [34] similarly suggested that assistive technologies for dementia are insufficiently embedded in professional education, and that higher general health literacy does not necessarily translate into stronger dementia knowledge or knowledge of available technologies. Jarvis et al. [10] identified lack of knowledge and experience among occupational therapists as barriers to prescription, while Pol et al. [35] stressed lack of competence both in using technologies and in explaining their benefits to others. At the same time, Tsertsidis and Mbiydzenyuy [9] showed that positive perceptions of welfare technology and some degree of professional knowledge did

Table 1. Characteristics of reviewed articles.

References	Country	Aim	Design (method)	Groups involved
Swinson et al. [38]	United Kingdom	To scope OT service provision for people with dementia and their family carers	Survey	Occupational therapists
Hall et al. [41]	United Kingdom	To explore facilitators and barriers to the implementation of monitoring technologies in care homes	Interviews	Registered nurses, clinical specialists, senior managers and case workers
Jarvis et al. [10]	Australia	To describe the attitudes and practices of occupational therapists in recommending and using assistive technology for people with dementia	Survey	Occupational therapists
Dugstad et al. [45]	Sweden	To identify the facilitators and barriers for implementation of digital monitoring technology in residential care for persons with dementia and wandering behaviour, and explore cocreation as an implementation strategy and practice	Mixed	Healthcare professionals, vendors, healthcare service staff, IT service staff
Forsyth et al. [37]	United Kingdom	To provide an investigation of routine ATT practice and the systems in place to deliver ATT for people with dementia	Randomised control trial	Telecare monitoring centre managers
Holthe et al. [36]	United Kingdom	To explore how community health care workers enacted current policy on technology with home-dwelling citizens with MCI/D	Interviews	Community healthcare workers
Freiesleben et al. [40]	Germany	To expand knowledge on barriers to the adoption of locating technologies from a multi-stakeholder professional perspective, and to explore strategies to optimise adoption	Interviews	Professionals in healthcare, business and research
Steils et al. [43]	United Kingdom	To explore telecare manager and other 'stakeholder' perspectives on the nature, extent and impact of family and other unpaid/informal carers' involvement in the provision of telecare equipment and services for older people	Mixed	Telecare managers
Tsertsidis [8]	Sweden	To identify structural problems and challenges for the delivery of digital technologies for ageing in place to elderly with dementia	Interviews	Occupational therapists
Odéus et al. [44]	Sweden	To investigate prescription pattern, return rate and cost of provided solution	Observations	Municipality managers
Haydon et al. [34]	Australia	To assess dementia knowledge and health literacy among a sample of Australian healthcare students, identify modality preferences of digital health interventions addressing dementia prevention and (c) examine potential relationships among health literacy, dementia knowledge, dementia prevention knowledge and a student's preferences for different digital health modalities	Survey	Students studying to become healthcare professionals
Pol et al. [35]	Canada + Netherlands	To gain an understanding of the factors that influence the implementation of an evidence-based sensor monitoring intervention (SMI) for older adults by analysing the perspectives of rehabilitation professionals working in 2 different health ecosystems and mapping SMI barriers and facilitators	Interviews	Rehabilitation providers, occupational therapists
Curnow et al. [39]	United Kingdom	To understand the challenges facing practitioners to identify where service changes should be focused to improve this situation	Mixed	Occupational therapists
Van der Roest et al. [42]	Netherlands	To explore factors that influence the implementation of ATs for community-dwelling people with dementia, with the aim to better understand potentially effective implementation strategies	Survey	Psychosocial researchers working closely with healthcare professionals
Fersch et al. [46]	Denmark	To provide an investigation of both the mechanisms of digital exclusion and of how these are (at least partly) mitigated in the context of the provision of digital services by health and social care units of two Danish rural municipalities	Survey	Frontline professionals in the provision of technologies
Tsertsidis and Mbiydzenyuy [9]	Sweden	To explore the perspectives of occupational therapists on the recommendations of welfare technologies for individuals with dementia	Interviews	Occupational therapists

not automatically translate into higher recommendation frequency. Taken together, these findings suggest that knowledge, competence, and experience can support recommendation but are not sufficient conditions in themselves.

