

BMJ Open Occupational therapists' use of digital technologies to support people with disabilities in engaging in occupation: a scoping review protocol

Cheol Jeong ¹, Margaret Jones ¹, Clare Hocking ¹, Christian Krägeloh ²

To cite: Jeong C, Jones M, Hocking C, *et al.* Occupational therapists' use of digital technologies to support people with disabilities in engaging in occupation: a scoping review protocol. *BMJ Open* 2026;**16**:e114068. doi:10.1136/bmjopen-2025-114068

► Prepublication history for this paper is available online. To view these files, please visit the journal online (<https://doi.org/10.1136/bmjopen-2025-114068>).

Received 17 November 2025
Accepted 26 June 2026



© Author(s) (or their employer(s)) 2026. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by BMJ Group.

¹Department of Occupational Science and Therapy, Auckland University of Technology (AUT), Auckland, New Zealand

²Department of Psychology and Neuroscience, Auckland University of Technology (AUT), Auckland, New Zealand

Correspondence to

Cheol Jeong;
cheol.jeong@aut.ac.nz

ABSTRACT

Introduction Digital tools such as virtual reality, mobile applications and digital devices are being implemented across various healthcare practice settings. Engagement in occupations is central to occupational therapy, supporting health and quality of life. Occupational therapists support people with disabilities to participate in occupations by enhancing their abilities or adapting tasks and environments. However, literature rarely specifies how digital technologies are used by occupational therapists, with whom they are implemented, when and where they are delivered, what occupations are addressed or the enablers and barriers that influence the uptake of digital technologies in practice. This scoping review will map and synthesise the existing evidence on how occupational therapists use digital technologies to support people with disabilities to engage in occupations. By identifying the types of technologies used, their purposes, target populations and practice contexts, this review will inform the effective use of digital technologies by occupational therapists and their clients.

Methods and analysis This review will be conducted in accordance with the Joanna Briggs Institute methodological framework for scoping reviews and reported following the Preferred Reporting Items for Systematic Review and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines. To identify relevant evidence, we will search several electronic databases, including CINAHL Complete, MEDLINE, SPORTDiscus, Scopus, ERIC and OTseeker. Search limits will include full-text articles published in English from 2020 onwards. Title and abstract screening will be conducted independently by at least two reviewers against the inclusion and exclusion criteria followed by full-text review. Data extraction will use a structured form to capture key information such as study characteristics, types of digital technologies, country, participant information, occupation-based focus of intervention and reported outcomes. The extracted data will be analysed using both qualitative and quantitative approaches, with findings presented in tables, narrative summaries and other descriptive formats.

Ethics and dissemination Ethics approval is not required for this scoping review as it will synthesise evidence from existing literature. The review findings will be reported in peer-reviewed publications.

Trial registration number <https://osf.io/3dy9z>.

STRENGTHS AND LIMITATIONS OF THE STUDY

- ⇒ The protocol follows Joanna Briggs Institute methodology and Preferred Reporting Items for Systematic Review and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) reporting guidance, providing a robust, established framework for a high-quality scoping review.
- ⇒ This review will conduct a comprehensive search across multiple health, rehabilitation and occupational therapy databases to map the current evidence on how occupational therapists use digital technologies to support client engagement in occupations.
- ⇒ Limiting inclusion to English-language publications may omit studies conducted in other languages, thereby increasing the risk of missing relevant insights.

INTRODUCTION

Occupational therapy is a client-centred profession focused on promoting health and well-being through participation in everyday activities. Occupational therapists' primary goal is to enable people with disabilities to participate in occupations.¹ Occupation refers to the everyday activities and tasks that individuals and cultures identify, structure and assign meaning and value to. It covers everything that people do to take care of themselves (self-care), enjoy life (leisure) and participate in society and the economy (productivity).² Occupational therapists do this by developing clients' skills, adapting tasks/activities and modifying environments so that individuals can engage in the occupations they need, want or are expected to do.^{3 4} Occupational therapists have begun using digital technologies in their practice to improve client engagement in occupations.⁵

