Welcome to HIV this month! In this issue, we cover the following topics:

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Peter Godfrey-Faussett and Celeste Sandoval
UNAIDS
1. HIV testing and treatment

Misreporting of product adherence in the MTN-003/VOICE trial for HIV prevention in Africa: participants’ explanations for dishonesty.


Consistent over-reporting of product use limits researchers’ ability to accurately measure adherence and estimate product efficacy in HIV prevention trials. While lying is a universal characteristic of the human condition, growing evidence of a stark discrepancy between self-reported product use and biologic or pharmacokinetic evidence demands examination of the reasons research participants frequently misrepresent product use in order to mitigate this challenge in future research. This study (VOICE-D) was an ancillary post-trial study of the vaginal and oral interventions to control the epidemic (VOICE) phase IIb trial (MTN 003). It was conducted in three African countries to elicit candid accounts from former VOICE trial participants about why actual product use was lower than reported. In total 171 participants were enrolled between December 2012 and March 2014 in South Africa (n = 47), Uganda (n = 59) and Zimbabwe (n = 65). Data suggested that participants understood the importance of daily product use and honest reporting, yet acknowledged that research participants typically lie. Participants cited multiple reasons for misreporting adherence, including human nature, self-presentation with study staff, fear of repercussions (study termination resulting in loss of benefits and experience of HIV-related stigma), a permissive environment in which it was easy to get away with misreporting, and avoiding inconvenient additional counseling. Some participants also reported mistrust of the staff and reciprocal dishonesty about the study products. Many suggested real-time blood-monitoring during trials would encourage greater fidelity to product use and honesty in reporting. Participants at all sites understood the importance of daily product use and honesty, while also acknowledging widespread misreporting of product use. Narratives of dishonesty may suggest a wider social context of hiding products from partners and distrust about research, influenced by rumors circulating in clinic waiting-rooms and surrounding communities. Prevailing power hierarchies between staff and participants may exacerbate misreporting. Participants recognized and suggested that objective, real-time feedback is needed to encourage honest reporting.

Abstract access

Editor’s notes: The authors of this insightful paper set out the reasons women gave in a trial of vaginal and oral programmes for inaccurately reporting their behaviour during the trial. The authors could conduct this study because biologic/pharmacokinetic data were available which showed evidence of product use. These data were shared with individual women. None of the reasons women gave for not telling the truth is surprising. They lied to avoid additional questioning from research staff. They feared telling the truth would result in being removed from the trial. They feared being reprimanded. Overall, not telling the truth about product use helped them save face and time. The findings do highlight the power difference between researchers and researched, something that is hard to avoid in many areas of research. This difference was exacerbated in some circumstances by the (reported) harsh behaviour of staff towards women. The ease with which women could manipulate pill counts or product use checks, by discarding unused product is also not surprising. The perception by some women that the researchers had lied, because of changes in the trial part way through, is important to note. This highlights the importance of clear information when a trial is explained as it begins. It also points to the importance of continuous explanations and checking participant
understanding. It cannot be assumed that there is a shared understanding between researcher and researched. This is something that is easily overlooked as a trial progresses and routine visits are established. The authors highlight the value of objective measures on product use. They also observe that some participants suggested objective, real-time feedback, during trials. However, the authors also note that for many women lying about aspects of their lives to partners and family was a way of managing their lives. It could be that ‘real time feedback’ would act as a deterrent to participation for some in such circumstances. No system of data collection is perfect. It is, however, very useful to have a timely reminder that no interview data, however collected, can be assumed to be wholly accurate.

Interventions to improve adherence to antiretroviral therapy: a systematic review and network meta-analysis.


Background: High adherence to antiretroviral therapy is crucial to the success of HIV treatment. We evaluated comparative effectiveness of adherence interventions with the aim of informing the WHO’s global guidance on interventions to increase adherence.

Methods: For this systematic review and network meta-analysis, we searched for randomised controlled trials of interventions that aimed to improve adherence to antiretroviral therapy regimens in populations with HIV. We searched Cochrane Central Register of Controlled Trials, Embase, and MEDLINE for reports published up to July 16, 2015, and searched major conference abstracts from Jan 1, 2013, to July 16, 2015. We extracted data from eligible studies for study characteristics, interventions, patients’ characteristics at baseline, and outcomes for the study populations of interest. We used network meta-analyses to compare adherence and viral suppression for all study settings (global network) and for studies in low-income and middle-income countries only (LMIC network).

Findings: We obtained data from 85 trials with 16 271 participants. Short message service (SMS; text message) interventions were superior to standard of care in improving adherence in both the global network (odds ratio [OR] 1.48, 95% credible interval [CrI] 1.00-2.16) and in the LMIC network (1.49, 1.04-2.09). Multiple interventions showed generally superior adherence to single interventions, indicating additive effects. For viral suppression, only cognitive behavioural therapy (1.46, 1.05-2.12) and supporter interventions (1.28, 1.01-1.71) were superior to standard of care in the global network; none of the interventions improved viral response in the LMIC network. For the global network, the time discrepancy (whether the study outcome was measured during or after intervention was withdrawn) was an effect modifier for both adherence to antiretroviral therapy (coefficient estimate -0.43, 95% CrI -0.75 to -0.11) and viral suppression (-0.48; -0.84 to -0.12), suggesting that the effects of interventions wane over time.

Interpretation: Several interventions can improve adherence and viral suppression; generally, their estimated effects were modest and waned over time.

Abstract access

Editor’s notes: Maintaining adherence to self-administered medications is difficult. On average, people who are prescribed medications for chronic diseases take fewer than half the prescribed doses. Evidence suggests that in most settings adherence to antiretroviral therapy (ART) is better than this, but there will always be people that struggle to maintain the high levels of adherence
required for durable virologic suppression. In this analysis, there was some evidence that specific activities or combinations of activities improved virologic suppression. However, the effect sizes were small and when the analysis was confined to studies in low-income and middle-income countries, there was no evidence to suggest an effect on virologic suppression. Overall the evidence to support any particular activity or combination of activities was not compelling.

Findings from this analysis have been incorporated into most recent consolidated ART guidelines from the World Health Organization. Trying to summarize complex evidence in this way creates many challenges. Trials were conducted in different populations. Some with all people starting ART, others with people considered to have high risk of suboptimal adherence, and others with people who already had adherence problems. The trials also naturally would have differed in content and quality of the usual package of care to support adherence (the comparator for most programme). 60% of the trials were conducted exclusively in the United States, while others were conducted across different settings.

