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Maintaining physical activity through the use of digital tools for people with a long-term condition/s (LTCs): A scoping review.

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Abstract

Background

Physical activity (PA) is important for both the prevention and management of long-term conditions (1). Previous research has identified a beneficial impact of PA on pain, function and overall health (2, 3, 4). However, levels of PA are often lower in people with a long-term condition (LTC) and decline further for those with multiple conditions (5, 6). Digital tools, such as websites, apps or wearables, show some potential for supporting engagement with PA in the short term (7, 8), but lack data on maintaining PA behaviours longer term. A search of existing reviews in this area identified only a small number of systematic reviews that included digital interventions with a focus on maintaining PA for people with a LTC (9, 10, 11). Of these, only Grimmett et al (2019) reported effective maintenance at >3 months post-intervention (9). Consequently, a scoping review methodology has been chosen to explore digital PA maintenance for people with a LTC more widely.

The aims of this review are to:

- Identify the range and variety of digital tools and their associated theoretical foundations for supporting people with a LTC/s to maintain physical activity.
- Uncover the components considered to be necessary for engagement with digital tools to support maintenance of physical activity

Review objectives:

1. What is the “extent (size), range (variety) and nature (characteristics) of the evidence” (12) on digital tools to support the maintenance of physical activity for people with a LTC/s?
2. What theoretical underpinnings are used in digital tools to promote the maintenance of physical activity?
3. What are the experiences of people using digital tools to maintain physical activity?
4. What are the barriers and facilitators to maintaining physical activity for people with a LTC/s using digital tools?

Design

This scoping review will be undertaken in accordance with PRISMA-ScR guidelines (12) and the frameworks developed by Arksey and O’Malley (13) and Levac et al., (14). Preliminary searches will be undertaken in consultation with an academic librarian to create a comprehensive search strategy. Screening of titles and abstracts will be undertaken by two independent reviewers, with conflicts resolved by an independent verifier, using Covidence software (15). Full-text screening will subsequently be undertaken following this same approach. A charting form will be developed based on the objectives of the review and refined by the research team. Data will be collated and summarised, with quantitative sources described descriptively and qualitative data analysed thematically (16). Results will be presented using summary tables and/or using pictorial/flow charts, if appropriate.

Attachments

PDF

PhysActiv_Digital_Sc...

289KB

1 **Protocol and registration**

The protocol for this scoping review is publicly available from protocols.io.

2 **Eligibility criteria**

All studies types will be included, from 2009 - 2019

Long-term conditions include; cardiovascular disease, myocardial infarction, stroke/TIA, Asthma, COPD, chronic kidney disease, diabetes mellitus, dementia, mental health, depression, osteoporosis, rheumatoid arthritis, osteoarthritis and obesity. Studies that use the terms 'long-term condition', chronic or multimorbidity will also be included as long as one or more of the above conditions is included. Cancer and low back pain will be excluded due to recently published reviews in this area.

Physical activity – Studies with adults who are not maintaining 150 minutes of moderate to vigorous physical activity per week will be included.

Maintenance – Follow-up at least 3-months post the end of the intervention.

Digital tools – Defined in accordance with the World Health Organisation classification of digital health interventions v1.0 (17).

Information sources

Databases for searching includeCINAHL, Medline, OVID EMBASE, IEEE Xplore, PsycINFO, Scopus, Google Scholar and trial registries - PROSPERO, ISRCTN, ICTRP (WHO), EU clinical trials register, Clinicaltrials.gov for all relevant studies between 2009 – 2019.

3 **Search strategy**

Preliminary searches and consultation with an academic librarian will be undertaken to establish a comprehensive list of search terms and search strategy. Reference lists of eligible studies will also be searched to identify additional studies to identify additional studies that may have been missed in the original searches.

4 **Selection of sources of evidence**

Five percent of titles and abstracts will be assessed by two independent reviewers to confirm the eligibility criteria. Screening of titles/abstracts will be divided amongst the review team using the Covidence software (15), with each title/abstract reviewed by two independent reviewers. Conflicts will be decided by an independent verifier.Full-text screening will follow, using the same procedure.

5 **Data charting process**

Data will be charted into a Microsoft Excel form, based on the objectives of the review. The charting form will be available on an online portal allowing the team to see each other's contribution and discuss any concerns.

6 **Data items**

Extracted data will be based on the objectives of the review, including the type and contents of the digital tool, theoretical underpinning, experience of users and barriers/facilitators to use.Effectiveness data will also be extracted from the studies, which alongside theoretical underpinnings, may support a more focused future review.

7 **Synthesis of results**

Quantitative data will be collated and synthesised descriptively. Thematic analysis will be used to synthesis qualitative data, using the staged approach by Braun and Clarke (16). Collation and synthesis of findings will be undertaken by members of the research team based on experience with quantitative and qualitative analysis.

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