

A53**Estimating effectiveness of components of a smartphone app- Drink Less—to reduce excessive alcohol consumption: a factorial randomised control trial**

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Background: Smartphone apps have the potential to help drinkers reduce hazardous and harmful alcohol consumption. However, there have been few evaluations of the effectiveness of these apps and none to our knowledge that estimates the effects of individual intervention components. This study aimed to evaluate the effectiveness of intervention components of an alcohol reduction app, Drink Less.

Materials and methods: Drink Less is a freely available app to any individual in the UK making an attempt to reduce their drinking. The app was structured around goal setting with information on the UK drinking guidelines, units and alcohol-related harms. The app offered access to five additional intervention modules—Normative Feedback, Cognitive Bias Re-training, Self-monitoring and Feedback, Action Planning and Identity Change—to help them achieve their goal. Excessive drinkers (AUDIT ≥ 8) who were aged 18+ were orthogonally randomised to receive 'enhanced' or 'minimal' versions of each of the five modules (to a total of 25 experimental conditions). The primary outcome measure was change in past week consumption at one-month follow-up. Secondary measures were change in AUDIT score, usage data and usability ratings. A factorial between-subjects ANOVA assessed main and interactive effects of the app modules using an intention-to-treat analysis.

Results: Of 672 study participants, 27% responded to follow-up. At baseline, the mean past week consumption was 39.9 units (SD = 27.34) and mean AUDIT score was 19.1 (SD = 6.56). There were no significant main effects of the intervention modules on either measure. There were two-way interactions between enhanced Self-monitoring and Feedback and Action Planning on AUDIT score ($F = 5.818, p = 0.016$) and between enhanced Normative Feedback and Cognitive Bias Re-training on past week consumption ($F = 4.676, p = 0.031$). Enhanced Self-monitoring and Feedback was used more often and rated more positively for helpfulness, satisfaction and recommendation than the minimal version.

Conclusions: Individual enhanced modules were not more effective compared with their minimal condition. The combinations of Self-monitoring and Feedback with Action Planning, and Normative Feedback with Cognitive Bias Re-training resulted in significant reductions in alcohol-related outcomes when both modules were enhanced. Users rated the Self-monitoring and Feedback module significantly more positively when it was enhanced.