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Best practices in digital health to improve antiretroviral treatment adherence

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COVID-19 has disrupted routine health service delivery and there is increasing use of digital interventions to reduce exposure of patients and healthcare workers to SARS-CoV-2 infection.[1] For HIV drug adherence monitoring, service providers may be of interest to adopt best practices in digital health but it is important that interventions described in trials can be replicated in real-world practice. Pooled analyses suggest that text message interventions are associated with increased adherence,[2] but service providers should examine individual trials in detail before deciding on a specific approach.

For example, a randomised controlled trial by Gross *et al*[3] in 2019 reported no effect of a two-way mobile-delivered intervention on detectable viral load at 48 weeks among people taking antiretroviral therapy. However, a similar study by Lester *et al*[4] in 2010 did report an effect on viral suppression at 12 months.

Both trials evaluated two-way mobile phone interventions. In the Lester trial, participants were sent weekly Short Message Service 'SMS' messages in the local language asking 'How are you?' to which they were expected to respond by text message. In the Gross trial, participants were sent daily, and then weekly, SMS messages in the local language asking 'Everything ok?', to which they were expected to respond by calling a central number. In both trials, failure to respond to messages triggered an attempt at phone counselling by healthcare workers. In the Lester trial, 4171 out of 11 983 (35%) responses would have required a phone call. In the Gross trial, 248 out of 250 participants (99%) met the criteria for phone contact at least once. Despite both studies involving a significant amount of phone counselling, they have been described as 'SMS interventions' and the content and possible effect of phone counselling are not discussed.[5]

While it is possible that the effect of the interventions is attributable to the text messages, the possible role of phone counselling should be acknowledged. Phone counselling enables personalised support to be delivered. Concerns can be addressed and content tailored accordingly in a way that is not possible with automated messages. However, phone counselling can be resource intensive and costly.

Distinctions should be made when pooling results of studies that use automated digital health interventions and those that include phone counselling. It is important to correctly describe the nature of digital health interventions as this will have implications for replicability and scale.

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