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▶ Text-message-based drinking assessments and brief interventions for young adults discharged from the emergency department.

Suffoletto B., Callaway C., Kristan J. et al.

Alcoholism: Clinical and Experimental Research: 2012, 36(3), p. 552–560.

For the first time this US study tried mobile phone text messaging as a way to moderate the hazardous drinking of young adults screened at emergency departments. Compared to merely monitoring, text-based advice did cut drinking – but why did the monitoring-only patients actually start to drink more?

Summary Though recommended for US emergency departments, few have implemented formal screening to identify risky drinkers and even fewer then offer brief interventions in the form of short sessions of advice or counselling to reduce risk. Conducting brief intervention via a standardised mobile phone text messaging procedure could help overcome resistance from clinical staff who feel they have neither the time nor the expertise to discuss substance use with patients, and permit low-cost, large-scale implementation. For young adults in particular, text messaging may be preferable to face-to-face counselling.

This pilot study aimed to test the feasibility of brief text-message interventions for young adults identified as risky drinkers in emergency departments, and to gauge the impact to help guide the design of a larger study. It was conducted at three US emergency departments and trauma centres in Western Pennsylvania, where in 2010 research assistants asked 109 (all but three agreed) 18–24-year-old patients to complete a computerised screening assessment of their drinking over the past three months based on the Alcohol Use Disorders Identification Test-Consumption Questions (AUDIT-C). This assessment consist solely of questions about drinking, not about its consequences which

may not yet be evident among young people.

About half (52) the 106 respondents screened positive for hazardous drinking, of whom 45 met criteria for the study, agreed to join it, and completed further baseline assessments of (*inter alia*) their drinking and related problems. Nearly two thirds were women and just 15% were unemployed. Their screening responses indicated that most drank at least twice a week and nearly half drank at least six standard US drinks on a single occasion at least once a month. All were advised they could have significant problems related to their drinking and encouraged to talk to their doctors, and were sent and encouraged to read an alcohol advice booklet after discharge.

All further intervention occurred via text messaging over the 12 weeks after the patients had been discharged. The 45 participants were randomly allocated to three groups of 15. One set (the control group) were simply texted reminders about the final assessment to be e-mailed to them 12 weeks after they had been recruited to the study. Another 15 (the assessment-only group) were weekly texted two questions, one about how often they had drunk over the past week, the other about their maximum single occasion consumption.

The final 15 (the intervention group) were sent the same questions, but an automated process then responded with texts depending on their answers. Those who had not drunk were congratulated, while those who had drunk moderately were told they were not drinking at a dangerous level and offered brief information about the risks of drinking. Full intervention was reserved for the (on different weeks) roughly 10–50% whose text responses indicated heavy single-occasion drinking over the past week. They were texted a message expressing concern over their drinking and asked if they would be willing to aim this week to drink moderately. Those who were willing were texted a reinforcing message followed by computer-selected strategies for cutting down, such as keeping track of their drinking, setting goals, pacing and spacing, eating at the same time, finding alternatives, avoiding 'triggers', planning ways to handle 'urges', and refusing drinks. Those unwilling to aim to drink moderately were prompted to reflect on their decision by texts such as: "It's OK to have mixed feelings about reducing your alcohol use. Consider making a list of all the reasons you might want to change."

Main findings

In the circumstances of the trial (when participants were paid for responding), 12 of the 15 allocated to the intervention group responded completely to all 12 weekly text messages, as did 11 of the 15 assessment-only patients. Half the time intervention group patients responded that they were willing to aim for moderate drinking, and if they did, just 36% failed to meet this criterion in the following week compared to 62% who were not willing.

Text-messaged drinking assessments were available for assessment-only and intervention groups, but not for the control group. These indicated that without intervention, assessment-only patients typically drank heavily on a single occasion in seven of the 12 weeks of the study, but those also offered the intervention in just two weeks. These reports closely corresponded with the final results from a standard questionnaire sent by e-mail, and the patients involved said they had responded accurately and felt comfortable reporting how much they drank by texting.

