Electronic interventions for unhealthy alcohol use: from an internet intervention to a smartphone app for students

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Introduction

Screening and brief interventions for unhealthy alcohol use are one of the recommended options to address the impact of alcohol use on the population's health
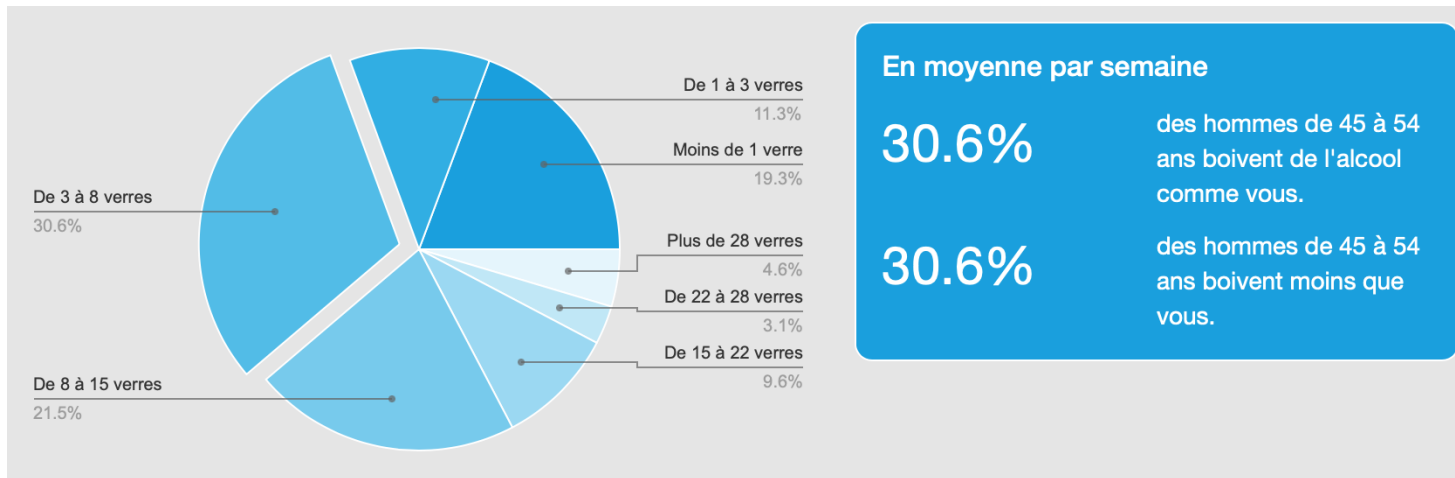
Barriers to implementation of face to face interventions include: competing priorities for clinicians, fear of stigma, lack of access

→ One option: electronic interventions

First step: internet-based brief intervention

Content of intervention: alcooQUIZZ *un peu, beaucoup... j'en suis où?*

Normative feedback

De 1 à 3 verres — 11.3%	
Moins de 1 verre — 19.3%	
De 3 à 8 verres — 30.6%	
Plus de 28 verres — 4.6%	
De 22 à 28 verres — 3.1%	
De 15 à 22 verres — 9.6%	
De 8 à 15 verres — 21.5%	

En moyenne par semaine

30.6% des hommes de 45 à 54 ans boivent de l'alcool comme vous.

30.6% des hommes de 45 à 54 ans boivent moins que vous.

First step: internet-based brief intervention

Content of intervention:

 Normative feedback

 Consequences

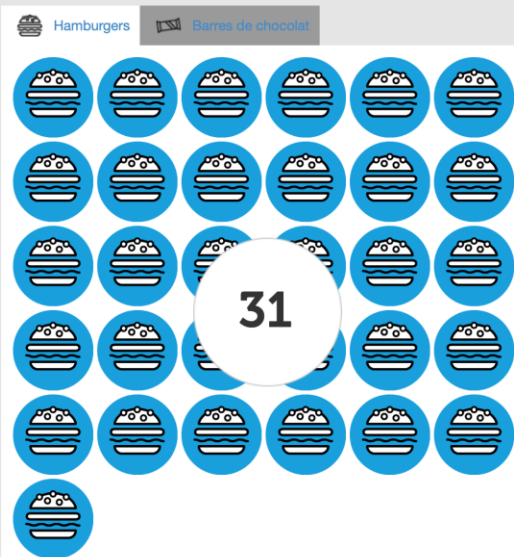 Blood alcohol calculator

 Calorific content

 Indication of risk

 Recommendations

alcooQUIZZ   un peu, beaucoup... j'en suis où?