These are just some of the things that make it difficult to synthesize this evidence into guidance that can be applicable to people living with HIV worldwide. HIV programmes in countries have to decide whether or not to adopt any of these activities that are recommended by WHO on the basis of relatively weak evidence. Would we expect activities aimed at improving adherence to be generalizable across different settings? One might argue probably not. Adherence is a multifactorial, dynamic process and there is unlikely to be a ‘one size fits all’ approach to supporting adherence. In the absence of better evidence for any specific activity, we should perhaps focus on improving the quality of the basic package of adherence support offered to all people receiving ART, while also developing better ways to identify when certain people might benefit from enhanced support.

Promoting partner testing and couples testing through secondary distribution of HIV self-tests: a randomized clinical trial.


Background: Achieving higher rates of partner HIV testing and couples testing among pregnant and postpartum women in sub-Saharan Africa is essential for the success of combination HIV prevention, including the prevention of mother-to-child transmission. We aimed to determine whether providing multiple HIV self-tests to pregnant and postpartum women for secondary distribution is more effective at promoting partner testing and couples testing than conventional strategies based on invitations to clinic-based testing.

Methods and findings: We conducted a randomized trial in Kisumu, Kenya, between June 11, 2015, and January 15, 2016. Six hundred antenatal and postpartum women aged 18-39 y were randomized to an HIV self-testing (HIVST) group or a comparison group. Participants in the HIVST group were given two oral-fluid-based HIV test kits, instructed on how to use them, and encouraged to distribute a test kit to their male partner or use both kits for testing as a couple. Participants in the comparison group were given an invitation card for clinic-based HIV testing and encouraged to distribute the card to their male partner, a routine practice in many health clinics. The primary outcome was partner testing within 3 mo of enrollment. Among 570 participants analyzed, partner HIV testing was more likely in the HIVST group (90.8%, 258/284) than the comparison group (51.7%, 148/286; difference = 39.1%, 95% CI 32.4% to 45.8%, p < 0.001). Couples testing was also more likely in the HIVST group than the comparison group (75.4% versus 33.2%, difference = 42.1%, 95% CI 34.7% to 49.6%, p < 0.001). No participants reported intimate partner violence due to HIV testing. This study was limited by self-reported outcomes, a
common limitation in many studies involving HIVST due to the private manner in which self-tests are meant to be used.

Conclusions: Provision of multiple HIV self-tests to women seeking antenatal and postpartum care was successful in promoting partner testing and couples testing. This approach warrants further consideration as countries develop HIVST policies and seek new ways to increase awareness of HIV status among men and promote couples testing.

Trial registration: ClinicalTrials.gov NCT02386215.

Abstract Full-text [free] access

Editor’s notes: Despite scale-up of HIV testing services, two in every five people living with HIV remain undiagnosed. World Health Organization (WHO) has just issued updated guidance on HIV testing services (HTS). In an effort to plug this testing gap, it strengthened the recommendation that HIV self-testing (HIVST) should be offered as one of the approaches to HTS. This paper adds to the body of evidence supporting that recommendation and provides more insight into the specific role of partner-delivered self-testing.

There are challenges with conducting clinical trials of HIVST, one of which is selecting an appropriate outcome measure. In this trial, the primary outcome was participant report of male partner testing within three months of enrolment. Overall, uptake of male partner testing as reported by the participants was surprisingly high. It is worth noting that the participants and their partners may not have been particularly hard-to-reach groups. Almost all were married. The female participants were frequent testers. On average, they had tested three times in the past year. Most participants also reported that their male partner had tested at least once in the past year. It should also be noted that many women that were screened chose not to participate, so the participants may have to some extent pre-selected themselves as more interested and more likely to benefit from the activity.

There were very few male partners reported as testing HIV positive during follow-up. This study was not able to determine how effectively people linked to care after HIVST. This is one of a number of research questions that remain around the delivery and impact of HIVST. Many of these are being addressed by the large HIV Self-Testing Africa (STAR) Project (http://hivstar.lshtm.ac.uk/). What seems to be beyond debate now though is that HIVST can and should play a role in helping us to achieve the UNAIDS 90-90-90 treatment target.

Intolerance of dolutegravir-containing combination antiretroviral therapy regimens in real-life clinical practice.


Objective: Dolutegravir (DGV) is one of the preferred antiretroviral agents in first-line combination antiretroviral therapy (cART). Though considered to be a well tolerated drug, we aimed to determine the actual rate, timing and detailed motivation of stopping DGV in a real-life clinical setting.

Design: A cohort study including all patients who started DGV in two HIV treatment centers in The Netherlands.

Methods: All cART-naive and cART-experienced patients who had started DGV were identified from the institutional HIV databases. Clinical data, including motivation and timing of discontinuation of DGV, were extracted from the patient files. Factors that potentially influenced
discontinuation of DGV were compared between patients who stopped or continued DGV by multivariate and Kaplan-Meier analyses.

Results: In total, 556 patients were included, of whom 102 (18.4%) were cART-naive at initiation of DGV. Median follow-up time was 225 days. Overall, in 85 patients (15.3%), DGV was stopped. In 76 patients (13.7%), this was due to intolerability. Insomnia and sleep disturbance (5.6%), gastrointestinal complaints (4.3%) and neuropsychiatric symptoms such as anxiety, psychosis and depression (4.3%) were the predominant reasons for switching DGV. In regimens that included abacavir, DGV was switched more frequently (adjusted relative risk 1.92, 95% confidence interval 1.09-3.38, P log-rank 0.01). No virologic failures were observed.

Conclusion: A relatively high rate of preliminary discontinuation of DGV due to intolerability was detected in our patient population. In particular, DGV was stopped more frequently if the regimen included abacavir. Multiple factors may explain these unexpected postmarketing observations, which warrant further investigation.

Abstract access

Editor's notes: The integrase inhibitor dolutegravir has been billed as a very important milestone in the treatment of HIV. Randomized controlled trials reported that not only was it a highly effective antiviral agent, but it also had a high barrier to resistance. Trial data also suggested an excellent safety profile. Trial participants experienced fewer side effects with dolutegravir use compared to many other drugs. For these reasons, dolutegravir is recommended as one of the preferred options for first-line treatment in European and United States treatment guidelines. In addition, it is increasingly becoming a key component in global efforts to expand access to HIV-positive people in low-income countries.

However, with increased use of dolutegravir beyond clinical trials, evidence is growing to suggest that the incidence of side effects is greater than trial data would predict. This study describes the two-year experience of a cohort spanning two medical centres in the Netherlands. It explores the rate and cause of discontinuation of dolutegravir-containing regimes in both antiretroviral therapy naïve and experienced individuals. Of 556 receiving a dolutegravir-containing regimen, just over 15% stopped its use over two years. Adverse effects were cited as the cause in a sizeable 13%. These rates of discontinuation are over five times higher than was reported from clinical trials. The predominant side effects were sleep disturbance and insomnia. Other reactions included gastrointestinal disturbances, anxiety, depression and general malaise. In terms of factors associated with increased risk of discontinuation, only the concomitant use of abacavir was identified.