Table 2. Presentation of the themes and Sub-themes which emerged from the analysis.

Theme	Sub-theme	References
Professional determinants	1 – Knowledge, competence and experience	Tsertsidis [8], Haydon et al. [34], Jarvis et al. [10], Pol et al. [35], and Tsertsidis and Mbiydzenyuy [9]
	2 – Translating needs into technological solutions	Holthe et al. [36], Forsyth et al. [37], Swinson et al. [38], and Curnow et al. [39]
	3 – Ethical reasoning and professional judgement	Holthe et al. [36], Freiesleben et al. [40], and Hall et al. [41]
	4 – Assessment of user and carer capability	Van der Roest et al. [42], Pol et al. [35], and Steils et al. [43]
Organisational and systemic determinants	1 – Time, training and resource constraints	Swinson et al. [38], Odéus et al. [44], Dugstad et al. [45], and Tsertsidis and Mbiydzenyuy [9]
	2 – Organisational ambiguity and augmented responsibility	Dugstad et al. [45], Holthe et al. [36], and Hall et al. [41]
	3 – Procurement, funding and restricted technology options	Curnow et al. [39], Tsertsidis [8], Forsyth et al. [37], Fersch et al. [46], Jarvis et al. [10], and Odéus et al. [44]
	4 – Lack of guidelines and weak institutionalised learning	Dugstad et al. [45], Jarvis et al. [10], Tsertsidis [8], and Haydon et al. [34]
Technological determinants	1 – Usability, reliability and simplicity	Hall et al. [41], Freiesleben et al. [40], Dugstad et al. [45], and Van der Roest et al. [42]
	2 – Suitability for cognitive impairment and matching with daily life	Van der Roest et al. [42], Pol et al. [35], Steils et al. [43], Tsertsidis [8], and Fersch et al. [46]
	3 – Social support, informal carers, and contextual embeddedness	Van der Roest et al. [42], Pol et al. [35], Steils et al. [43], Tsertsidis [8], and Fersch et al. [46]

Translating needs into technological solutions

Another prominent theme concerned the challenge of translating assessed needs into appropriate technological recommendations. Holthe et al. [36] described unsystematic approaches to assessing how an individual's needs can be matched to a specific tool, while Forsyth et al. [37] similarly showed that professional knowledge and experience influence which kinds of technologies are actually prescribed. Swinson et al. [38] claimed that limited knowledge of assessment instruments can affect how well needs are translated into technological options, and Curnow et al. [39] pointed more broadly to limited knowledge, training, and hindered access as factors affecting occupational therapy assessment for assistive technology.

Ethical reasoning and professional judgement

Recommendations also involved ethical reflection and broader professional judgement. Holthe et al. [36] noted that professionals consider whether technology implementation may create risks, including the possibility that it could contribute to isolation. Freiesleben et al. [40] similarly showed that ethical concerns are weighed in the prescription process, particularly around monitoring technologies and tensions between safety and surveillance. Hall et al. [41] highlighted that decision-making can become difficult when different actors, such as staff, relatives, and end users, may hold different views about what ought to be chosen.

Assessment of user and carer capability

Professionals' assessments of whether people with dementia and their carers can learn, manage, and use a technology also influenced recommendation. Van der Roest et al. [42] emphasised that the capacity of end users and informal carers to learn and use assistive technology affects whether a device is considered suitable for prescription. Pol et al. [35] similarly identified cognitive limitations and user capacity as factors influencing implementation, while stressing that carers' involvement is crucial to successful use. Steils et al. [43] pointed to the central role of carers during assessment and implementation. The included studies describe these assessments as part of professional decision-making but do not establish whether such judgements are systematically accurate or biased.

Organisational and systemic determinants

Time, training, and resource constraints

A second major category concerns the organisational and systemic conditions under which recommendation takes place. Time constraints were a particularly common barrier. Dugstad et al. [44] reported lack

of resources regarding time and training in welfare or assistive technologies for people with dementia. Swinson et al. [38] identified that time restraints during assessment may hinder the identification of an appropriate technological solution, and that timing also matters in relation to when families seek support. Odéus et al. [45] presented prescription itself as a time-consuming process for both healthcare providers and users and explicitly framed time as a cost issue. Tsertsidis and Mbiydzenyuy [9] similarly described time as a major factor limiting access to additional training.

