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| **Smartphone applications for tobacco cessation: a systematic review and meta-analyses** |
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| **Introduction/Aim:** Smartphone apps hold potential for increasing the effectiveness of tobacco quit attempts, yet there is limited evidence to support the numerous smoking cessation apps that are available. We conducted a systematic review with meta-analyses of Randomised Controlled Trials (RCTs) of tobacco cessation apps among people aged 15 and over who used tobacco.**Methods:** A comprehensive search of seven databases was completed in June 2022 and updated in July 2023. The primary outcome was sustained tobacco abstinence, self-reported and/or biochemically validated, of at least 6 months. Random effects meta-analysis was conducted for subsets of RCTs with different control conditions. Cochrane Risk of bias assessment and GRADE assessment of the certainty of evidence was completed.**Results:** From 2,226 studies, 45 RCTs met inclusion criteria. There was substantial heterogeneity between studies and outcome measures. Four random effects meta-analyses were completed: 1) compared to minimal interventions, such as usual care or a brochure, there was no evidence that apps are effective (8 RCTs, 5,424 participants; RR=0.93, 95% CI 0.79-1.09, *p*=0.4158); 2) compared to a control (minimal function) app, there was low certainty evidence of an overall benefit of full functionality apps (8 RCTs, 10,235 participants; RR=1.33, 95% CI 1.01-1.74, *p*=0.0411); 3) there was no evidence that apps provide incremental benefit when added to other behavioural support (2 RCTs, 144 participants; RR=0.99, 95% CI 0.59-1.67, *p*=0.9695); 4) there was moderate certainty evidence of an incremental benefit of adding an app to pharmacotherapy (5 RCTS, 1798 participants; RR=1.28, 95% CI 1.12-1.47, *p*<0.001).**Conclusion:** There is emerging evidence that smartphone apps may provide an additional benefit alongside pharmacotherapy for tobacco cessation and that apps with greater functionality are more effective than basic apps, but the evidence does not currently support apps compared to minimal tobacco cessation interventions or as an adjunct to counselling support**Grant Support:** HM and GC are supported by NHMRC fellowships. CG receives funding from NHMRC grant GNT1198301 and is supported by an ARC Future Fellowship. The World Health Organization provided funding support to subsidise the review. |