These results do not detract from the importance of dolutegravir as an antiretroviral agent. Indeed, it is reassuring that in this cohort no virologic failure occurred as result of its discontinuation. The results instead highlight the need for caution concerning recommendations for dolutegravir as a universal first line agent until further data are accrued from real-world experience.


Objectives: Estimating HIV incidence is critical for identifying groups at risk for HIV infection, planning and targeting interventions, and evaluating these interventions over time. The use of reliable estimation methods for HIV incidence is thus of high importance. The aim of this study was
to compare methods for estimating HIV incidence in a population-based cross-sectional survey.

Design/methods: The incidence estimation methods evaluated included assay-derived methods, a testing history-derived method, and a probability-based method applied to data from the Ndhiwa HIV Impact in Population Survey (NHIPS). Incidence rates by sex and age and cumulative incidence as a function of age were presented.

Results: HIV incidence ranged from 1.38 [95% confidence interval (CI) 0.67-2.09] to 3.30 [95% CI 2.78-3.82] per 100 persons-years overall; 0.59 [95% CI 0.00-1.34] to 2.89 [95% CI 0.11-5.68] in men; and 1.62 [95% CI 0.16-6.04] to 4.03 [95% CI 3.30-4.77] per 100 persons-years in women. Women had higher incidence rates than men for all methods. Incidence rates were highest among women aged 15-24 and 25-34 years and highest among men aged 25-34 years.

Conclusion: Comparison of different methods showed variations in incidence estimates, but they were in agreement to identify most-at-risk groups. The use and comparison of several distinct approaches for estimating incidence are important to provide the best-supported estimate of HIV incidence in the population.

Abstract access

Editor's notes: The estimation of HIV incidence is important both for planning effective HIV prevention strategies, and also to provide a proximal measure of changes in HIV epidemics both in general populations and in higher risk sub-groups. Further development of methods for accurately measuring HIV incidence that can be applied in routine monitoring settings is necessary.

This study compares three assay-based incidence estimation methods with approaches using self-reported testing history and a probabilistic technique on age and sex stratified sero-prevalence data. Two of the assays, BioRad and Lag, use antibody markers and a recent infection testing algorithm (RITA). The BioRad assay allowed for a longer time window for detection post-infection than the Lag. Recent infections were reclassified using results from HIV viral load tests and self-reported ART use, as appropriate. The other assay detected trace levels of HIV RNA in HIV seronegative individuals. The results for the two RITA assays were very similar at 1.38 [95% CI 0.67 – 2.09] infections per 100 person years (PY) for the BioRad and 1.46 [95% CI 0.71 – 2.22] per 100 PY for Lag. Combining these with HIV-RNA results led to small increases in each incidence estimate. The results for the probability-based incidence assays were very close to those derived from the combination of the RITA and HIV-RNA assays. However, the testing history-derived approach estimated incidence as almost double that from the other methods and this is likely to be in large part due to reporting/recall bias.

Despite the limitations of the methods, it was possible to identify population sub-groups defined by age and sex at higher risk of HIV infection.

2. Elimination of childhood infections

PMTCT Option B+ does not increase preterm birth risk and may prevent extreme prematurity: A retrospective cohort study in Malawi.


Objective: To estimate preterm birth risk among infants of HIV-infected women in Lilongwe, Malawi according to maternal antiretroviral therapy (ART) status and initiation time under Option B+.
Design: **Retrospective cohort study** of HIV-infected women delivering at ≥27 weeks of gestation, April 2012- November 2015. Among women on ART at delivery, we restricted our analysis to those who initiated ART before 27 weeks of gestation.

Methods: We defined preterm birth as a singleton live birth at ≥27 and <37 weeks of gestation, with births at <32 weeks classified as extremely to very preterm. We used log-binomial models to estimate risk ratios (RR) and 95% confidence intervals (CIs) for the association between ART and preterm birth.

Results: Among 3074 women included in our analyses, 731 preterm deliveries were observed (24%). Overall preterm birth risk was similar in women who had initiated ART at any point before 27 weeks and those who never initiated ART (RR = 1.14; 95% CI: 0.84 - 1.55), but risk of extremely to very preterm birth was 2.33 (1.39 - 3.92) times as great in those who never initiated ART compared to those who did at any point before 27 weeks. Among women on ART before delivery, ART initiation before conception was associated with the lowest preterm birth risk.

Conclusions: **ART during pregnancy was not associated with preterm birth, and it may in fact be protective against severe adverse outcomes accompanying extremely to very preterm birth.** As pre-conception ART initiation appears especially protective, long-term retention on ART should be a priority to minimize preterm birth in subsequent pregnancies.

Abstract access

**Editor’s notes:** Effectively delivered antiretroviral therapy (ART) in pregnancy virtually eliminates the risk of mother-to-child HIV transmission and has been widely adopted. Option B+ is a strategy to start all HIV-positive pregnant women on ART regardless of their CD4 count or other HIV parameters and to continue it indefinitely after delivery to further protect the mother’s health. Balanced against the substantial health gains from the use of ART in pregnancy have been concerns that they may make some adverse pregnancy outcomes more common. Concerns about teratogenicity and birth defects with commonly-used drugs have largely gone as more data has accumulated but prematurity has remained an issue. There has been conflicting evidence from previous studies. Some have suggested an increased risk of preterm birth but others, including meta-analysis, have not. Many earlier studies were predominantly of women with advanced HIV disease, a group with an already-increased risk of preterm birth, and included single- or dual-drug regimens that are no longer recommended. Thus, the results of earlier studies may not be generalizable to women with early stage HIV disease who are being offered newer ART regimens in the context of Option B+.

This study has shown no increase in preterm birth associated with ART in pregnancy, and in fact a statistically and clinically significant protective effect for very early birth (before 32 weeks gestational age). It is a large, thorough and impressive piece of work but has the limitations of any observational study. The risk of unmeasured confounders can never be eliminated; in this case perhaps economic status or level of education. No precise data are presented on the ARV combinations used but it is implied that the great majority of women received efavirenz-based treatment, in accordance with national guidelines in Malawi. Previous studies have suggested that protease inhibitors may be responsible for increased preterm birth. The present study cannot address this question.

This large study of pregnancy outcomes from Option B+ should reassure HIV-positive women and their clinicians that no significant harms were found to be associated with this strategy.

