Traversing the tech terrain in substance use research

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Most research on substance use behaviours has relied on retrospective self-report data collected in questionnaires and interviews. These methods rely on participants: 1) knowing what substance(s) they have consumed; 2) being able to accurately recall quantities consumed after the event; and 3) feeling safe and being willing to convey that information accurately in research. Retrospective self-report methods are also used in screening tools and underpin feedback provided in brief interventions.

Innovations in technology provide opportunities to overcome some of these limitations. For instance, ecological momentary assessments can be used to collect in-the-moment data, captured as the substance use event unfolds, minimising recall bias. Ecological momentary assessments can also form the basis for ecological momentary interventions, whereby an intervention interacts with participants in real-time, in attempt to change the trajectory of the substance use event. Transdermal alcohol monitors can sample the concentration of alcohol in perspiration, offering continuous biometric measurement over time with low burden to participants.

This presentation outlines technology which has been applied in the substance use research and intervention fields. I will provide case studies using these different technologies, including the opportunities and challenges involved with each. I will discuss considerations of content, equity and maximising translation potential of digital interventions. Finally, I will discuss opportunities for digital interventions to extend beyond education, information and therapeutic interventions to facilitate access to equipment and services that further enable preventative and protective health behaviours.

Disclosure of Interest Statement:
CW is funded by a National Health and Medical Research Council Early Career Fellowship.