

# Feasibility of Interactive Text message Response (ITR) as a Novel, Real-Time Measure of Adherence to Antiretroviral Therapy for HIV+ Youth

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Youth living with HIV/AIDS (YLH) face unique challenges to optimal adherence to antiretroviral therapy (ART). Accurate, real-time methods to assess adherence are needed to facilitate early intervention and promote viral suppression. The purpose of this study was to assess the feasibility and validity of interactive text message response (ITR) as a measure of adherence to ART among YLH. This study was part of a larger pilot text message reminder intervention conducted at a US community-based, LGBT-focused health center providing clinical services to YLH. Eligibility criteria for this pilot study included HIV-positive serostatus, aged 14–29, use of personal cell phone, English-speaking, and on ART with demonstrated adherence difficulties. During the 24-week study period, participants received personalized daily short message system reminders with a follow-up message 1 hour later asking whether they took medication and directing a response via return text message. To determine whether or not ITR would be a feasible, valid measure of adherence, we calculated the proportion of positive responses indicating medication had been taken divided by the total number of messages requesting a response and compared this response rate to a self-reported adherence measure, the visual analogue scale (VAS). Participants ( $n = 25$ ) were on average 23 years old, largely male (92 %), Black (60 %) and behaviorally infected (84 %). Over the course of the intervention, study participants responded to prompts via text to indicate whether or not they had taken their medication approximately 61 % of the time. The overall mean ITR adherence rate (i.e., positive responses) was 57.4 % (SD = 28.5 %). ITR and VAS measures were moderately, positively correlated ( $r = 0.52$ ,  $p < 0.05$ ) during the first 6 weeks of the study period. ITR adherence rates were significantly higher on weekdays versus weekends ( $p < 0.05$ ). This pilot study showed both moderate responsiveness of individuals to daily ITR and a moderate correlation of ITR adherence rates with a reliable measure during the first 6 weeks of the study, suggesting that this method, with additional effort and improvements, may be a helpful tool to identify and respond to adherence patterns in real-time.

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