Adherence to antiretroviral therapy during and after pregnancy: cohort study on women receiving care in Malawi’s Option B+ program.
Background: Adherence to antiretroviral therapy (ART) is crucial to preventing mother-to-child transmission of human immunodeficiency virus (HIV) and ensuring the long-term effectiveness of ART, yet data are sparse from African routine care programs on maternal adherence to triple ART.

Methods: We analyzed data from women who started ART at 13 large health facilities in Malawi between September 2011 and October 2013. We defined adherence as the percentage of days "covered" by pharmacy claims. Adherence of ≥90% was deemed adequate. We calculated inverse probability of censoring weights to adjust adherence estimates for informative censoring. We used descriptive statistics, survival analysis, and pooled logistic regression to compare adherence between pregnant and breastfeeding women eligible for ART under Option B+, and nonpregnant and nonbreastfeeding women who started ART with low CD4 cell counts or World Health Organization clinical stage 3/4 disease.

Results: Adherence was adequate for 73% of the women during pregnancy, for 66% in the first 3 months post partum, and for about 75% during months 4-21 post partum. About 70% of women who started ART during pregnancy and breastfeeding adhered adequately during the first 2 years of ART, but only about 30% of them had maintained adequate adherence at every visit. Risk factors for inadequate adherence included starting ART with an Option B+ indication, at a younger age, or at a district hospital or health center.

Conclusions: One-third of women retained in the Option B+ program adhered inadequately during pregnancy and breastfeeding, especially soon after delivery. Effective interventions to improve adherence among women in this program should be implemented.

Abstract Full-text [free] access

Editor’s notes: To maximize the impact of antiretroviral therapy (ART), people living with HIV should be diagnosed early, enrolled and retained in pre-ART care, initiated on ART and retained in ART care. Long-term adherence to achieve and maintain viral load suppression is the last step in the continuum of HIV care.

“Option B+” is the programmatic option for preventing mother-to-child HIV transmission, pioneered by Malawi, in which combination ART is started during pregnancy and continued life-long. This manuscript describes adherence to ART among pregnant women in the Option B+ programme in Malawi. The authors had access to prospectively-collected pharmacy data, and created an adherence measure that estimates the percentage of days ARVs were actually available to women during a time period. Therefore, this indicator measures the maximum number of days that ART could have been taken, but does not measure how much of the treatment was actually consumed. In this study, about a quarter of women started on ART with an Option B+ indication were lost to follow-up during the first year of ART. Among women retained, 30% adhered inadequately during pregnancy and breastfeeding, especially during the first three months after delivery. Unreported transfers of care to other clinics after delivery, postnatal depression, or difficulties with travelling to the facilities may be explanations for this temporary decline in adherence.

The authors validated their pharmacy-based adherence measure against viral load data in a subsample of about 500 people. They found that their adherence measure correlated well with the viral load measurement, and suggest that if access to viral load testing is limited, pharmacy-based
adherence measures might be useful to identify people with adherence problems for targeted viral load testing.

These data are consistent with other studies reporting suboptimal retention particularly among women starting ART during pregnancy. Suboptimal adherence to ART during breastfeeding increases the risk of post-natal transmission, and the risk of the emergence of resistant virus in both mother and infant, as well as compromising the mother’s treatment outcome. Programmes need to address these issues in order to support adherence and retention in the early post-natal period.

3. Combination prevention

Impact of sexual trauma on HIV care engagement: perspectives of female patients with trauma histories in Cape Town, South Africa.


South African women have disproportionately high rates of both sexual trauma and HIV. To understand how sexual trauma impacts HIV care engagement, we conducted in-depth qualitative interviews with 15 HIV-infected women with sexual trauma histories, recruited from a public clinic in Cape Town. Interviews explored trauma narratives, coping behaviors and care engagement, and transcripts were analyzed using a constant comparison method. Participants reported multiple and complex traumas across their lifetimes. Sexual trauma hindered HIV care engagement, especially immediately following HIV diagnosis, and there were indications that sexual trauma may interfere with future care engagement, via traumatic stress symptoms including avoidance. Disclosure of sexual trauma was limited; no woman had disclosed to an HIV provider. Routine screening for sexual trauma in HIV care settings may help to identify individuals at risk of poor care engagement. Efficacious treatments are needed to address the psychological and behavioral sequelae of trauma.

Abstract access

Editor’s notes: Few studies have examined the impact of violence exposure on ART uptake and adherence. There is also a paucity of studies from low- and middle-income countries. South African women face a dual burden of HIV and violence risk, especially in areas characterized by extreme poverty, substance abuse and gender inequality. This study used qualitative interviews with 15 women living with HIV with histories of sexual trauma and attending an HIV-treatment clinic. The authors explore the intersections between sexual trauma experience, HIV infection and engagement with HIV care services.

Women reported complex sexual trauma histories, with repeated abuse from childhood into adulthood. This abuse was usually from family members or ‘lovers’. Sexual violence was usually accompanied by physical and emotional abuse. Women described symptoms of post-traumatic stress disorder and depression. Many associated their HIV infection with their sexual trauma / abusive relationship(s). For some, the HIV diagnosis and taking treatment reminded them of their rape and triggered feelings of shame. Women described their sexual violence experience as more stressful and shameful than their HIV status. None had disclosed their trauma history to their HIV care provider. The findings from this study suggest that women with a sexual trauma history may have poorer uptake and adherence to ARVs than women without. Additional research is necessary in low- and middle-income countries to explore this further. There is insufficient support and counselling services
for women who have experienced sexual trauma and other abuse. Implementing such services may relieve symptoms of post-traumatic stress disorder and depression and support ART uptake and adherence.

The effect of a conditional cash transfer on HIV incidence in young women in rural South Africa (HPTN 068): a phase 3, randomised controlled trial.


Background: Cash transfers have been proposed as an intervention to reduce HIV-infection risk for young women in sub-Saharan Africa. However, scarce evidence is available about their effect on reducing HIV acquisition. We aimed to assess the effect of a conditional cash transfer on HIV incidence among young women in rural South Africa.