Organisational ambiguity and fragmented responsibility

Unclear organisational structures and contested responsibility also emerged as important systemic determinants. Dugstad et al. [44] pointed to unclear organisational structures and the need to involve the right professions rather than relying on top-down approaches. Holthe et al. [36] similarly described contested responsibility and unclear local structures around who is responsible for what in the prescription process. Hall et al. [41] reinforced this by showing that decision-making can be difficult to navigate when multiple actors are involved.

Procurement, funding, and restricted technology options

A particularly strong theme across the identified studies was that recommendation was shaped by what organisations make available through procurement and funding arrangements. Tsertsidis [8] highlighted how the range of technologies available through local service systems together with variations in guidelines can limit prescription, while also noting the lack of clarity around procurement processes for technologies outside the locally approved range. Fersch et al. [46] similarly argued that a restricted range of available technologies affects what can be prescribed. Forsyth et al. [37] also showed that locally available technology options, local permissions, and supplier-bound systems influence the types of technologies that can be recommended. Curnow et al. [39] identified restricted access and variable funding as part of the problem, and Jarvis et al. [10] linked limited options and increased purchasing costs to lower likelihood of prescription. Odéus et al. [45] added a more explicit economic dimension by showing that prescription may be seen as more costly than medication because of personnel and process costs.

Lack of guidelines and weak institutionalised learning

Several studies also pointed to the absence of standardised routines, guidelines, and institutionalised learning structures. Tsertsidis [8] reported a lack of clear guidelines regarding implementation and how procurement should be initiated. Dugstad et al. [44] described unclear regulations and local variations in how technologies are delivered, together with insufficient organisational support for building the prerequisites for technological skills. Jarvis et al. [10] similarly pointed to unclear assessment guidance, while Haydon et al. [34] emphasised that assistive technologies do not appear to be well integrated into professional curricula.

Technological and contextual determinants

Usability, reliability, and simplicity

A third category concerned with the qualities of the technologies themselves and the contexts in which they are used. One of the clearest patterns across the studies was that technologies must be usable, simple, and reliable to be recommendable. Van der Roest et al. [42] identified technological characteristics as central to whether a technology is judged suitable for prescription. Dugstad et al. [44] reported that faults in devices, such as faulty alarms, can hinder prescription and implementation. Freiesleben et al. [40] also noted that technologies may fail to provide reliable data or may be difficult to use, discouraging adoption. Hall et al. [41] similarly stressed simplicity as crucial and points to faulty systems as barriers.

Suitability for cognitive impairment and matching with daily life

Beyond general usability, recommendation is influenced by whether technologies are seen as suitable for the specific needs of people with dementia. Van der Roest et al. [42] explicitly noted that many assistive technologies target the general population and therefore require adjustments to be relevant for dementia care. Freiesleben et al. [40] similarly pointed out that it is not always easy to match end-user needs with available products. Forsyth et al. [37] and Hall et al. [41] both showed that technologies are evaluated according to how well they can assist a person in everyday life, while Steils et al. [43] extended this by noting that technologies may also be assessed in terms of whether they reduce carer workload.

Social support, informal carers, and contextual embeddedness

Another consistent finding is that recommendation is strongly shaped by support networks and social context. Van der Roest et al. [42] identified support networks as crucial in adoption. Pol et al. [35] similarly highlighted informal carer involvement as essential to implementation, and Steils et al. [43] placed carers centrally within telecare provision and the assessment process. Tsertsidis [8] emphasised that low knowledge among relatives may even prevent the prescription process from being initiated in the first place. Fersch et al. [46] broadened this argument by showing that context, including place of residence, can affect whether families can access information about welfare or assistive technologies.

