

Citation

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Review question

What is the effectiveness of telehealth versus standard care on healthcare utilization, health-related quality of life and wellbeing in homebound populations?

Searches

The search strategy, including all identified keywords and index terms, will be adapted for the bibliographic databases Embase (Ovid), PsycINFO (Ovid), CINAHL (EBSCO), Cochrane Central Register of Controlled Trials (CENTRAL), Cochrane Database of Systematic Reviews, JBI Evidence Synthesis (Ovid), Scopus (Elsevier) LILACS (BVS Portal) and Web of Science (Clarivate Analytics). The reference lists of all studies selected for critical appraisal will be screened for additional studies. Articles published in any language will be included, with no date limit.

Types of study to be included

This review will consider experimental and quasi-experimental study designs, including randomized controlled trials, non-randomized controlled trials, before and after studies, and interrupted time-series studies. It won't include grey literature or qualitative investigation in the field. The focus on quantitative research has been seen as beneficial for influencing policymaking.

Condition or domain being studied

The investigation focuses on a unique and under-investigated cohort of people, the homebound, who are confined to living within the physical boundaries of their house. Our protocol adopts a robust and comprehensive conceptualization of the homebound, recognising them as a distinct and circumscribed population, unified by their homebound circumstances, despite having different ages, health conditions and sociodemographic characteristics.

This protocol, co-designed by a transdisciplinary group of experts (including a homebound consumer and community representative), introduces a study that will systematically synthesize knowledge not previously explored. It relates to telehealth, healthcare utilization and quality of life in all types of homebound populations.

Participants/population

This review will consider studies that include homebound persons as people whose daily life is physically limited to the boundary of their homes. Our conceptualisation recognizes them as members of a circumscribed population category who indistinctly of their age or health conditions are unable to leave their homes.

Homebound people are distinguished from those with physical, mental and/or functional impairments provisionally at home because of a temporary accident/illness. The latter can receive regular care, and some can often leave their homes despite experiencing chronic conditions, movement, or energy and/or functional impairments. Therefore, they are not included in this review.

Intervention(s), exposure(s)

This review will consider studies that evaluate telehealth understood as those that use technologies like telephone services and digital technologies or platforms - computers (i.e., website, apps, email), or DVD-based interventions, mobiles phones, tablets, wearables devices for providing health advice or enabling

remote delivery of healthcare and wellbeing services.

Comparator(s)/control

This review will consider standard care as a comparator (i.e., in-person health advice and health care delivery to homebound people via face-to-face/physical attendance). This comparator excludes services that are not considered standard practice for homebound people, such as using different technologies to enable remote healthcare and well-being services.

Context

Globally, an increasing number of people have functional impairments, including multiple chronic conditions that prevent them from leaving their homes. These populations experience high levels of social isolation and wellbeing deterioration. Reports from homebound consumers, recent publications related to lockdowns and restrictions due to the COVID-19 pandemic suggest that people whose boundary of daily life is limited to home may benefit from accessing telehealth solutions to treat and prevent serious issues affecting their health care utilization, health-related quality of life and wellbeing. Therefore, this systematic review will examine the effectiveness of telehealth when comparing it to standard care on health care utilization, health-related quality of life and wellbeing in homebound populations.

Main outcome(s)

Healthcare utilization, when measured as the discretionary or nondiscretionary use of a healthcare service, procedure, device, or pharmaceutical drug to maintain one's health and wellbeing, preventing and/or treating health problems, or obtaining information about one's health status and prognosis, considering direct costs -associated with diagnosis, treatment, prevention, and management- and indirect costs, as foregone opportunities, resources related to health conditions, including lost productivity, disability, and premature mortality. Quantitative measures include time points investigations, engagement of the target group, sustained participation, benefits of participation, behaviour change and health outcomes.

Health and wellbeing factors are understood to be a comprehensive status of physical, mental, and social wellbeing and not merely the absence of disease or infirmity (17). Therefore, outcomes will be comprised when measuring Health-related quality of life (HRQOL), identified through generic measurable definitions like QOL (a wide-ranging multidimensional concept typically compressing subjective evaluations of both positive and negative aspects of life) or HRQOL (incorporating those aspects of overall quality of life that affect health—either physical or mental) (18). Such generic measures and similar tools will be chosen because they are widely used and validated across different cultures, conditions, and ages (e.g., SF-36, EQ-5D, WHOQOL-BREF and Kidscreen, CHQ, and PedsQL for children).

Measures of effect

All studies that quantify the effectiveness of telehealth concerning these outcomes via comparable quantitative tools will be included for assessment. For their continuous outcomes, the results of included studies will be summarised as standardized mean / weighted mean difference or mean difference with a 95% confidence interval as reported. For dichotomous outcomes, results will be summarised as risk ratio or odds ratio with a 95% CI as necessary.

Additional outcome(s)

Not applicable

Data extraction (selection and coding)

Data will be extracted from studies and included in the review by two independent reviewers using the standardized JBI data extraction tool. The data extracted will include specific details about the homebound populations, study methods, measurement tools, program interventions, and outcomes of significance concerning healthcare utilization, health-related quality of life and wellbeing. Any disagreements that arise between the reviewers will be resolved through discussion or with a third reviewer. Authors of papers will be contacted to request missing or additional data, where required.

Risk of bias (quality) assessment

The Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach for grading the certainty of evidence will be followed, and a Summary of Findings will be created using GRADEpro GDT (McMaster University, ON, Canada). The Summary of Findings will present the following

information where appropriate: absolute risks for Intervention (telehealth) vs standard care, estimates of relative risk, and a ranking of the quality of the evidence based on the risk of bias, directness, heterogeneity, precision, and risk of publication bias of the review results. The outcomes reported in the Summary of Findings will be healthcare utilization, health-related quality of life and wellbeing in homebound populations.

Strategy for data synthesis

Studies will, where possible, be pooled with statistical meta-analysis using JBI SUMARI. The effect size will be expressed as either odds ratios (for dichotomous data) or weighted (or standardized) final post-intervention means differences (for continuous data), and their 95% confidence intervals will be calculated for analysis. Heterogeneity among studies will be assessed statistically using the standard τ^2 and I^2 tests. Statistical analyses will be performed using a random-effects model.

Analysis of subgroups or subsets

Subgroup analyses will be conducted where there are sufficient data to investigate thematic areas of interest. Sensitivity analyses will be conducted to test decisions regarding the intervention's effectiveness on the study outcome/s. Where statistical pooling is not possible, the findings will be presented in the narrative form, including tables and figures to aid in data presentation, where appropriate.

A funnel plot will be generated using RevMan to assess publication bias if ten or more studies are included in a meta-analysis. Where appropriate, statistical tests for funnel plot asymmetry (Egger test, Begg test, Harbord test) will be performed.

Contact details for further information

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Type and method of review

Systematic review

Anticipated or actual start date

01 December 2021

Anticipated completion date

31 March 2022

Funding sources/sponsors

Flinders University, Caring Futures Institute (Cardiac Focus Area Research Grant, 2021).

Conflicts of interest

Language

English

Country

Australia

Stage of review

Review Ongoing

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

Aged; Homebound Persons; Humans; Quality of Life; Reference Standards; Telemedicine

Date of registration in PROSPERO

05 November 2021

Date of first submission

05 November 2021

Stage of review at time of this submission

The review has not started

Stage	Started	Completed
Preliminary searches	No	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

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

05 November 2021