Methods: We did a phase 3, randomised controlled trial (HPTN 068) in the rural Bushbuckridge subdistrict in Mpumalanga province, South Africa. We included girls aged 13-20 years if they were enrolled in school grades 8-11, not married or pregnant, able to read, they and their parent or guardian both had the necessary documentation necessary to open a bank account, and were residing in the study area and intending to remain until trial completion. Young women (and their parents or guardians) were randomly assigned (1:1), by use of numbered sealed envelopes containing a randomisation assignment card which were numerically ordered with block randomisation, to receive a monthly cash transfer conditional on school attendance (≥ 80% of school days per month) versus no cash transfer. Participants completed an Audio Computer-Assisted Self-Interview (ACASI), before test HIV counselling, HIV and herpes simplex virus (HSV)-2 testing, and post-test counselling at baseline, then at annual follow-up visits at 12, 24, and 36 months. Parents or guardians completed a Computer-Assisted Personal Interview at baseline and each follow-up visit. A stratified proportional hazards model was used in an intention-to-treat analysis of the primary outcome, HIV incidence, to compare the intervention and control groups. This study is registered at ClinicalTrials.gov (NCT01233531).

Findings: Between March 5, 2011, and Dec 17, 2012, we recruited 10 134 young women and enrolled 2537 and their parents or guardians to receive a cash transfer programme (n=1225) or not (control group; n=1223). At baseline, the median age of girls was 15 years (IQR 14-17) and 672 (27%) had reported to have ever had sex. 107 incident HIV infections were recorded during the study: 59 cases in 3048 person-years in the intervention group and 48 cases in 2830 person-years in the control group. HIV incidence was not significantly different between those who received a cash transfer (1.94% per person-years) and those who did not (1.70% per person-years; hazard ratio 1.17, 95% CI 0.80-1.72, p=0.42).

Interpretation: Cash transfers conditional on school attendance did not reduce HIV incidence in young women. School attendance significantly reduced risk of HIV acquisition, irrespective of study group. Keeping girls in school is important to reduce their HIV-infection risk.

Abstract Full-text [free] access

Editor’s notes: Cash transfers to vulnerable household and/or individuals have been used successfully in a variety of settings as a means to reduce poverty, improve health and achieve other development-associated outcomes. Cash transfers can help address structural drivers of HIV, such
as economic and gender inequalities and low levels of education, and have been proposed as a potentially important addition to HIV prevention efforts. However, the evidence of their effectiveness in the context of HIV prevention is mixed. This study is the first randomized controlled trial to examine the effect of cash transfers conditional on school attendance with HIV incidence in adolescent girls and young women in sub-Saharan Africa. The trial found no evidence that receipt of the conditional cash transfer reduced HIV or HSV-2 incidence.

Staying in education has been highlighted as a key factor for reducing the risk of HIV infection in girls and young women. In this setting, school attendance based on attendance registers was high in both trial arms (95%). This is much higher than in South Africa overall, and higher than in Mpumalanga Province (the study area). Eligibility for the trial was restricted to girls and young women who were currently enrolled in school, so the trial participants may have been more motivated to attend school than those who were not eligible. Interestingly, 75% of individuals who were screened for the trial were found to be ineligible, although the reasons for their exclusion are not given, and it is difficult to know how generalizable the results are. South Africa has a strong social protection system for poor families, and 80% of the study participants were from households that were receiving child support grants. The benefits of additional cash transfers in areas with high coverage of social protection may be minimal. Cash transfers to girls and young women for HIV prevention are likely to have a greater effect in settings with low school attendance and more limited social protection coverage.

Consistent with other studies, the trial found that staying in school was associated with a reduced risk of HIV, irrespective of trial arm. The cash transfer was also associated with a strongly reduced risk of intimate partner violence, and a small effect on reducing some sexual risk behaviours. Cash transfers may work both directly and indirectly, through a variety of different pathways that are likely to vary between settings and between populations. The high-recorded school attendance in both trial arms will have limited the ability to examine education as a pathway through which the cash transfer may have influenced HIV risk. A better understanding of these pathways and how they are affected by the setting may help inform the conditions under which cash transfers may be an effective component of an HIV prevention programme.

4. Key populations

Predictors of HIV infection: a prospective HIV screening study in a Ugandan refugee settlement.


Background: The instability faced by refugees may place them at increased risk of exposure to HIV infection. Nakivale Refugee Settlement in southwestern Uganda hosts 68 000 refugees from 11 countries, many with high HIV prevalence. We implemented an HIV screening program in Nakivale and examined factors associated with new HIV diagnosis.

Methods: From March 2013-November 2014, we offered free HIV screening to all clients in the Nakivale Health Center while they waited for their outpatient clinic visit. Clients included refugees and Ugandan nationals accessing services in the settlement. Prior to receiving the HIV test result, participants were surveyed to obtain demographic information including gender, marital status, travel time to reach clinic, refugee status, and history of prior HIV testing. We compared variables for HIV-infected and non-infected clients using Pearson's chi-square test, and used multivariable binomial regression models to identify predictors of HIV infection.
Results: During the HIV screening intervention period, 330 (4%) of 7766 individuals tested were identified as HIV-infected. Refugees were one quarter as likely as Ugandan nationals to be HIV-infected (aRR 0.27 [0.21, 0.34], p < 0.0001). Additionally, being female (aRR 1.43 [1.14, 1.80], p = 0.002) and traveling more than 1 h to the clinic (aRR 1.39 [1.11, 1.74], p = 0.003) increased the likelihood of being HIV-infected. Compared to individuals who were married or in a stable relationship, being divorced/separated/widowed increased the risk of being HIV-infected (aRR 2.41 [1.88, 3.08], p < 0.0001), while being single reduced the risk (aRR 0.60 [0.41, 0.86], p < 0.0001). Having been previously tested for HIV (aRR 0.59 [0.47, 0.74], p < 0.0001) also lowered the likelihood of being HIV-infected.

Conclusions: In an HIV screening program in a refugee settlement in Uganda, Ugandan nationals are at higher risk of having HIV than refugees. The high HIV prevalence among clients seeking outpatient care, including Ugandan nationals and refugees, warrants enhanced HIV screening services in Nakivale and in the surrounding region. Findings from this research may be relevant for other refugee settlements in sub-Saharan Africa hosting populations with similar demographics, including the 9 other refugee settlements in Uganda.

Abstract Full-text [free] access

Editor’s notes: The 4% prevalence seen among refugees in this study warrants the introduction of a routine offer of HIV testing and counselling, provider-initiated testing and counselling (PITC), in the outpatient services provided at this refugee settlement in Uganda. Although 7766 people accepted the offer of HIV testing and counselling (HTC), the real extent of the acceptability of this service is unclear because routine service delivery records document simple encounters (23 016 during the study period) rather than unique individuals. There may be challenges in defining and using unique identifiers in refugee settlement health care services but this is one example of their potential utility in helping understand the true burden of disease in these settings. HIV prevalence in refugees accepting testing was not significantly different from that in the general population in their countries of origin. For example, Rwanda 2.3% versus 2.9% and Burundi 1.4% versus 1.0%. The exception was the Democratic Republic of Congo (DRC) with 1.9% of Congolese refugees being HIV-positive compared to 0.8% in the DRC general population, warranting further study to understand this increased HIV risk.