Integrative synthesis: recommendation as a fit-based sociotechnical process

Taken together, the findings show that the recommendation of welfare technologies for people with dementia is shaped by an ongoing process of assessing fit across multiple levels. Professional determinants influence whether prescribers feel capable of identifying and justifying technological solutions. Organisational and systemic determinants shape what is possible within available structures, resources, and procurement arrangements. Technological and contextual determinants shape whether a technology is perceived as usable, reliable, and appropriate for a person's cognitive condition and care context. Across the 16 studies, recommendation therefore appears as a sociotechnical and relational process, rather than a simple individual decision. Technologies are more likely to be recommended when there is alignment between user needs, professional competence, organisational support, and the practical qualities of the technology itself; where such alignment is weak, recommendation is hindered or does not occur. The identified determinants should not be understood as producing an all-or-nothing pattern of recommendation. Rather, they appear to influence which technologies are considered appropriate and feasible for particular users and circumstances, meaning that professionals may recommend some technologies while refraining from recommending others.

Discussion

This study set out to map the determinants influencing prescribers' recommendation of welfare technologies for people with dementia. The findings demonstrate that recommendation is not primarily an individual clinical decision, but rather a sociotechnical process shaped by the interaction between professional competence, organisational conditions, and technological characteristics. This extends prior work on welfare technology implementation in dementia care, which has often emphasised either user-level factors (e.g. acceptance, cognitive capacity) or technological characteristics (e.g. usability) [4,7], by showing that recommendation emerges through multi-level alignment across professional, institutional, and material domains. In this sense, recommendation can be understood as a situated practice, rather than a standardised procedure. Professionals do not simply apply guidelines or select optimal technologies; instead, they navigate constraints, interpret needs, and negotiate trade-offs in context. This aligns with broader perspectives in previous research, where adoption is viewed as contingent on local conditions rather than driven by evidence alone [10]. A key contribution of this study is the identification of "fit" as an underlying mechanism shaping recommendation practices. Across all themes, technologies were more likely to be recommended when there was alignment between:

- The needs and capabilities of the person with dementia.
- The professional's knowledge and confidence.
- Organisational resources and structures.
- The usability and suitability of the technology.

When such alignment was lacking, recommendation was either delayed, constrained, or not pursued at all. Importantly, non-recommendation should not automatically be understood as a failure to overcome barriers. Where alignment between the technology, the person's needs and capabilities, and the surrounding care context is poor, refraining from recommendation may instead represent appropriate professional judgement. Furthermore, this notion of fit resonates with concepts in sociomateriality (e.g. [47]), where technologies and practices are understood as mutually constitutive, and with person–environment fit frameworks in rehabilitation. However, this study extends these perspectives by demonstrating that fit is not only relational between user and technology, but also institutionally and professionally mediated. Additionally, the findings highlight that professional knowledge and competence are important but insufficient conditions for recommendation. While lack of knowledge, training, and experience clearly constrain recommendation, the presence of knowledge alone does not guarantee use (or recommendation). This supports and extends previous research suggesting a persistent knowledge–practice gap in health and social care [22,23]. Importantly, professionals are not only required to understand technologies, but also to translate complex needs into appropriate solutions, justify their use, and manage ethical implications [17]. This suggests that competence in this domain is not purely technical, but also interpretive, relational, and ethical [24,25].

Another important contribution is the identification of organisational and systemic factors as "hidden determinants" of recommendation. While professional decision-making is often foregrounded in both research and practice, this study shows that what can be recommended is frequently pre-configured by:

- Procurement systems and available technology options.
- Funding arrangements and cost considerations.
- Time constraints and workload pressures.
- Lack of clear guidelines and responsibilities.

These findings align with previous literature [28,29] emphasising the role of organisational context, but they also suggest a stronger claim that recommendation is structurally bounded. In other words, professionals may be willing and able to recommend technologies, but are constrained by what is accessible, permitted, and supported within their organisational environment [8]. This shifts the analytical focus from "why professionals do not recommend technologies" to "what conditions make recommendation possible or impossible."

Furthermore, the findings also reinforce that technologies themselves are not neutral tools but active determinants in the recommendation process. Usability, reliability, and simplicity function as threshold conditions and that if these are not met, technologies are unlikely to be recommended regardless of potential benefits [26,30]. At the same time, we identified a persistent design–use misalignment, where many technologies are developed for the general population rather than for individuals with cognitive impairment [42]. We believe, that this creates additional burdens on professionals, who must adapt or reinterpret technologies for contexts they were not directly designed for. This finding contributes to discussions in digital health and assistive technology research by emphasising that implementation challenges are often rooted in design assumptions [16], rather than solely in user resistance or professional reluctance.

