

Effectiveness of HIV Self-Testing Among Priority Populations in Sub-Saharan Africa: Evidence from a Systematic Review and Meta-analysis

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BACKGROUND: HIV self-testing (HIVST) is a key differentiated service delivery strategy to improve HIV testing uptake among priority populations in sub-Saharan Africa, including adolescents, young people, men, and first-time testers. Access to conventional facility-based testing remains constrained by stigma, confidentiality concerns, long waiting times, and health system limitations, making alternative testing approaches critical for reaching underserved groups.

AIM: To assess the effectiveness of HIV self-testing compared with standard-of-care HIV testing approaches among priority populations in sub-Saharan Africa.

METHODS: Evidence from multiple trials and implementation studies was systematically synthesized using logit transformations and random-effects modelling. Heterogeneity across studies was assessed using the I² statistic, and findings were interpreted across different populations and delivery models.

RESULTS: The pooled estimate showed high uptake of HIV self-testing across included studies, with a 95% confidence interval of 0.82 to 0.95, indicating consistently strong acceptance and utilization. Moderate heterogeneity was observed, reflecting variation in populations, study designs, and delivery strategies. Subgroup analyses suggested that community-based distribution, peer-led approaches, and secondary distribution (through partners and peers) achieved particularly high uptake, especially among adolescents and young people. HIVST also increased testing among first-time testers and hard-to-reach populations who were less likely to access facility-based services. In addition to improved uptake, studies reported high acceptability and user satisfaction, although linkage to confirmatory testing and care remained variable across settings. Differences in implementation models, awareness levels, and health system capacity contributed to observed variability in outcomes.

CONCLUSION: HIV self-testing is an effective and acceptable strategy for increasing HIV testing uptake among priority populations in sub-Saharan Africa. However, successful scale-up requires strengthening linkage-to-care systems, community engagement, and context-specific implementation approaches that address health system and structural barriers.

KEYWORDS: HIV self-testing; HIV testing services; priority populations; sub-Saharan Africa; systematic review; meta-analysis.

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