This study reveals lower HIV prevalence among refugees (2%) than among Ugandan nationals availing themselves of the settlement health services (9%). The Ugandans included both refugees and people living in surrounding communities. Ugandans freely come and go from the settlement for job-associated or personal reasons. People testing positive for HIV were more likely to live outside the settlement. The extent of sexual mixing between local Ugandans and refugees from other countries in Nakivale is unknown but providing prevention and treatment services to both populations could help reduce the risk of HIV transmission within the settlement. This study was conducted when the 2010 WHO guidelines of 350 cells/mm³ or WHO stage III/IV for treatment initiation were in effect and antiretroviral therapy was free of charge. However, data are not presented in this paper on the important question of the extent of linkage to care and antiretroviral therapy. These data are now being used worldwide to track progress towards the UNAIDS 90-90-90 treatment target. Refugee settlements in sub-Saharan Africa provide fertile settings for a routine offer of HIV testing and immediate offer of antiretroviral therapy to people found to be HIV-positive, as per current WHO guidelines. This would benefit not only these individuals clinically but would help keep HIV transmission as low as possible in refugee settlements.
Reducing HIV infection in people who inject drugs is impossible without targeting recently-infected subjects.


Objective: Although our understanding of viral transmission among people who inject drugs (PWID) has improved, we still know little about when and how many times each injector transmits HIV throughout the duration of infection. We describe HIV dynamics in PWID to evaluate which preventive strategies can be efficient.

Design: Due to the notably scarce interventions, HIV-1 spread explosively in Russia and Ukraine in 1990s. By studying this epidemic between 1995 and 2005, we characterized naturally occurring transmission dynamics of HIV among PWID.

Method: We combined publicly available HIV pol and env sequences with prevalence estimates from Russia and Ukraine under an evolutionary epidemiology framework to characterize HIV transmissibility between PWID. We then constructed compartmental models to simulate HIV spread among PWID.

Results: In the absence of interventions, each injector transmits on average to 10 others. Half of the transmissions take place within 1 month after primary infection, suggesting that the epidemic will expand even after blocking all the post-first month transmissions. Primary prevention can realistically target the first month of infection, and we show that it is very efficient to control the spread of HIV-1 in PWID. Treating acutely infected on top of primary prevention is notably effective.

Conclusion: As a large proportion of transmissions among PWID occur within 1 month after infection, reducing and delaying transmissions through scale-up of harm reduction programmes should always form the backbone of HIV control strategies in PWID. Growing PWID populations in the developing world, where primary prevention is scarce, constitutes a public health time bomb.

Abstract  Full-text [free] access

Editor’s notes: This paper presents powerful findings from a mathematical model that sought to estimate how much prevalence of HIV will increase among people who inject drugs in 10-20 years’ time in the absence of HIV treatment and needle-syringe programmes. Findings suggest HIV prevalence will reach 86% in 20 years in the absence of programmes. The paper provides important new information to the growing body of evidence that estimates the impact of needle-syringe programmes and opioid substitution therapy in reducing HIV transmission among people who inject drugs, in the region. The authors focus on the impact of needle-syringe programmes and of the prevention benefits of treatment, reducing transmission among individuals recently acquiring HIV where infectivity is higher in the first month of infection. The estimates provide projections of programme impact in the realities of the current policy environment, given the prohibition of opioid substitution therapy in the Russian Federation. The model focusses on injection transmission routes only and does not consider sexual transmission among people who inject drugs. Therefore, projected estimates of HIV are likely to be underestimates. The paper is important in highlighting the urgent need for needle-syringe programmes and treatment among people who inject drugs in the region and highlighting the crisis in relation to HIV among people who inject drugs in Russia and Ukraine. Modelling estimates such as these are powerful tools to persuade policy makers of the urgent need for programmes. Importantly the authors recognize the need for structural programmes. They
highlight the need to create an enabling environment in which needle-syringe programmes can operate. This environment needs to include supportive policing practices and reducing stigma.

5. Elimination of stigma

'People say that we are already dead much as we can still walk': a qualitative investigation of community and couples' understanding of HIV serodiscordance in rural Uganda.


Background: Stable, co-habiting HIV serodiscordant couples are a key population in terms of heterosexual transmission in sub-Saharan Africa. Despite the wide availability of antiretroviral treatment and HIV educational programs, heterosexual transmission continues to drive the HIV epidemic in Africa. To investigate some of the factors involved in transmission or maintenance of serodiscordant status, we designed a study to examine participants' understanding of HIV serodiscordance and the implications this posed for their HIV prevention practices.

Methods: In-depth interviews were conducted with 28 serodiscordant couples enrolled in a treatment-as-prevention study in Jinja, Uganda. Participants were asked questions regarding sexual behaviour, beliefs in treatment and prevention, participants' and communities' understanding and context around HIV serodiscordance. Qualitative framework analysis capturing several main themes was carried out by a team of four members, and was cross-checked for consistency.

Results: It was found that most couples had difficulty explaining the phenomenon of serodiscordance and tended to be confused regarding prevention. Many individuals still held beliefs in pseudoscientific explanations for HIV susceptibility such as blood type and blood "strength". The participants' trust of treatment and medical services were well established. However, the communities' views of both serodiscordance and treatment were more pessimistic and wrought with mistrust. Stigmatization of serodiscordance and HIV-positive status were reported frequently.

Conclusions: The results indicate that despite years of treatment and prevention methods being available, stigmatization and mistrust persist in the communities of HIV-affected individuals and may directly contribute to new cases and seroconversion. We suggest that to optimize the effects of HIV treatment and prevention, clear education and support of such methods are sorely needed in sub-Saharan African communities.

Abstract Full-text [free] access

Editor's notes: Expanded access to antiretroviral treatment has significantly reduced HIV-associated mortality. It has also contributed to reduced HIV incidence including in the most highly affected region of sub-Saharan Africa. Most new infections in this region are due to heterosexual transmission, with transmission within HIV serodiscordant couples in marriage or cohabitation thought to account for most new infections. This qualitative study explores the perceptions of members of HIV serodiscordant couples in terms of their understanding of serodiscordance or eventual seroconversion. The authors also explore how this understanding affects their sexual behaviour and adherence to antiretroviral therapy (for people living with HIV).

This sub-study was part of the Highly Active Antiretroviral therapy as Prevention (HAARP) study of treatment as prevention (TasP) among serodiscordant couples. In-depth interviews were conducted
between June 2013 and August 2014. All couples were initially serodiscordant upon recruitment into treatment. Over the course of the study, 14 HIV seronegative participants seroconverted. These individuals and their partners were selected for the sub-study and gender-matched to control subjects who were HIV seropositive participants whose partners did not seroconvert during the study.

