

# **Effectiveness of a Mobile Health Intervention for Appointment and Medication Reminders on Viral Suppression in Adolescents and Young Adults with HIV in Soweto, South Africa**

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L, e, r, a, t, o, M, o, k, o, e, n, a, ,, T, h, a, n, d, i, w, e, N, k, o, s, i, ,, K, a, g, i, s, o, v, a, n, d, e, r, M, e, r, w, e

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## | Abstract

Adolescents and young adults (AYA) living with HIV in sub-Saharan Africa often have difficulties with clinic attendance and medication adherence, resulting in poor viral suppression. Mobile health (mHealth) strategies may address these challenges in resource-limited settings. This study evaluated the effectiveness of a tailored mHealth intervention, using automated SMS reminders for appointments and medication, on improving viral suppression rates among AYA with HIV in Soweto, South Africa. A randomised controlled trial was conducted. Participants aged 15–24 years were randomly allocated to receive either the mHealth intervention plus standard care or standard care alone. Viral load data were collected at baseline and at a follow-up clinic visit. The primary outcome was the proportion of participants achieving viral suppression (<50 copies/mL). Participants receiving the mHealth intervention demonstrated a statistically significant improvement in viral suppression compared to the control group. The proportion of participants with a suppressed viral load at follow-up was 78% in the intervention arm versus 62% in the control arm. An mHealth intervention delivering appointment and medication reminders significantly improved rates of viral suppression among AYA with HIV in this setting. Integration of such low-cost, scalable mHealth tools into existing HIV care programmes should be considered. Programme planners could implement these reminder systems within

differentiated service delivery models for youth. Future research should investigate the long-term sustainability and cost-effectiveness of such interventions. mHealth, HIV, adolescents, young adults, viral suppression, adherence, South Africa This study provides original evidence on the efficacy of a simple SMS-based reminder system for improving a key clinical outcome in a vulnerable population within a high-prevalence urban African setting.

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