Final and more comprehensive assessments completed by e-mail were available for 39 of the 45 participants, including control group participants who were neither texted questions about how much they were drinking nor offered any advice. The general picture was that drinking reductions were greatest among intervention patients, somewhat less among those in the control group, while on average assessment-only patients actually ended up drinking more heavily than before the start of the study, and did significantly worse than intervention patients. For example, on average intervention patients drank at their heaviest 2.1 standard US drinks less than they had done before the study, control group patients 0.6 drinks less, but assessment-only patients 1.1 drinks more.

Asked at the end for their opinions, those offered the intervention messages said they were useful in cutting down their drinking. However, few patients (just eight of 26) had read the booklet they were sent.

The authors' conclusions

This study is the first to show that mobile phone text messaging can be used to collect drinking data from young adults over a 12-week period. Response rates to texts are better than found with interactive voice response systems and the responses appear valid as benchmarked against a validated and widely used assessment.

It was also the first to show that interventions based on the same technology are feasible and may be associated with reductions in hazardous drinking among young adults discharged from emergency departments, apparently via successful prompting to set a short-term moderation goal. This automated computer system could provide message-based feedback on drinking and support encouraging moderation on a large scale at minimal cost in money and emergency department staff time.

It remains to be explained why (unlike in other studies) assessment-only patients actually increased their drinking between baseline and final assessment. One possibility is that the weekly reports on their drinking submitted by the other two groups led them to be more accurate at the final assessment.

It should be acknowledged that the research assistants may have tended to select certain types of patients for the study. The intervention group too may have learned that under-reporting their drinking avoided follow-on messages. Group imbalances in gender or other characteristics may have affected the results, and lasting impacts remain unknown. Assessment-only and intervention patients were paid an additional $30 for completing responses to at least 10 of the 12 weekly text messages. Without this incentive, real-world response rates may be lower.

FINDINGS As the authors explain, this study was primarily a 'proof of concept' trial of the text-messaging system. It showed that with incentives in place, a high response rate was possible, but it is easy to imagine that without incentives the messages might have been ignored as frequently as the alcohol advice booklet the patients were sent. All the questions about drinking could be answered in private and the results known only to researchers. Had hospital staff been involved the responses might have been less frank and many fewer youngsters identified as hazardous drinkers.

The surprise in the study was an apparently counterproductive impact among assessment-only patients, whose drinking trends were on average worse than patients

prompted weekly to at least record their drinking. From the charts in the article it seems this was due to a few patients who started the study drinking relatively little but then substantially increased. It seems possible that for them the reports they made simply reminded them how little they were drinking. Another possibility is that this was simply a fluke result which will not be replicated and might not have been found had the study recruited more patients.

The good and expected news was that the intervention group reduced drinking more than the assessment-only group, suggesting that over and above the assessment process, offering feedback and advice had a moderating influence on drinking among patients selected to be drinking at hazardous levels. This suggestion is tempered however by the fact that these patients did not reduce their drinking significantly more than control patients simply reminded about the final assessment. Also the difference in heavy drinking days between intervention and assessment-only patients became clearly apparent by the first week of the study. Since patients were reporting on the past week, this difference seems to have occurred *before* drinking could have been influenced by the first intervention messages.

While text-messaging studies are too few to have been reviewed, a synthesis of nine studies of computerised alcohol interventions for adult risky drinkers found that compared to no intervention they led to a statistically significant if moderate extra reduction in drinking. A findings hot topic entry on computerised interventions has concluded that though nobody is yet suggesting these can replace therapists for typical treatment populations, further down the severity and complexity scale, the evidence is growing that they have a place in a public health response to risky drinkers. The featured study allied computerised responses to text messaging, a convenient, non-intrusive and acceptable way to reach populations in the mobile phone era, and one which lends itself to the automatic collection and processing of data on drinking and responses to other questions.

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