

# I Wish to Continue Receiving the Reminder SMS: A Mixed Methods Study on the Acceptability of Digital Adherence Tools Among Adults on Antiretroviral Treatment

Kennedy Ngowi<sup>1</sup>, Francis Pima<sup>2</sup>, Blandina Mmbaga<sup>2</sup>, Rob Aarnoutse<sup>3</sup>, Peter Reiss<sup>1</sup>,  
Pythia Nieuwkerk<sup>1</sup>, Mirjam Sprangers<sup>1</sup>, Marion Sumari-de Boer<sup>2</sup>

<sup>1</sup>Amsterdam University Medical Centers (UMC)MC, Location AMC, University of Amsterdam, Department of Medical Psychology, Amsterdam, The Netherlands

<sup>2</sup>Kilimanjaro Clinical Research Institute

<sup>3</sup>Radboudumc, Radboud Institute for Health Sciences & Department of Pharmacy, Nijmegen, The Netherlands

**Introduction:** Implementing a Digital Adherence Tool (DAT) acceptable in limited-resource settings to enhance adherence to HIV medication has been challenging. The barriers to adherence are multi-faceted, and several factors have been studied, including patient characteristics, treatment characteristics, and health system-related factors. We describe a post-intervention assessment of the acceptability of DATs to improve adherence to antiretroviral treatment.

**Method:** A mixed-methods study part of a three-arm randomized controlled trial (REMIND) investigating the effect of SMS text messages (SMS) and real-time medication monitoring (RTMM) on treatment adherence compared to standard care. We assessed the acceptability of the interventions by applying Sekhon's theoretical framework of acceptability (TFA). The theory comprises seven constructs (affective attitude, perceived burden, perceived effectiveness, ethicality, self-efficacy, and intervention coherence). Exit interviews and IDI were conducted to understand the patient's experience (successes, challenges, and barriers) and behaviors regarding the interventions. Translated transcripts, memos, and field notes were coding by NVivo12. We used thematic framework analyses.

**Result:** Of the 166 enrolled in RTMM and SMS, 150 (90%) completed 48 weeks of study visits, and of those, 143 were interviewed (68 in the SMS arm and 75 in the RTMM arm). Subthemes emerging during interviews were: Affective attitude, high satisfaction reported among 140(98%); Perceived effectiveness, motivated to adhere with medication reported by 142(99%); Perceived burden, keeping-device at home, uncomfortably with SMS-content was experienced by 6%; Intervention Coherence, understanding the how the intervention work was described 97%; Ethicality, concern about SMS content reported by 8%. Self-efficacy, the majority felt confident to comply with the intervention. Few were told to experience network failure and long feedback sessions during clinic-visit.

**Conclusion:** Acceptability of the DAT was high, as demonstrated through the seven constructs. However, several factors may hamper the acceptability including, the contents and number of SMS, carrying of devices, and network.

