

Supplementary Table 1

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	0
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	2, 3
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	3
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	3
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	4
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	4
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	4 (Supplementary Information)
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	4
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	5
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	5, 6

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	5, 6
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	5
Characteristics of sources of evidence	15	For each source of evidence, present characteristics for which data were charted and provide the citations.	7, 8
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	9, 10, 11, 12, 13
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	9, 10, 11, 12,
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	13, 14, 15
Limitations	20	Discuss the limitations of the scoping review process.	16
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	16
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	17

JB1 = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.

* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.

† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).

‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.

§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med.* 2018;169:467–473. doi: 10.7326/M18-0850.

Supplementary Table 2

Search Terms

The search terms derived for the research question	
Concept	Terms
1: Dementia and other cognitive impairments	Dementia, Alzheimer, mild cognitive impairment, subjective cognitive decline, subjective cognitive impairment
2: Digital health intervention	augmented reality, assistive device, assistive technology, chatbot, conversational agent, conversational assistant, digital health, digital intervention, digital health intervention, digital therapeutic, MHealth, mobile app, mobile health, online intervention, robot, voice assistant, virtual reality, wearable

Supplementary Table 3

Search Query for Each Database

Database	Search String
ACM Digital Library n = 69 As of 09.10.2025	[Title: dementia?] OR [Title: alzheimer?] OR [Title: "mild cognitive impairment"] OR [Title: mci] OR [Title: "subjective cognitive decline"] OR [Title: scd] OR [Title: "subjective cognitive impairment"] OR [Title: sci]] AND [[Title: ar] OR [Title: "augmented reality"] OR [Title: "assistive device?"] OR [Title: "assisted device?"] OR [Title: "assistive technology"] OR [Title: "assisted technology"] OR [Title: "assistive technologies"] OR [Title: "assisted technologies"] OR [Title: chatbot] OR [Title: "conversational agent*"] OR [Title: "conversational assistant?"] OR [Title: "digital health"] OR [Title: "digital intervention"] OR [Title: "digital health intervention"] OR [Title: "digital therapeutic"] OR [Title: "digital therapeutics"] OR [Title: mhealth] OR [Title: "mobile app"] OR [Title: "mobile application"] OR [Title: "mobile health"] OR [Title: "online intervention"] OR [Title: robot*] OR [Title: "voice assistant"] OR [Title: "virtual reality"] OR [Title: vr] OR [Title: wearable?]] AND [[Abstract: dementia?] OR [Abstract: alzheimer?] OR [Abstract: "mild cognitive impairment"] OR [Abstract: mci] OR [Abstract: "subjective cognitive decline"] OR [Abstract: scd] OR [Abstract: "subjective cognitive impairment"] OR [Abstract: sci]] AND [[Abstract: ar] OR [Abstract: "augmented reality"] OR [Abstract: "assistive device?"] OR [Abstract: "assisted device?"] OR [Abstract: "assistive technology"] OR [Abstract: "assisted technology"] OR [Abstract: "assistive technologies"] OR [Abstract: "assisted technologies"] OR [Abstract: chatbot] OR [Abstract: "conversational agent*"] OR [Abstract: "conversational assistant?"] OR [Abstract: "digital health"] OR [Abstract: "digital intervention"] OR [Abstract: "digital health intervention"] OR [Abstract: "digital therapeutic"] OR [Abstract: "digital therapeutics"] OR [Abstract: mhealth] OR [Abstract: "mobile app"] OR [Abstract: "mobile application"] OR [Abstract: "mobile health"] OR [Abstract: "online intervention"] OR [Abstract: robot*] OR [Abstract: "voice assistant"] OR [Abstract: "virtual reality"] OR [Abstract: vr] OR [Abstract: wearable?]] AND [E-Publication Date: (01/01/2015 TO 11/30/2025)]