Digital technology broadly refers to electronic tools, devices and systems that operate, transmit, process and store data in binary format. This encompasses websites,

computers, smartphones, smart home systems, social media platforms, robotics and medical equipment.⁶ These technologies can be grouped into several categories based on their function and use. For example, virtual reality platforms create safe, interactive environments in which clients can practice self-care skills, household tasks, cooking, public transportation use, grocery shopping and community navigation.^{7 8} Evidence suggests that such training enhances task performance, increases motivation and self-esteem, and reduces errors. In addition, mobile applications are used to support people with disabilities by providing reminders, step-by-step instructions and tracking progress towards task completion, thus supporting organisational skills, medication management and daily routines.^{9 10} Digital devices such as computers, iPads, tablets and smartphones are employed to foster learning, communication and workplace participation. In vocational contexts, prompts delivered through video, audio or text help individuals perform multistep workplace tasks such as cleaning, stocking shelves, food preparation or customer service with greater independence.^{11 12} Furthermore, recent advances in generative artificial intelligence (AI), such as ChatGPT as an AI chatbot,¹³ offer new possibilities for adapting and personalising interventions. As such innovations become more widely accessible, digital technology is expected to play an increasingly active role in advancing health and rehabilitation, including occupational therapy, by supporting client engagement in occupations.

Although digital technologies such as virtual reality, mobile applications and other digital devices are increasingly part of professional practice and daily life, little is known about how occupational therapists globally are integrating these technologies into practice to support client engagement in occupations. A global survey by the World Federation of Occupational Therapists found that occupational therapists are mainly involved in the early stages of assistive technology provision, such as recommending appropriate devices, assessing suitability and delivering training.¹⁴ However, occupational therapists' specific role in digital assistive technology provision is unclear.⁵ Despite a large number of publications since then, this information has not been synthesised. This gap is significant, as occupational therapists across health systems worldwide are expected to develop digital competence in response to the rapid digitalisation of health-care services and to global policy imperatives for digital health integration.^{15 16} Without a clear synthesis of global evidence, it is difficult to determine how occupational therapists are responding to these expectations, and what further research, policy or professional development is needed.

This scoping review will therefore map and synthesise international evidence on how occupational therapists use digital technologies in practice to support client engagement in occupations. Following the Joanna Briggs Institute (JBI) methodology,^{17 18} this review will include diverse study designs and contexts to provide

a comprehensive picture of existing knowledge and to identify remaining gaps.

METHODS AND ANALYSIS

This scoping review will be conducted in accordance with the JBI methodological framework for scoping reviews and reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines. The protocol presented in this paper was developed prior to the start of the review and is registered with the Open Science Framework (<https://osf.io/3dy9z>). The review is scheduled to begin in November 2025, with screening and analysis expected to continue until February 2026.

Review question

The research questions were formulated based on a preliminary review of the literature and discussion among the research team. To date, no structured overview or analysis has synthesised the existing evidence on how occupational therapists use digital technologies in their practice to support client engagement in occupations. This scoping review aims to address the following question:

- How are occupational therapists internationally using digital technologies in their practice to support client engagement in occupations?

Eligibility criteria

The inclusion and exclusion criteria for this scoping review are structured according to the Population–Concept–Context framework, as recommended by the JBI methodology for scoping reviews.¹⁷

Participants

The population of interest in this review is occupational therapists whose professional roles are clearly identifiable in clinical or team settings. Participants are included in empirical studies focusing on digital technology use where an occupational therapist is involved.

Concept

The concept for this review is the use of digital technologies in occupational therapy practice. Digital technology includes electronic tools and systems that process data in binary formats (eg, computers, smartphones, smart homes, social media, robotics, medical devices), using software to perform tasks efficiently and accurately.⁶ For eligible studies, we will examine how digital technologies such as virtual reality, mobile applications or digital devices (eg, computers, tablets, wearables) are used in practice to support people's occupational performance, engagement or participation. We will include articles that focus on occupations, defined as individuals' engagement in activities such as self-care (personal and domestic tasks), education, work, play, leisure and social participation, in line with the definitions provided by the American Occupational Therapy Association.¹⁹

Context

The search will not be restricted by geography, culture or social context, allowing for the inclusion of diverse perspectives. Eligible contexts include any setting or service, such as hospitals, rehabilitation centres, outpatient services, schools, community programmes, vocational services and home environments. Studies from any country or region are eligible, provided they are written in English and available as full text, which provides information about global trends.

Types of sources

This review will include peer-reviewed empirical studies using qualitative, quantitative or mixed-methods designs, including case studies or grey literature. Including a variety of study designs aligns with the purpose of a scoping review, which is to comprehensively map the breadth and characteristics of existing evidence on a given topic. This inclusive approach enables the identification of how occupational therapists are currently using digital technologies in practice and captures emerging insights across diverse research methodologies.