The results of the HPTN 052 trial demonstrated a 96% reduction in HIV transmission within serodiscordant couples associated with early use of antiretroviral therapy. In this rural Ugandan setting, the phenomenon of serodiscordance remains poorly understood by people affected by it and the communities surrounding them. Despite extensive education campaigns and communication about HIV prevention various factors affect understanding of serodiscordance. Medication, confusion, mistrust, stigma, and a resulting sense of inevitability may negatively affect couples’ understanding and belief in the phenomenon of serodiscordance. For a variety of reasons, some serodisordant couples also report lack of consistent condom use. This is of particular concern where abstinence has proved to be an unachievable option for many couples. Improved education regarding serodiscordance and ART treatment will be required to address heterosexual transmission and ensure the maintenance of serodiscordance in affected couples.

6. Financing

Implementation and operational research: cost and efficiency of a hybrid mobile multidisease testing approach with high HIV testing coverage in east Africa.


Background: In 2013–2014, we achieved 89% adult HIV testing coverage using a hybrid testing approach in 32 communities in Uganda and Kenya (SEARCH: NCT01864603). To inform scalability, we sought to determine: (1) overall cost and efficiency of this approach; and (2) costs associated with point-of-care (POC) CD4 testing, multidisease services, and community mobilization.

Methods: We applied microcosting methods to estimate costs of population-wide HIV testing in 12 SEARCH trial communities. Main intervention components of the hybrid approach are census, multidisease community health campaigns (CHC), and home-based testing for CHC nonattendees. POC CD4 tests were provided for all HIV-infected participants. Data were extracted from expenditure records, activity registers, staff interviews, and time and motion logs.

Results: The mean cost per adult tested for HIV was $20.5 (range: $17.1–$32.1) (2014 US$), including a POC CD4 test at $16 per HIV+ person identified. Cost per adult tested for HIV was $13.8 at CHC vs. $31.7 by home-based testing. The cost per HIV+ adult identified was $231 ($87-$1245), with variability due mainly to HIV prevalence among persons tested (ie, HIV positivity rate). The marginal costs of multidisease testing at CHCs were $1.16/person for hypertension and diabetes, and $0.90 for malaria. Community mobilization constituted 15.3% of total costs.

Conclusions: The hybrid testing approach achieved very high HIV testing coverage, with POC CD4, at costs similar to previously reported mobile, home-based, or venue-based HIV testing approaches in sub-Saharan Africa. By leveraging HIV infrastructure, multidisease services were offered at low marginal costs.

Abstract access
The scale up of HIV testing services over recent years has meant that infrastructure for HIV testing is, in many places, much stronger than that of other diseases. This study assessed the costs and cost-effectiveness of both HIV testing services and additional multi disease testing in 32 communities of Uganda and Kenya. As has been found in other studies, testing people through community health campaigns cost less than home-based testing. However, the cost per HIV positive person identified varied widely according to the underlying HIV prevalence. The costs of including additional disease testing services – for hypertension, diabetes and malaria – were low. A more holistic approach to health testing could lead to substantial health benefits for relatively low cost.

7. Health systems and services

Effect of HIV infection on human papillomavirus types causing invasive cervical cancer in Africa.


Objectives: HIV infection is known to worsen the outcome of cervical human papillomavirus (HPV) infection and may do so differentially by HPV type.

Design: Twenty-one studies were included in a meta-analysis of invasive cervical cancers (ICC) among women infected with HIV in Africa.

Method: Type-specific HPV DNA prevalence was compared with data from a similar meta-analysis of HIV-negative ICC using prevalence ratios (PR).

Results: HPV detection was similar in 770 HIV-positive (91.2%) and 3846 HIV-negative (89.6%) ICC, but HIV-positive ICC harbored significantly more multiple HPV infections (PR = 1.75, 95% confidence intervals: 1.18 to 2.58), which were significantly more prevalent in ICC tested from cells than from biopsies. HPV16 was the most frequently detected type in HIV-positive ICC (42.5%), followed by HPV18 (22.2%), HPV45 (14.4%), and HPV35 (7.1%). Nevertheless, HIV-positive ICC were significantly less frequently infected with HPV16 than HIV-negative ICC (PR = 0.88, 95% confidence intervals: 0.79 to 0.99). Other high-risk types were significantly more prevalent in HIV-positive ICC, but only for HPV18 was there a significantly higher prevalence of both single and multiple infections in HIV-positive ICC. Increases for other high-risk types were primarily accounted for by multiple infections. The proportion of HPV-positive ICC estimated attributable to HPV16/18 (71.8% in HIV positive, 73.4% in HIV negative) or HPV16/18/31/33/45/52/58 (88.8%, 89.5%) was not affected by HIV.

Conclusions: HIV alters the relative carcinogenicity of HPV types, but prophylactic HPV16/18 vaccines may nevertheless prevent a similar proportion of ICC, irrespective of HIV infection.

Abstract access

Invasive cervical cancer (ICC) is one of the most common cancers in low- and middle-income countries. In the African region the prevalence of both ICC and HIV are high. Compared to HIV-negative women, HIV-positive women are at increased risk of oncogenic high-risk (HR) human papillomavirus (HPV) incidence and persistence, and cervical lesion incidence and progression. Current HPV vaccines offer potential for cervical cancer prevention by targeting the HR-HPV types associated with ICC. Although there is no data yet available on HPV vaccine efficacy...
among HIV-positive persons, HPV vaccines have been reported to be safe and immunogenic in HIV-positive children, female adolescents and adults.

This systematic review compared the HPV type distribution and the HPV vaccine type distribution in ICC biopsy and cervical cell specimens of 770 HIV-positive and 3846 HIV-negative women from 21 studies in 12 African countries.

The authors report that the fraction of ICC attributable to the HPV types included in the current bivalent (HPV16/18) and nonavalent (HPV16/18/31/33/45/52/58) vaccines was similar among HIV-positive and HIV-negative women (bivalent: 61.7% and 67.3%; nonavalent: 88.9% and 89.5%, respectively). However, a non-negligible proportion of ICC from both HIV-positive and HIV-negative women were infected with non-vaccine types in the absence of any of the vaccine types (7.0% and 7.9% of ICC from HIV-positive and HIV-negative women, respectively), and this was highest for HPV35.

