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Commentary on Blow *et al.* (2017): Leveraging technology may boost the effectiveness and adoption of interventions for drug use in emergency departments

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Abstract

The effect of brief interventions for drug use can depend upon the type and severity of substance use, as well as psychosocial stability and other variables. Innovative technology, such as the computer delivered or assisted approaches tested by Blow et al., should be used to support implementation of brief interventions by maintaining simplicity and enhancing efficiency.

Keywords

Brief intervention; computer; drugs; emergency department; implementation; intervention; motivational interview; SBIRT; substance use; technology

The limited adoption of interventions for the prevention and treatment of substance use problems in the emergency department (ED) and other non-specialized clinical settings, despite a multi-faceted campaign, exemplifies the importance of considering barriers to setting-specific implementation while studying effect [1–3]. Among the many cited barriers to the integration of intervention for substance use problems in the ED are (1) clinician skillset inadequacy, (2) time and resource limitations and (3) intervention efficacy concerns [4, 5]. While these barriers may not be unique to the ED, the magnitude of their impact is exacerbated by challenges inherent to this clinical setting. Blow *et al.*'s randomized controlled trial contributes to the literature not only as a positive study of behavioral intervention for drug use in the emergency department (ED), but also by comparing more practical and sustainable methods of intervention delivery that address important implementation barriers [6]. These findings, in the context of the existing literature, also raise questions about why there are conflicting studies.

Blow *et al.* selected two active technology-based treatment arms (compared to enhanced usual care) that would be more practical and sustainable for broader implementation in resource-limited settings: (1) patient self-administered computer-delivered brief intervention and (2) computer-guided therapist delivered brief intervention [6]. To different degrees, both

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Declaration of interests

None.

would require fewer staff and, theoretically, less initial training and continued supervision to ensure quality and fidelity. While recruitment was minimally restrictive, as one might find in an effectiveness study, the investigators monitored quality and fidelity strictly and collected sufficient baseline, outcome and process measures data to assess efficacy and inform implementation strategies appropriately. The promising outcomes, particularly of the computer-guided therapist-delivered intervention, deserve study at additional sites to replicate findings. The high prevalence of cannabis use compared to other drugs among the cohort and in other positive studies may emphasize the importance of tailoring interventions to substance used and/or severity [6–9]. Further, this observation may highlight how sampling could contribute to inconsistencies in the study of Screening, Brief Intervention and Referral to Treatment (SBIRT) and to concerns related to its effect. In other words, if the effect size is greater for cannabis use compared to 'harder drugs', then the likelihood of a study being positive would depend, in part, upon the relative prevalence of cannabis use among the cohort.

The mixed results of studies of SBIRT for alcohol and drug use should prompt us to identify factors that have contributed to the lack of clarity. Overall, studies of SBIRT have demonstrated efficacy for unhealthy,particularly non-dependent alcohol use [10–13]; however, this effect may not translate to drug use, with the possible exception of cannabis [6–9,14–19]. In studies of SBIRT for unhealthy alcohol use, there appears to be a 'sweet spot' with regard to severity in terms of demonstrating an effect. For individuals whose drinking barely exceeds the threshold of what is considered safe, it difficult to demonstrate an effect because there is little room for improvement. At the other end of the severity spectrum, the SBIRT intervention itself may not be substantive enough for individuals with severe alcohol use disorders.

It is also logical to expect that the type and severity of substance use, as well as psychosocial stability and other variables, modify the effect of SBIRT for drug use. Perhaps we need to pay more attention to the dose–response relationship of this behavioral intervention, as we do in pharmacological testing. While the content of the brief intervention and referral may differ on an individual level, SBIRT is minimally individualized otherwise and, notably, does not include medication-assisted treatment. Just as we do not treat all heart disorders in the same way, it makes little sense to approach substance use with a single SBIRT intervention. At the same time, we must recognize that introducing complexity has the potential to hinder adoption further in general medical settings. This highlights the importance of leveraging innovative technology, such as the computer-delivered or assisted approaches tested by Blow *et al.*to support implementation by maintaining simplicity and enhancing efficiency while incorporating more tailored, patient-centered care to boost effectiveness.

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