Moving on, another important insight is that recommendation is deeply socially embedded. The involvement of informal carers and support networks is not peripheral but central to whether technologies are considered appropriate and feasible. This supports previous research [18,21] emphasising the relational nature of care, but also extends it by showing that technological adoption depends on distributed capacity that is, not only on the individual user, but on the broader network of people who can support use, learning, and maintenance throughout time [23]. Furthermore, contextual factors such as geographical location and access to information highlight the risk of digital exclusion, particularly in rural or resource-constrained settings [46]. This could also point out to the fact that inequalities in access to technology are not only technological but also informational and infrastructural [2].

Theoretical implications and practical implications

This study advances the literature in several interconnected ways. To begin with, it develops a multi-level understanding of recommendation practices. Rather than treating recommendation as an isolated individual decision, the study shows how it emerges from the interaction of professional judgement, organisational conditions, and technological characteristics. In doing so, it reframes recommendation as a situated, relational process.

A second contribution lies in introducing "fit" as an integrative concept. By identifying fit as the mechanism that links professional, organisational, and technological levels, the study offers a unifying lens that can guide future research on welfare technologies, digital health, and potentially the implementation of AI in care settings. This perspective helps explain why certain technologies are taken up while others fail to gain traction, even when they appear promising on paper.

Third, the study brings implementation and sociomaterial perspectives into closer dialogue. By highlighting both structural constraints and material features of technology, it demonstrates how adoption is shaped by the interplay between social, organisational, and technological conditions. This integrated view helps move beyond simplified accounts of "barriers" and "facilitators" towards a more nuanced understanding of how technologies become embedded in everyday practice.

These theoretical insights also translate into several practical implications. Strengthening professional competence requires training that goes beyond general awareness and instead supports practitioners in translating user needs into concrete technological solutions, navigating ethical considerations, and communicating the value of these technologies to users and carers. At the organisational level, clearer role definitions, more flexible procurement processes, and adequate time and resources for assessment and follow-up are essential for sustainable implementation.

The findings also point to the need for more thoughtful technology design. Developers should create solutions that are genuinely adapted to the needs of people with cognitive impairment, with usability and reliability as central design principles. Co-creation with professionals and users is crucial to ensure that technologies align with real-world contexts and constraints.

Finally, effective implementation must explicitly recognise the role of carers and broader support networks. This includes involving informal carers, strengthening support structures, and providing context-specific resources that support appropriate implementation and use of technologies in everyday life.

Limitations and future research

This study has several limitations. First, the analysis is based on a relatively small number of studies, which may limit the breadth of the evidence captured. Second, the findings are derived from secondary data, meaning that interpretations are constrained by how determinants were reported in the original studies. Third, the included studies vary in context, methodology, and scope, which may influence the comparability of findings. In addition, the geographical distribution of the included studies represents a limitation, as the evidence base is strongly concentrated in high-income countries, particularly European settings. The determinants identified in this review may therefore partly reflect specific welfare systems, service-delivery arrangements, procurement structures, and professional practices, and their transferability to other contexts should not be assumed. Future research should examine recommendation practices across a broader range of geographical and socioeconomic settings, particularly in low- and middle-income countries, to determine whether additional contextual determinants emerge. Future research could also focus on empirically exploring how new technological developments, such as AI-driven tools, can be or are used to reshape recommendation practices.

Conclusion

The recommendation of welfare technologies for people with dementia is best understood not as an individual professional decision, but as a context-dependent sociotechnical process. It emerges through

the alignment, or misalignment between professional competence, organisational conditions, and technological characteristics. By identifying fit as a central mechanism, this study provides a foundation for both future research and practical interventions aimed at improving the adoption and effective use of welfare technologies in dementia care.

Author contributions

CRediT: **Antonios Tsertsidis**: Conceptualization, Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing; **Irene Rapado**: Conceptualization, Methodology, Writing – original draft, Writing – review & editing.

Generative AI statement

During the preparation of this work the authors used ChatGPT for language check and light editing for readability purposes. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the manuscript.

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Data availability statement

The data set associated with the paper is located in the Supplementary Files.

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