Exclusion criteria

Studies will be excluded if they do not address client engagement in occupations or if they lack a defined focus on digital technologies. Studies will also be excluded if they are limited to the design, development or technical/bench testing of digital technologies. Articles describing technologies used solely by occupational therapists for administrative or professional purposes (eg, clinical documentation, data synthesis and reporting, workload monitoring or time-use tracking) will be excluded. Articles that combine conventional non-digital interventions with digital tools (eg, physical exercises delivered alongside digital components) will be excluded. Studies that focus solely on telehealth or video conferencing as a mode of service delivery rather than specific digital technology targeting client engagement in occupations will be excluded. Studies will be excluded if outcomes are not occupationally focused (eg, emotion regulation, coping, quality of life) without clear links to occupation/occupational performance. We will exclude studies conducted in settings not relevant to occupational therapy practice, theory/framework/quality-improvement papers without client engagement data and educational/training uses for tertiary students/academics. Non-English publications, non-peer-reviewed publications (eg, editorials, commentaries, conference abstracts, theses/dissertations, reports/white papers, book chapters), all review types (eg, systematic, narrative, scoping), duplicate publications, retraction notices and retracted articles, articles with a correction notice and articles without full-text availability will also be excluded. The inclusion and exclusion criteria are summarised in [table 1](#).

Search strategy

The research team collaborated with an experienced Auckland University of Technology research librarian to develop the search strategy. The aim is to capture published studies on occupational therapists' use of digital technologies in practice. We first ran a preliminary, limited search of three databases (MEDLINE, CINAHL and SPORTDiscus) to identify key descriptors, synonyms and keywords appearing in titles and abstracts relevant to our research topic. Guided by the primary research question, initial terms included "digital technology", "occupation" and "occupational therapists", with additional keywords refined from terminology encountered in the preliminary records. The final search strategy is shown in [table 2](#).

Data sources

The search strategy, incorporating all relevant keywords and index terms, will be tailored to each database and information source. A comprehensive search of online databases will be undertaken to identify peer-reviewed journal articles published in English. To ensure currency of evidence, the search will be restricted to literature published from 2020 onwards. The databases to be searched include MEDLINE, CINAHL, PsycINFO, Scopus, ERIC, SPORTDiscus and OTseeker.

Study selection

All identified articles will be imported into Covidence²⁰ and duplicates removed. Covidence will then be used to manage and support screening. To ensure clarity and consistency in applying the inclusion and exclusion criteria, a pilot test of 10% of retrieved records will be conducted during the title and abstract screening stage by at least two reviewers. In other words, the research team will independently and blindly screen a 10% sample of titles and abstracts presented alphabetically by title within Covidence. The team will discuss results and calculate inter-rater agreement, with disagreements or conflicts resolved by discussion before full screening begins. If agreement exceeds 80%, the primary researcher will proceed to screen the remaining titles and abstracts independently using Covidence, which provides rigour to the study.²¹

All potentially relevant sources will then be retrieved in full text. The same pilot process will be employed during the full-text screening stage, with the research team independently reviewing 10% of the selected full-text articles against the inclusion criteria. Reasons for exclusion of full-text articles that do not meet the criteria will be documented. Any disagreements or conflicts at either the title/abstract or full-text screening stages will be resolved through discussion or, if necessary, by consultation with an additional reviewer.

Data extraction

The data extraction form will be piloted on three included evidence sources to evaluate its reliability,

Table 1 Inclusion and exclusion criteria using the JBI's population, concept and context

	Inclusion criteria	Exclusion criteria
Population	▶ Occupational therapists, with clearly identifiable occupational therapists' roles in clinical and community settings. ▶ Participants involved in empirical studies focusing on digital technology use where an occupational therapist is involved.	▶ An occupational therapy role is not clearly identifiable in the study. ▶ Occupational therapy assistants are involved in using digital technology, but not occupational therapists.
Concept	▶ Digital technologies are used to support people's occupational performance, engagement or participation (eg, mobile and smartphone applications, wearable devices, virtual reality/augmented reality, digital games/serious games, artificial intelligence, computer-assisted systems, other digitally mediated interventions or tools). ▶ Reporting a research study. ▶ An occupational therapist is involved in intervention delivery.	▶ Telehealth. ▶ Video conferencing consultation. ▶ Design/development/validation of technologies without client use in everyday life. ▶ Technologies used solely for therapists' administrative tasks (eg, documentation, data/reporting, time-use). ▶ Educational/training uses for tertiary students/academics. ▶ Theory/framework/quality-improvement papers without client engagement data. ▶ Studies where digital technologies are not used to support people's occupational performance/engagement/participation, and/or the intention of using digital technologies is solely to address body structures and/or functions (eg, emotion regulation, coping) or broader concepts such as quality of life.
Context	▶ Digital technology is used in any practice setting (eg, hospital, school, community, rehabilitation, vocational, outpatient, home). ▶ Any country and region.	▶ Setting does not involve occupational therapy practice.
Language	▶ English.	
Types of evidence	▶ Peer-reviewed empirical studies²³ (qualitative, quantitative, mixed methods; includes case studies).	▶ Non-peer-reviewed items (editorials, conference abstracts, theses, reports, book chapters). ▶ All forms of reviews (such as systematic, narrative and scoping). ▶ Retraction notification and retracted articles. ▶ Articles with correction notices.