Équivalent calorique de ma consommation d'alcool

Au cours des 3 derniers mois, vous avez ingéré 7'714 kcal en boissons alcoolisées, soit l'équivalent de 31 hamburgers ou de 43 barres de chocolat.

Hamburgers   Barres de chocolat

31

First step: internet-based brief intervention

Content of intervention:

Normative feedback

Consequences

Blood alcohol calculator

Calorific content

Indication of risk

Recommendations

alcooQUIZZ un peu, beaucoup... j'en suis où?

| Consommation | Impact | Alcoolémie | Calories | Recommandations |

Recommandations suite à votre bilan
Il ressort de vos réponses que votre profil de consommation d'alcool pourrait mettre votre santé en danger.

Ce danger est lié à:

Une consommation d'alcool aiguë qui augmente principalement le risque d'accident (risque d'accident mortel multiplié par 10 pour une alcoolémie de 0.9 pour mille). La consommation de 6 verres ou plus lors d'une même occasion augmente aussi les comportements sexuels à risque et le fait d'être violent ou d'être victime de violence.

Internet-based brief intervention for young men with unhealthy alcohol use: a randomized controlled trial in a general population sample

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ABSTRACT

Aim To test the efficacy of an internet-based brief intervention (IBI) in decreasing alcohol use among young Swiss men aged 21 years on average. **Design** Two parallel-group randomized controlled trial with a 1:1 allocation ratio containing follow-up assessments at 1 and 6 months post-randomization **Setting** Internet-based study in a general population sample. **Participants** Twenty-one-year-old men from Switzerland with unhealthy alcohol use (>14 drinks/week or ≥ 6 drinks/occasion at least monthly or Alcohol Use Disorders Identification Test (AUDIT) scores ≥ 8) **Intervention** IBI consisting of (1) normative feedback, (2) feedback on consequences of alcohol use, (3) calorific value of reported consumption, (4) computed blood alcohol concentration for reported consumption, (5) indication of risk, (6) information on alcohol and health and (7) recommendations indicating low-risk drinking limits. Control condition: no intervention (assessment only). **Measurements** At 1 and 6 months: quantity/frequency questions on alcohol use (primary outcome: number of drinks/week) and binge drinking prevalence; at 6 months: AUDIT score, consequences of drinking (range = 0–12). **Findings** Follow-up rates were 92% at 1 month and 91% at 6 months. At 6 months, participants in the intervention group ($n = 367$) reported greater reductions in the number of drinks/week than participants in the control group ($n = 370$) [treatment × time interaction, incidence rate ratio (RR) = 0.86, 95% confidence interval (CI) = 0.78; 0.96], but no significant differences were observed on binge drinking prevalence. There was a favourable intervention effect on AUDIT scores (IRR = 0.93, 95% CI = 0.88; 0.98), but not on the number of consequences (IRR = 0.93, 95% CI = 0.84; 1.03). **Conclusions** An internet-based brief intervention directed at harmful alcohol

Results

- Participants who received the intervention reported drinking 15% less at 6 months compared to participants who did not receive the intervention

- No effect on the prevalence of binge drinking

- Effect on the AUDIT score at 6 months

Development of a pilot smartphone app

Aim:

- Increase access to the intervention (notably in contexts (bars, nightclubs, etc.) where alcohol is used)

- Possibility of goal setting and ongoing self-monitoring

Full length article

Smartphone application for unhealthy alcohol use: Pilot randomized controlled trial in the general population

