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Oral self-testing for adolescents and young adults absent or refusing to test during home-based HIV testing – a mixed-method study embedded in a cluster-randomized trial in Lesotho (ADORE study)

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Background: In sub-Saharan Africa, adolescents and young adults (AYA) represent a key population for HIV testing and care. Home-based testing is a validated and widely used approach in sub-Saharan Africa but often fails to reach high coverage among AYA as they are often absent during day-time home-visits. ADORE (ADolescent ORal tEsting) is a mixed-method nested study, embedded in a cluster-randomized trial, that measures the effect of secondary distribution of oral HIV self-tests (HIVST) on testing coverage during home-based testing in rural Lesotho.

Materials & Methods: Clusters were defined as villages in the catchment area of 20 health facilities and were randomized to intervention or control. In intervention clusters, HIVST were left for household members who were absent or declined testing during home-based testing, and one present household member was trained on HIVST usage. Distributed HIVST were followed up by village health workers (VHW).
The quantitative outcome of ADORE study was testing coverage among AYA (age 12-24) within 120 days after home-based testing, defined as a confirmed HIV test result, known HIV+, or recent HIV- result. Secondary outcomes included the assessment of effect modification by sex. Analyses were by intention-to-treat. Intervention effects were estimated with adjusted random effects logistic regression models.
The qualitative method entailed a case-control approach using in-depth interviews about the perception of the intervention among AYA who used the HIVST (control) and among those who did not use it (case), stratified by two pre-defined factors (male vs female; age 12-15 vs age 16-24), following the concept of saturation, coded and analyzed according to the Framework Method. Trial registration: NCT03598686.

Results: 1065 consenting households with 2685 AYA were enrolled (intervention arm: 56 clusters, 572 households, 1449 AYA; control arm: 47, 538, 1236). 426 (29%) AYA in intervention and 315 (25%) in control were present and had an unconfirmed HIV status. Of those, 400/426 (94%) in intervention and 296/315 (94%) in control accepted testing. In intervention arm, 937 AYA were absent (98%) or refused testing (2%). An HIVST was left for 790, and 487 (62%) were returned within 120 days. In control arm, 860 HM were absent (98%) or refused testing (2%); 7 (1%) went to the facility for testing within 120 days. 120 days after the home-visit, HIV testing coverage was 1083/1447 (75%) in intervention versus 469/1236 (38%) in control (odds ratio 5.21 [95% confidence interval 3.83-7.09]; p<0.001). The intervention effect was greater in male AYA (70% vs 24%; 7.94 [5.55-11.37]) than female AYA (79% vs 50%; 3.96 [2.81-5.59], p-interaction<0.001).
11 case-interviews and 10 control-interviews were performed. AYA expressed mixed views about the secondary distribution of oral HIVST, weighing confidentiality and convenience of testing with concerns about insufficient pre-test information and counseling. In-person assistance during and after usage of the HIVST emerged as a key qualitative theme.

Conclusions: Secondary distribution of oral HIVST among AYA achieved an increased HIV testing coverage of >35%. The intervention was particularly successful among males. The training of the present household member and the involved VHW about the HIVST usage is key.