Older adults' physical function assessment digitization: usability and clinical value–rapid review
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Purpose With the global aging population, the prevalence of chronic illness, frailty, and functional decline is rising (1), increasing the need for accurate and efficient assessment tools. Traditional assessments, such as gait analysis, Timed Up-and-Go (TUG), and Sit-to-Stand (STS) tests, provide valuable information regarding the physical function among older adults (2, 3). Additionally, with the use of digital technology, benefits may arise from generating measurable, real-time data for intervention and monitoring (4). Mobile applications represent an emerging, technology-based approach to expand healthcare professionals (HCPs) assessment toolkit, offering objective, accessible, and data driven insights into older adults' mobility and functional status (4). This rapid review aims to identify and evaluate mobile applications available in Canada that assess physical function in older adults, focusing on their usability, functionality, and potential clinical value. **Method** Utilizing the PRISMA guidelines, a rapid evidence review was conducted including a systematic search (MEDLINE, CINAHL) and a Canadian app store search (Apple iOS, Google Play) from April to August of 2025. Inclusion criteria targeted apps assessing physical function, in English, providing measurable assessment outcomes, and stand alone with minimum user ratings of 4.0 on a 5.0 scale. Apps were evaluated using the Mobile App Rating Scale (MARS) for engagement, functionality, aesthetics, and information quality (5). Data on intended users, technologies, interventions, and associated studies were extracted. Screening and extraction were conducted by a single reviewer due to the time constraints that exist with rapid review studies. **Results and Discussion** Thirteen apps met inclusion criteria, primarily targeting clinicians or both clinicians and patients' usability. Technologies included Artificial Intelligence (AI), machine learning, motion capture, biomechanics algorithms, and image processing. MARS scores ranged from 2.78 to 4.73; top-rated apps included Ochy, LINDERA Mobility Analysis, and Kinetisense 360. Often, apps offered interventions alongside the assessment, while few had supporting studies and none had randomized controlled trials. Mobile apps may complement traditional assessments, enable patient generated health data (PGHD) integration, and facilitate proactive, remote, and coordinated care (4). Further, through utilizing such technologies, a broader test battery may be formed where HCPs can implement within their practice. Clinicians may incorporate mobile assessment apps based on alignment with standard functional tests, usability for older adults, and availability of objective metrics. Additionally, practical use cases including smartphone-based gait and mobility monitoring to support early identification of functional decline may be incorporated within practice (4). While limited validation currently constrains generalizability, these digital tools have substantial potential to enhance preventive care, improve functional outcomes, and foster personalized approaches to healthy aging (4). Future research should focus on validation studies, multi-reviewer assessments, and evaluation of their impact on health outcomes and healthcare utilization.

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