

# FEASIBILITY OF MHEALTH INTERVENTIONS TOWARDS PROMOTING HIV SELF-TESTING UPTAKE IN SUB-SAHARAN AFRICA: A SYSTEMATIC REVIEW OF LITERATURE

Oluwayemisi Ayomipo Adaka<sup>1</sup>, Eme Theodora Owoaje<sup>2</sup>, Adedayo Omolara Tella<sup>3</sup>

<sup>1</sup>Department of Preventive and Social Medicine, University of Port Harcourt, Nigeria

<sup>2</sup>Department of Community Medicine, College of Medicine, University of Ibadan,

<sup>3</sup>Department of Preventive and Social Medicine, University of Port Harcourt, Nigeria

Corresponding Author's Email: [oluwayemisi\\_adaka@uniport.edu.ng](mailto:oluwayemisi_adaka@uniport.edu.ng)

**Objective:** This study aimed to synthesize existing research on the feasibility of mobile health technology (mHealth) to promote HIV self-testing (HIVST) uptake within Sub-Saharan Africa (SSA)

**Methods:** Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, a comprehensive search for HIVST publications with mHealth supports published in English between January 1, 2010 and March 1, 2023 was undertaken and assessed for mHealth feasibility in promoting HIVST across diverse feasibility indicators, populations and research designs in SSA

**Results:** Eleven studies met the inclusion criteria and were narratively synthesized, 63% of which were observational studies while 37% were randomized control trials. SMS, mobile applications, or a combination of mHealth strategies were mostly used to promote HIVST uptake. Most studies were carried out in South Africa (54%), and in the general population (54%). Feasibility metrics were inconsistently reported across studies because its definitions varied, nonetheless most studies reported one or more feasibility metrics and HIVST uptake was the most common way (81%) of assessing feasibility.

SMS-based interventions significantly increased HIVST uptake among hard-to-reach populations and were effective for reporting testing outcomes. Mobile applications guided participants through testing, result interpretation, and self-reporting HIVST results, and most studies reported high HIVST uptake (89.0%–100%). Compared to HIVST alone, call-based interventions enhanced HIVST uptake and linkage to care or prevention ( $p = 0.021$ ). Most studies found combined mHealth interventions highly feasible (78.9%–99.2%)

**Conclusion:** Although variable between the diverse mHealth interventions, this systematic review provides compelling evidence supporting the feasibility of mHealth in promoting HIVST uptake in SSA and paves the way for greater use of HIVST with mHealth. Future research should consider using rigorous methodology and focus on populations disproportionately affected by HIV within diverse SSA regions to ensure broad applicability. Feasibility measures should also be standardized for uniform reporting across studies.

**Keywords:** HIV; self-test; mHealth; Sub-Saharan Africa; Feasibility

**Citation:** Adaka et al. ASFI Annual Conference and Boot Camp, 28<sup>th</sup>–30<sup>th</sup> November 2023



**Copyright:** © 2024 by the authors. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).