Smartphone applications can help in treatment for alcoholism

Gerhard Andersson

Department of Behavioural Sciences and Learning, Linköping University, Linköping, Sweden and Department of Clinical Neuroscience, Karolinska Institute, Stockholm, Sweden; gerhard.andersson@liu.se

WHAT IS ALREADY KNOWN ON THIS TOPIC?
Cost-effective continued care for persons with alcohol use disorders is needed, but it can be problematic due to limited resources. During the past 20 years there has been a rapid development of computised interventions within healthcare; in particular, internet-delivered treatments have been tested in a large number of controlled trials for various disorders. Recent studies suggest smartphone applications can be effective, although relatively few studies have been undertaken to date.

WHAT DOES THIS PAPER ADD?
▸ The study stands out as being clearly based on a theory—the self-determination theory—which informed the development of the intervention. Briefly the theory puts forward that three needs contribute to adaptive function: perceived competence, feeling related to others, and feeling internally motivated and not forced to change behaviour.
▸ The study shows that the intervention led to fewer risky drinking days compared to the control group and a higher likelihood of continued abstinence. Even in the case of small effects this can be of significance in terms of reduced costs for alcohol-use disorders as long as the treatment is not too costly. In addition the study showed that one of the proposed change mechanisms based on theory (motivation) was a significant mediator of change.

LIMITATIONS
▸ The active treatment group received a smartphone, whereas the control group did not. Thus the specificity of the program is less clear than if all patients had received smartphones (in other words it may have been beneficial just to receive a smartphone).
▸ It is unclear how experienced the participants were with regards to previous computer and smartphone use. More experienced smartphone users may be less interested in new applications.
▸ The role of system failure (116 smartphones were replaced during the trial), which by necessity involves more contact with the researchers, could have been analysed as a moderator.

▸ Given that motivation turned out to be a mediator, it would be interesting to know more about the 18 patients who declined participation, and whether the high percentage of uptake (349 of 380 approached) would replicate in other settings (eg, in populations with greater smartphone use in the general population).

WHAT NEXT IN RESEARCH?
▸ The use of smartphones should be tested in more areas, such as depression, and the promising results of this trial need to be replicated. Given the longstanding nature of alcohol use disorders, longer term follow-ups are needed (more than 1 year). Further, the specificity of the intervention needs to be explored by comparing against another smartphone application (eg, a mindfulness application) which would show that it is the treatment ingredients that are responsible for change.

COULD THESE RESULTS CHANGE YOUR PRACTICES AND WHY?
Yes, they can. Given the level of suffering caused by alcohol use disorders, clinicians should consider using modern information technology in their clinical practice, possibly combined with regular face-to-face services. As treated alcoholism can run the risk of relapsing following treatment novel approaches like the one in the study can be a way to stay in touch with the patients in order to prevent relapse. However, new interventions need to be evidence-based, and a vast majority of the available applications have not been tested in rigorous research.

Competing interests None.

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REFERENCES


Patients/participants Three hundred and forty-nine adults (61% male; mean age 38 years) with a diagnosis of alcohol dependence (DSM-IV). Participants were recruited immediately following completion of residential treatment. Exclusion criteria were a history of suicidality, significant developmental or cognitive impairment and visual problems.

Settings US; recruitment February 2010 to May 2012.

Intervention A smartphone application (Addiction—Comprehensive Health Enhancement Support System; A-CHESS) for 8 months, with follow-up completed to 12 months (n=170). A-CHESS is a support system, based on the self-determination theory, which includes audio-guided relaxation and interactive features such as GPS, alerting the owner if they are approaching a high-risk location such as one of their regular drinking establishments.

Comparison Treatment as usual for 12 months (n=179).

Patient follow-up Seventy-seven per cent of participants in both groups completed the 12-month survey.

Allocation Concealed.
Blinding None.

OUTCOMES
Risky drinking days (number of days on which consumption over a 2-hour period exceeded four standard drinks for men and three for women) Over the full 12 months of follow-up, participants in the A-CHESS group had significantly fewer risky drinking days (mean 1.39) compared to the controls (mean 2.75 the between-group difference was significant at 4 months (1.50 vs 3.01), and 12 months (1.13 vs 2.60), but not at 8 months.

Abstinence (previous 30 days) Over the full 12 months of follow-up, significantly more people in the A-CHESS group achieved abstinence (52%) than in the control group (40%) (OR=1.65, 95% CI 1.05 to 2.57).