

The Impact of Mobile Monitoring Technologies on Glycosylated Hemoglobin in Diabetes: A Systematic Review

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Abstract

Background:

A new development in the field of telehealth is the use of mobile health technologies (mhealth) to help patients record and track medical information. Mhealth appears particularly advantageous for conditions that require intense and ongoing monitoring, such as diabetes, and where people are of working age and not disabled. This review aims to evaluate the evidence for the effectiveness of mhealth interventions in diabetes management on glycosylated hemoglobin.

Method:

A comprehensive search strategy was developed and applied to eight electronic databases to identify studies that investigated the clinical effectiveness of mobile-based applications that allowed patients to record and send their blood glucose readings to a central server. The eligibility of 8543 papers was assessed against the selection criteria, and 24 papers were reviewed. All studies reviewed were assessed for quality using a standardized quality assessment tool.

Results:

Results for patients with type 1 and type 2 diabetes were examined separately. Study variability and poor reporting made comparison difficult, and most studies had important methodological weaknesses. Evidence on the effectiveness of mhealth interventions for diabetes was inconsistent for both types of diabetes and remains weak.

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Abbreviations: (BG) blood glucose, (CHO) carbohydrate, (HbA1c) glycosylated hemoglobin, (HCP) health care professional, (RCT) randomized controlled trial, (SMBG) self-monitoring of blood glucose

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