Research Space
Journal article

Uptake of, attitudes to and experiences of robotic assistive
technology in health professionals, parents and carers of
children and young adults with neurodisabilities: a protocol for a
systematic review

Smith, R., Apps, J. and Hatzidimitriadou, E.

Citation

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Review question

1. How is robotic assistive technology perceived to be improving the physical health of children and young adults with cerebral palsy and other neurological conditions.

2. How does robotic assistive technology impact on the quality of life for children and young adults?

3. What are the barriers and facilitators to the uptake of assistive robotic technology for health professionals, parents and carers of children and young adults?

Searches

The seven electronic databases to be searched are: MEDLINE; PsycINFO; Social Policy and Practice (SPP); Social Science Citation Index (SSCI); the Cumulative Index to Nursing and Allied Health Literature (CINAHL); SPORTDiscus; and Maternity and Infant Care (MIDIRIS). Grey literature sources will be searched for any addition articles. We will hand search three journals in an attempt to identify relevant publications missed during the electronic researches. These will be OpenGrey, Social Care Online and OpenAIRE. Reference list searching of relevant literature reviews found during the electronic searches and the final included articles will be conducted. Experts in the field of research will also be contacted to identify other potentially relevant articles missed from the electronic searches.

Only studies published in English will be eligible for inclusion and there will be no date restrictions.

Search strategy

https://www.crd.york.ac.uk/PROSPEROFILES/243775_STRATEGY_20210319.pdf

Types of study to be included

Quantitative, qualitative and mixed methods research.

Condition or domain being studied

Assistive technologies for children and young adults with neurodisabilities.

Participants/population

Inclusion: Children and young adults (up to 25 years old) with cerebral palsy and other neurological conditions.

Exclusion: Adults aged 26 years old and above. Children and adults with learning disabilities.

Intervention(s), exposure(s)

Novel robotic assistive technologies are being developed to assist children and young adults with cerebral palsy and other neurological conditions. However, the experiences and attitudes of health professionals, carers and those utilising these new technologies is unclear. Further, the available literature into these experiences remains poorly synthesised and understood. Therefore, this systematic review will bring together these experiences to enable a clear understanding of the perceived impact on the physical health and quality of life of children and young adults utilising these new technologies, and explore the barriers and

facilitators to assistive technology uptake.

Comparator(s)/control
Not applicable

Main outcome(s)

The primary outcome of this systematic review is to understand the attitudes and experiences of robotic assistive technology in health professionals, parents and carers of children and young adults with neurodisabilities.

Additional outcome(s)

Additional outcomes are:

1: To understand and explore how robotic assistive technology is perceived to be improving the physical health of children and young adults with cerebral palsy and other neurological conditions.

2: To explore how robotic assistive technology impact on the quality of life for children and young adults.

3: To establish the barriers and facilitators to the uptake of assistive robotic technology for health professionals, parents and carers of children and young adults.

Data extraction (selection and coding)
1. Duplicate citations
The results of the literature searches will be transferred into Excel where article duplicates will be removed. Multiple publications from the same study population identified during full-text review will be assessed for data duplication and excluded if appropriate.

2. Title and abstract screening
A minimum of two reviewers will independently screen all identified titles and abstracts. Any discrepancies will be resolved by discussion or the intervention of a third reviewer. Copies of articles that appear to meet the inclusion criteria based on the title and abstract screening will be obtained for full-text review. Articles where it cannot be determined from the title and abstract whether it is relevant will also be obtained in full-text to determine eligibility.
3. Full text screening and selection for inclusion

Full text articles of relevant titles/abstracts will be independently scrutinised by at least two members of the review team. Reasons for exclusion will be recorded. Where there is uncertainty about inclusion, consensus will be achieved by discussion or the involvement of a third reviewer. A PRISMA flow diagram will be used to report the number of records identified, full-texts retrieved and included, excluded and the reasons for full-text exclusions. At this stage of the screening process, one member of the review team will scan the reference lists of the included studies and appropriate reviews for relevant references that were not identified from the database searches.

4. Data to be extracted

Data extraction for quantitative studies will include author details, year of publication and publication type, participant demographics, sample size, results, key findings related to the experiences of assistive technologies and the authors' conclusions. Data extracted for qualitative studies will be the same for those

included for quantitative studies but will also include the main themes identified by the study authors.

Risk of bias (quality) assessment

The quality of included studies will be assessed independently by at least two members of the review team using the QualSyst review tool. This tool was selected because it permits scoring for both qualitative and quantitative studies. Any differences in ratings will be identified and consensus achieved through discussion amongst the team members. Although no studies will be excluded based on quality scores, quality assessment will allow for interrogation of the methodological quality of included studies.

Strategy for data synthesis

Data will be synthesised using a narrative approach. Given the broad research questions and varied study types expected, narrative synthesis is an appropriate choice. The review is not investigating the effect of interventions and therefore meta-analysis of quantitative studies is unlikely to be suitable. Data will be entered into standardised tables which will include the main findings from each included study.

For qualitative studies, review authors will independently read, identify and record themes related the experiences and attitudes of those using and providing assistive robotic technologies. Review authors will also document quantitative data relevant to the research questions. Relationships in the data and between groups of studies will then be explored pertaining to the research questions, for example, whether some health professionals experience additional barriers to the uptake of assistive technology in children and young adults with cerebral palsy and other neurological conditions than others (e.g. physiotherapists versus occupational therapists).

Analysis of subgroups or subsets

Not applicable.

Contact details for further information

Raymond Smith
Raymond.Smith@canterbury.ac.uk

Organisational affiliation of the review

Canterbury Christ Church University

Review team members and their organisational affiliations

Dr Raymond Smith. Canterbury Christ Church University
Ms Joanna Apps. Canterbury Christ Church University
Professor Eleni Hatzidimitriadou. Canterbury Christ Church University

Type and method of review

Narrative synthesis, Systematic review

Anticipated or actual start date

22 February 2021

Anticipated completion date

30 July 2021

Funding sources/sponsors

Interreg 2Seas Programme

Conflicts of interest

Language

English

Country
England

Stage of review
Review Ongoing

Subject index terms status
Subject indexing assigned by CRD

Subject index terms
Attitude; Caregivers; Child; Disabled Persons; Health Personnel; Humans; Parents; Robotic Surgical Procedures; Self-Help Devices; Young Adult

Date of registration in PROSPERO
16 April 2021

Date of first submission
14 April 2021

Stage of review at time of this submission

Stage	Started	Completed
Preliminary searches	Yes	No
Piloting of the study selection process	No	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Revision note
Formatting errors corrected for the PDF version.

The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.

The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Versions
16 April 2021
19 April 2021
30 April 2021