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Conference abstract

A systematic review of the effectiveness of mobile health interventions for the management of diabetes

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Abstract

Introduction: A new development in the field of telehealth is the use of mobile technologies to assist patients in the recording, tracking and analysis of medical information. Mobile devices appear particularly advantageous for conditions that require intense and ongoing monitoring such as diabetes. The evidence base for their effectiveness in helping patients manage their condition remains weak. This systematic review aims to synthesize, describe and evaluate the evidence for the effectiveness of these interventions in diabetes management. The primary outcome investigated is haemoglobin glycated (HbA_{1c}). Attention is also given to secondary outcomes of a psychological nature.

Methods: A comprehensive search strategy was developed and applied to eight electronic databases to identify studies investigating the clinical effectiveness of mobile-based applications allowing patients to record and send their blood glucose readings to a central server. The eligibility of 5072 papers was assessed against selection criteria. All studies reviewed were quality assessed using a standardised quality assessment tool.

Results and conclusions: Twenty studies were found to fit the selection criteria. Results for patients with type 1 and type 2 diabetes were examined separately. Studies on type 1 diabetes were divided into two according to whether the interventions focused specifically on dietary management or not. Studies were characterised by methodological weaknesses and poor reporting that made comparisons difficult. Evidence on the effectiveness mobile phone interventions for both types of diabetes was inconsistent. Findings on secondary outcomes, patient satisfaction, acceptability, self-care, self-efficacy, adherence, and quality of life were also inconclusive. This was partly due to the small number of studies examining them. Implications for future research will be discussed.

Keywords

mhealth, diabetes, remote monitoring, review