Cochrane n = 1241 As of 09.10.2025	((dementia? OR alzheimer? OR (mild NEXT cognitive NEXT impairment) OR MCI OR (subjective NEXT cognitive NEXT decline) OR SCD OR (subjective NEXT cognitive NEXT impairment) OR SCI)):ti,ab,kw AND (AR OR (augmented NEXT reality) OR (assistive NEXT device?) OR (assisted NEXT device?) OR (assistive NEXT technology) OR (assisted NEXT technology) OR (assistive NEXT technologies) OR (assisted NEXT technologies) OR chatbot OR (conversational NEXT agent*) OR (conversational NEXT assistant?) OR (digital NEXT health) OR (digital NEXT intervention) OR (digital NEXT health NEXT intervention) OR (digital NEXT therapeutic) OR (digital NEXT therapeutics) OR Mhealth OR (mobile NEXT app) OR (mobile NEXT application) OR (mobile NEXT health) OR (online NEXT intervention) OR robot* OR (voice NEXT assistant) OR (virtual NEXT reality) OR VR OR wearable?):ti,ab,kw. Filter: Jan 2015 – Nov 2025
Scopus n = 2256 As of 09.10.2025	(TITLE-ABS (dementia? OR alzheimer? OR "mild cognitive impairment" OR MCI OR "subjective cognitive decline" OR SCD OR "subjective cognitive impairment" OR SCI)) AND (TITLE-ABS(AR OR "augmented reality" OR "assistive device?" OR "assisted device?" OR "assistive technology" OR "assisted technology" OR "assistive technologies" OR "assisted technologies" OR chatbot OR "conversational agent*" OR "conversational assistant?" OR "digital health" OR "digital intervention" OR "digital health intervention" OR "digital therapeutic" OR "digital therapeutics" OR Mhealth OR "mobile app" OR "mobile application" OR "mobile health" OR "online intervention" OR robot* OR "voice assistant" OR "virtual reality" OR VR OR wearable?)) AND PUBYEAR > 2014 AND PUBYEAR < 2026
Pubmed n = 3411 As of 09.10.2025	(dementia?[Title/Abstract] OR alzheimer?[Title/Abstract] OR "mild cognitive impairment"[Title/Abstract] OR MCI[Title/Abstract] OR "subjective cognitive decline"[Title/Abstract] OR SCD[Title/Abstract] OR "subjective cognitive impairment"[Title/Abstract] OR SCI[Title/Abstract]) AND ("AR"[Title/Abstract] OR "augmented reality"[Title/Abstract] OR "assistive device?"[Title/Abstract] OR "assisted device?"[Title/Abstract] OR "assistive technology"[Title/Abstract] OR "assisted technology"[Title/Abstract] OR "assistive technologies"[Title/Abstract] OR "assisted technologies"[Title/Abstract] OR chatbot[Title/Abstract] OR "conversational agent*" [Title/Abstract] OR "conversational assistant?"[Title/Abstract] OR "digital health"[Title/Abstract] OR "digital intervention"[Title/Abstract] OR "digital health intervention"[Title/Abstract] OR "digital therapeutic"[Title/Abstract] OR Mhealth[Title/Abstract] OR "mobile app"[Title/Abstract] OR "mobile application"[Title/Abstract] OR "mobile health"[Title/Abstract] OR "online intervention"[Title/Abstract] OR robot*[Title/Abstract] OR "voice assistant"[Title/Abstract] OR "virtual reality"[Title/Abstract] OR "VR"[Title/Abstract] OR wearable?[Title/Abstract]) AND (2015:2026[pdat])
APA PsycInfo n = 900 As of 09.10.2025	XB (dementia? OR alzheimer? OR "mild cognitive impairment" OR MCI OR "subjective cognitive decline" OR SCD OR "subjective cognitive impairment" OR SCI) AND XB (AR OR "augmented reality" OR "assistive device?" OR "assisted device?" OR "assistive technology" OR "assisted technology" OR "assistive technologies" OR "assisted technologies" OR chatbot OR "conversational agent*" OR "conversational assistant?" OR "digital health" OR "digital intervention" OR "digital health intervention" OR "digital therapeutic" OR "digital therapeutics" OR Mhealth OR "mobile app" OR "mobile application" OR "mobile health" OR "online intervention" OR robot* OR "voice assistant" OR "virtual reality" OR VR OR wearable?). Filter: Jan 2015 – Nov 2025