JBI, Joanna Briggs Institute.

Table 2 Search terms expanded to include synonyms and related terms

#	Description	Search terms
1	Digital technology	(technology OR "digital technolog*" OR "emerging technology" OR "mobile app*" OR "smartphone app*" OR "virtual reality" OR VR OR "augmented reality" OR AR OR "mobile health" OR mHealth OR eHealth OR "cognitive remediation therapy" OR CRT OR "augment* and alternat* communication" OR "AAC" OR "computer-assisted" OR "computer-based intervention*" OR "robotic assistive technology" OR "social robot*" OR "care robot*" OR "assistive technology" OR "adaptive technology" OR "wearable technolog*" OR "wearable device*" OR "smartwatch*" OR "smart home technolog*" OR "environmental control system*" OR "interactive technolog*" OR "serious game*" OR "immersive technolog*" OR "digital game-based intervention*" OR "power* wheelchair" OR "artificial intelligence" OR AI)
2	Occupation	(occupation OR occupations OR activity OR activities OR productivity OR leisure OR work OR employment OR education OR "academic participation" OR "learning activit*" OR "self-care" OR "personal care" OR "domestic tasks" OR "household management" OR "activities of daily living" OR ADL OR "instrumental activities of daily living" OR IADL OR "daily living task*" OR "community participation" OR "social participation" OR "social interaction*" OR "social engagement" OR "life skills" OR "functional task*")
3	Therapist	("occupational therap*" OR OT)

consistency and overall usability. Two reviewers will independently extract data from these studies to ensure completeness and alignment with the review objectives. Any discrepancies will be discussed and resolved collaboratively, and the form will be refined as needed. Regular meetings between the reviewers will be held throughout this stage to confirm that the form remains appropriate for the evidence being reviewed and to identify any necessary modifications. All adjustments and iterations of the extraction form will be documented in the scoping review. The extracted data are expected to include authors, year, country, aim, study type/methods, study setting, participant details, sample size, types of digital technologies used, domains of occupational therapy practice, outcomes, key results and theoretical frameworks used.

Data synthesis

This scoping review will adopt a descriptive approach rather than undertaking statistical synthesis or meta-analysis. The descriptive approach will support the identification and organisation of key concepts and patterns across the included studies. Descriptive statistics will be used to summarise study characteristics including publication year, country, study design, types of digital technology, target population, study aims, methodological approach and theoretical framework. Country will be included in the data extraction form to capture the geographical distribution of included studies. Mapping the data by country will identify geographical gaps in the evidence and provide insights into where digital technology use in occupational therapy practice is under-represented globally. Textual data on types of digital technologies used, occupational domains, outcome measures, countries and theoretical frameworks will be analysed qualitatively using content analysis.²² This involves closely reading the extracted data and applying open coding, where notes and headings are grouped into broader categories through abstraction, moving from subcategories to categories and main categories. This approach will enable the research team to identify how occupational therapists use digital technologies in practice and categorise findings related to occupations addressed, outcome measures and theoretical frameworks used. Throughout the analysis, categories will be iteratively reviewed and refined, with discrepancies resolved through team discussion and consensus. The final format of data presentation will be adapted as the review progresses.

Ethics and dissemination

Ethics approval is not required as the study involves analysis of publicly available data. Results will be disseminated through publication in a peer-reviewed

journal, conference presentations and doctoral research outputs.

Contributors CJ (Guarantor): Conceptualisation, Methodology, Software, Data curation, Writing—Original draft preparation, Funding. All other authors: Conceptualisation, Methodology, Supervision, Writing—Reviewing and Editing. I used AI as an editing tool to improve the text's tone, clarity, readability and grammar to enhance understanding.

Funding Our employer, AUT, funded the article processing charge (FHES Rolling Research Fund - REFI-21728) for this article, but had no role or influence on the content of the article. No specific grant from any other funding agency in the public, commercial or not-for-profit sectors was received.

Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Not applicable.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: <https://creativecommons.org/licenses/by-nc/4.0/>.