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ARTICLE INFO

ABSTRACT

Background: There is limited evidence of the efficacy of smartphone applications to reduce unhealthy alcohol use. We tested the efficacy of providing access to a smartphone-based brief intervention for unhealthy alcohol use.
Methods: We conducted a two parallel-group randomized controlled trial with follow-up at 6 months, among 977 individuals with an Alcohol Use Disorder Identification Test ≥ 8 and drinking 15 or more drinks/week. Participants were randomized to receive (or not) access to a smartphone application consisting of personalized feedback, risk assessment and self-monitoring. The primary outcome was the mean number of drinks/week. An intention to treat analysis (ITT) and a per protocol analysis (PP) were conducted.
Results: Mean age of participants was 34.2(9.8), 46% were female. The baseline mean number of drinks per week was 28.9(16.7). Results differed by type of analysis: ITT: all 977 participants were included in the analysis. Follow-up rate was 70.7% (n = 691). There was no significant intervention effect: the Incidence Rate Ratio (IRR) (95%CI) for number of drinks per week was 0.93(0.84; 1.03). PP: 702 participants were included in the analysis. Follow-up rate was 78.1% (n = 548). There was a significant intervention effect: the IRR for number of drinks per week was 0.88(0.78; 0.99).
Conclusions: Providing access to a smartphone-based brief intervention had no impact on drinking at 6 months and does not appear to be an effective intervention in reducing drinking. Those who downloaded the app appear to benefit from it, nevertheless downloads were limited and further development of similar apps should focus on increasing use.

Results

No significant effect in main analysis (number of drinks per week IRR 0.93 (0.84; 1.03)

Significant effect in per protocol analysis (number of drinks per week, IRR 0.88 (0.78; 0.99)

→ Not everyone with access to the app will use it

→ Use is limited (57% downloaded the app)

Further development of the app → increase its appeal / use
Participation of the target population in app development
Mixed methods: qualitative / RCT

STUDY PROTOCOL   **Open Access**

Smartphone-based secondary prevention intervention for university students with unhealthy alcohol use identified by screening: study protocol of a parallel group randomized controlled trial

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Abstract

Background: Unhealthy alcohol use is a leading cause of morbidity and mortality among young people, including university students. Delivering secondary prevention interventions against unhealthy alcohol use is challenging. Information technology has the potential to reach large parts of the general population. The present study is proposed to test a proactive secondary prevention smartphone-based intervention against unhealthy alcohol use.

Methods: This is a parallel-group, randomized controlled trial (1:1 allocation ratio) among 1696 university students with unhealthy alcohol use, identified by screening and followed up at 3, 6, and 12 months. Participants will be randomized to receive access to a smartphone-based intervention or to a no intervention control condition. The primary outcome will be self-reported volume of alcohol drunk over the past 30 days, reported as the mean number of standard drinks per week over the past 30 days, measured at 6 months. Secondary outcomes will be number of heavy drinking days over the past 30 days, at 6 months. Additional outcomes will be maximum number of drinks on any day over the past 30 days, alcohol-related consequences (measured using the Short Inventory of Problems (SIP-2R), and academic performance.

Discussion: The aim of this trial is to close the evidence gap on the efficacy of smartphone-based secondary prevention interventions. If proven effective, smartphone-based interventions have the potential to reach a large portion of the population, completing what is available on the Internet.

Trial registration: ISRCTN, 10007691. Registered on 2 December 2019. Recruitment will start in April 2020.

Development

Development

Participants were 18 or more, screened positive for unhealthy alcohol use (AUDIT-C>=4 for men >=3 for women) and students at one of four higher education institutions in Switzerland.

Results. Mean age was 23.3; 50% female; 9 students tested prototype 1, 11 students tested prototype 2 (6 who tested prototype 1 and 5 newly recruited to allow for "naïve" assessment of prototype 2). All participated in the scheduled interviews.

Results (content analysis)

Students recommended that prevention smartphone applications for unhealthy alcohol use be:

- Easy to use

- Useful

- Stimulating (notifications)

- Rewarding

- Serious

- Credible

Randomized controlled trial

- 1770 participants recruited
- Students with unhealthy alcohol use

- Access to app vs no-intervention control
- Follow-up at 3, 6 and 12 months
  - 96% FU rate at 3 , 96% at 6, 93% at 12 months

Results

Of the 884 randomized to receive access to the intervention, 738 (83.5%) downloaded the smartphone application

Efficacy of the intervention: ? (primary outcome: volume of drinking)

Summary

Development of internet intervention, efficacy at 6 months on volume of drinking

Development of smartphone app (increase reach, monitoring/goal setting)

Pilot → No impact in ITT analysis, impact in PP analysis. Limited use

Extended development → involvement of target users

→ modifications: mostly related to design / presentation

→ RCT: Better app uptake: pilot study: app download: 56.6% / RCT: app download: 83.5%

Results of efficacy analysis: coming soon…

Conclusions

Internet interventions are acceptable and useful in adressing unhealthy alcohol use

Uptake / retention is a challenge
   importance of design and credibility

Smartphone apps: promising (but evidence is still inconclusive)