Mobile-Based Telemedicine as a Milestone for Lifestyle Monitoring Non-Alcoholic Fatty Liver Disease Patients: A Systematic Review and Meta-Analysis

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Introduction

NAFLD is the most common liver disease worldwide which can progress to fibrosis, cirrhosis, liver failure, hepatocellular carcinoma, and death. Currently, there is no therapeutic treatment and non-adherence to lifestyle modifications still possess problems. Diet and exercise are the main treatment for patients with NAFLD. Mobile-based telemedicine provides a powerful approach to dealing with behavioral changes.

Objective

The study aims to assess the efficacy of mobile-based telemedicine in improving liver function and body weight among NAFLD patients.

Method

The literature search was performed using PubMed, Plos One, Proquest, EBSCO Essentials, Wiley, and Cochrane using the keyword: Non-alcoholic fatty liver disease, smartphone, and telemedicine. The data was screened based on inclusion and exclusion criteria. Risk of bias assessment was done using ROB 2.0 tool. Meta-analysis was done using Review Manager 4.1 to measure the mean difference of AST, ALT, and weight improvement.

Result

Five randomized controlled trials with a 513 total number of participants were included. Overall study considered as low risk of bias. The meta-analysis showed AST, ALT and weight improvement with MD -9.68 (random effect; 95 % CI -16.48 to -2.88; P = 0.005), MD -19.72 (random effect; 95 % CI -32.26 to -7.18; P = 0.002), and MD -2.34 (fixed effect; 95% CI -3.52 to -1.15; P = 0.0001) respectively.

Conclusion

Mobile-based telemedicine has been proved to significantly improve liver function by reducing AST and ALT levels and body weight in NAFLD patients.

Key Words

AST, ALT, NAFLD, telemedicine, weight

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