ORCID iDs

Cheol Jeong <https://orcid.org/0009-0008-3146-9270>
Margaret Jones <https://orcid.org/0000-0001-5110-5687>
Clare Hocking <https://orcid.org/0000-0003-0364-5157>
Christian Krägeloh <https://orcid.org/0000-0002-7298-0736>

REFERENCES

- 1 World Federation of Occupational Therapists. Definition of occupational therapy from member organisations. 2018. Available: <https://wfot.org/resources/definitions-of-occupational-therapy-from-member-organisations>
- 2 Canadian Association of Occupational Therapists. Enabling occupation: an occupational therapy perspective. Canadian Association of Occupational Therapists; 2002.
- 3 Boop C, Cahill SM, Davis C. Occupational Therapy Practice Framework: Domain and Process—Fourth Edition. *Am J Occup Ther* 2020;74:1–85.
- 4 Egan M, Restall G. Promoting occupational participation: collaborative relationship-focused occupational therapy; 10th canadian occupational therapy guidelines. Canada Association of Occupational Therapists; 2022.
- 5 Margot-Cattin I, Deblock-Bellamy A, Wassmer J, et al. World Federation of Occupational Therapists. Worldwide survey on digital assistive technology (DAT) provision. *Occup Ther Int* 2024.
- 6 Berman M. What is digital technology?: Programming Insider. 2021. Available: <https://programminginsider.com/what-is-digital-technology>
- 7 Grewal J, Eng JJ, Sakakibara BM, et al. The use of virtual reality for activities of daily living rehabilitation after brain injury: a scoping review. *Aust Occup Ther J* 2024;71:868–93.
- 8 Long Y, Ouyang R-G, Zhang J-Q. Effects of virtual reality training on occupational performance and self-efficacy of patients with stroke: a randomized controlled trial. *J Neuroeng Rehabil* 2020;17:150.
- 9 Pinard S, Bottari C, Laliberté C, et al. Design and usability evaluation of COOK, an assistive technology for meal preparation for persons with severe TBI. *Disabil Rehabil Assist Technol* 2021;16:687–701.
- 10 Stierle J, Ryan JB, Katsiyannis A, et al. Using smart phone technology to improve daily living skills for individuals with intellectual disabilities. *J Appl Res Intellect Disabil* 2023;36:1169–78.
- 11 Muharib R, Ledbetter-Cho K, Bross LA, et al. Handheld Technology to Support Vocational Skills of Individuals with Intellectual and Developmental Disabilities in Authentic Settings: a systematic review. *Rev J Autism Dev Disord* 2022;9:108–19.
- 12 Van Laarhoven T, Carreon A, Bonneau W, et al. Comparing mobile technologies for teaching vocational skills to individuals with autism spectrum disorders and/or intellectual disabilities using universally-designed prompting systems. *J Autism Dev Disord* 2018;48:2516–29.

- 13 Lee P, Bubeck S, Petro J. Benefits, limits, and risks of GPT-4 as an AI Chatbot for medicine. *N Engl J Med* 2023;388:1233–9.
- 14 Wallcook S, Gaber S, Alvarez L, *et al.* Report from the world federation of occupational therapists' (WFOT) global survey of current assistive technology use. 2018.
- 15 World Federation of Occupational Therapists. Position statement: occupational therapy and assistive technology. 2019. Available: <https://wfot.org/resources/occupational-therapy-and-assistive-technology>
- 16 World Health Organization. Global strategy on digital health 2020–2025. 2020. Available: <https://www.who.int/publications/i/item/9789240020924>
- 17 Peters MDJ, Godfrey C, McInerney P, *et al.* Best practice guidance and reporting items for the development of scoping review protocols. *JBI Evid Synth* 2022;20:953–68.
- 18 Pollock D, Peters MDJ, Khalil H, *et al.* Recommendations for the extraction, analysis, and presentation of results in scoping reviews. *JBI Evid Synth* 2023;21:520–32.
- 19 American Occupational Therapy Association. Occupational therapy practice framework: Domain and Process. *American Journal of Occupational Therapy* 2020;74:1–87.
- 20 Covidence. Covidence systematic review software. Available: <https://www.covidence.org>
- 21 Shea BJ, Reeves BC, Wells G, *et al.* AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. *BMJ* 2017;358:j4008.
- 22 Elo S, Kyngäs H. The qualitative content analysis process. *J Adv Nurs* 2008;62:107–15.
- 23 EBSCO Research Starters. Empirical research. n.d. Available: <https://www.ebsco.com/research-starters/social-sciences-and-humanities/empirical-research>