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Mobile application for glyceemic control of diabetes patients: A systematic review

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Objective: To evaluate the effectiveness of mobile application versus usual care in glyceemic control of diabetes patients.

Method: The PubMed, Embase, CENTRAL, CBM, CNKI, VIP and Wanfang databases were searched for collecting relevant Randomized Controlled Trails (RCTs) from the date of their establishment to August 2017. After quality evaluation and data extraction by two reviewers independently, the meta-analysis was conducted by using the RevMan 5.3 software.

Result: A total of 26 RCTs involving 2602 patients were included. Meta-analysis indicated that compared with usual care, mobile application reduces hemoglobin A1c (MD=-0.43, 95% CI: -0.57 to -0.29, P<0.00001) and fasting blood glucose (MD=-0.60, 95% CI: -0.87 to -0.33, P<0.0001). In the subgroup analysis, mobile application was associated with lower hemoglobin A1c in the 3th month (MD=-0.38, 95% CI: -0.53 to -0.23, P<0.00001), the 6th month (MD=-0.39, 95% CI: -0.57 to -0.21, P<0.0001) and the 9th month (MD=-0.52, 95% CI: -0.76 to -0.28, P<0.0001), but there were no significant differences in the 1.5th month (MD=-0.08, 95% CI: -0.26 to 0.10, P=0.38) and the 12th month (MD=-0.54, 95% CI: -1.13 to 0.06, P=0.08).

Conclusion: Current evidence shows that mobile application is superior to usual care. However, restricted by quantity and quality of the studies, further robust studies are required to confirm this conclusion.

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