These findings confirm that the currently available HPV vaccines could prevent a similar proportion of ICC cases in HIV-positive as in HIV-negative women. ICC remains an important co-morbidity among HIV-positive women even in the antiretroviral era. Given that HIV-positive women are at greater risk of HR-HPV persistence and cervical lesion incidence and faster progression to high-grade cervical lesions, primary prevention of HPV infection through vaccination could reduce HPV infection and HPV-associated disease in Africa. However, cervical cancer screening will continue to remain important for both HIV-positive and HIV-negative women as there remain a proportion of ICC cases that may not be preventable by currently available vaccines.

School-based interventions for preventing HIV, sexually transmitted infections, and pregnancy in adolescents.


Background: School-based sexual and reproductive health programmes are widely accepted as an approach to reducing high-risk sexual behaviour among adolescents. Many studies and systematic reviews have concentrated on measuring effects on knowledge or self-reported behaviour rather than biological outcomes, such as pregnancy or prevalence of sexually transmitted infections (STIs).

Objectives: To evaluate the effects of school-based sexual and reproductive health programmes on sexually transmitted infections (such as HIV, herpes simplex virus, and syphilis), and pregnancy among adolescents.

Search methods: We searched MEDLINE, Embase, and the Cochrane Central Register of Controlled Trials (CENTRAL) for published peer-reviewed journal articles; and ClinicalTrials.gov and the World Health Organization’s (WHO) International Clinical Trials Registry Platform for prospective trials; AIDS Education and Global Information System (AEGIS) and National Library of Medicine (NLM) gateway for conference presentations; and the Centers for Disease Control and Prevention (CDC), UNAIDS, the WHO and the National Health Service (NHS) centre for Reviews and Dissemination (CRD) websites from 1990 to 7 April 2016. We hand searched the reference lists of all relevant papers.

Selection criteria: We included randomized controlled trials (RCTs), both individually randomized and cluster-randomized, that evaluated school-based programmes aimed at improving the sexual and reproductive health of adolescents.

Data collection and analysis: Two review authors independently assessed trials for inclusion, evaluated risk of bias, and extracted data. When appropriate, we obtained summary measures of
treatment effect through a random-effects meta-analysis and we reported them using risk ratios (RR) with 95% confidence intervals (CIs). We assessed the certainty of the evidence using the GRADE approach.

Main results: **We included eight cluster-RCTs that enrolled 55 157 participants.** Five trials were conducted in sub-Saharan Africa (Malawi, South Africa, Tanzania, Zimbabwe, and Kenya), one in Latin America (Chile), and two in Europe (England and Scotland). Sexual and reproductive health educational programmes. Six trials evaluated school-based educational interventions. **In these trials, the educational programmes evaluated had no demonstrable effect on the prevalence of HIV (RR 1.03, 95% CI 0.80 to 1.32, three trials; 14 163 participants; low certainty evidence), or other STIs (herpes simplex virus prevalence: RR 1.04, 95% CI 0.94 to 1.15; three trials, 17 445 participants; moderate certainty evidence; syphilis prevalence: RR 0.81, 95% CI 0.47 to 1.39; one trial, 6977 participants; low certainty evidence).** There was also no apparent effect on the number of young women who were pregnant at the end of the trial (RR 0.99, 95% CI 0.84 to 1.16; three trials, 8280 participants; moderate certainty evidence). Material or monetary incentive-based programmes to promote school attendance. **Two trials evaluated incentive-based programmes to promote school attendance. In these two trials, the incentives used had no demonstrable effect on HIV prevalence (RR 1.23, 95% CI 0.51 to 2.96; two trials, 3805 participants; low certainty evidence).** Compared to controls, the prevalence of herpes simplex virus infection was lower in young women receiving a monthly cash incentive to stay in school (RR 0.30, 95% CI 0.11 to 0.85), but not in young people given free school uniforms (data not pooled, two trials, 7229 participants; very low certainty evidence). **One trial evaluated the effects on syphilis and the prevalence was too low to detect or exclude effects confidently (RR 0.41, 95% CI 0.05 to 3.27; one trial, 1291 participants; very low certainty evidence). However, the number of young women who were pregnant at the end of the trial was lower among those who received incentives (RR 0.76, 95% CI 0.58 to 0.99; two trials, 4200 participants; low certainty evidence).** Combined educational and incentive-based programmes. The single trial that evaluated free school uniforms also included a trial arm in which participants received both uniforms and a programme of sexual and reproductive education. In this trial arm herpes simplex virus infection was reduced (RR 0.82, 95% CI 0.68 to 0.99; one trial, 5899 participants; low certainty evidence), predominantly in young women, but no effect was detected for HIV or pregnancy (low certainty evidence).

Authors’ conclusions: **There is a continued need to provide health services to adolescents that include contraceptive choices and condoms and that involve them in the design of services. Schools may be a good place in which to provide these services. There is little evidence that educational curriculum-based programmes alone are effective in improving sexual and reproductive health outcomes for adolescents. Incentive-based interventions that focus on keeping young people in secondary school may reduce adolescent pregnancy but further trials are needed to confirm this.**

Abstract  Full-text [free] access

**Editor’s notes:** School-based HIV prevention programmes are widespread worldwide. These programmes use educational institutions as a venue to reach a population that is entering sexual maturity. Several systematic reviews have found beneficial effects of these programmes on HIV-associated knowledge and behaviours, though a subsequent effect of reduced HIV incidence remains unconfirmed. In this systematic review and meta-analysis, the authors included eight randomized controlled trials from sub-Saharan Africa, Europe, and Latin America. Whether using a curriculum- or incentive-based programme, the trials did not provide evidence of an effect of school-based programmes on reducing HIV infection. Nor was there compelling evidence of an effect of these
programmes on reducing sexually transmitted infection or pregnancy. This paper highlights the difficulty of translating knowledge and reported behaviors into reductions in HIV infection and other biological outcomes. Further thought is necessary to deliver effective sexual and reproductive health programmes in schools – possibly including incentives, which show some promise but need further evidence on effectiveness.

A qualitative exploration of the mental health and psychosocial contexts of HIV-positive adolescents in Tanzania.


Although 85% of HIV-positive adolescents reside in sub-Saharan Africa, little is known about the psychosocial and mental health factors affecting their daily well-being. Identifying these contextual variables is key to development of culturally appropriate and effective interventions for this understudied and high-risk population. The purpose of this study was to identify salient psychosocial and mental health challenges confronted by HIV-positive youth in a resource-poor Tanzanian setting. A total of 24 qualitative interviews were conducted with a convenience sample of adolescents aged 12-24 receiving outpatient HIV care at a medical center in Moshi, Tanzania. All interviews were audio-recorded, transcribed, and coded using thematic analysis. Psychosocial challenges identified included loss of one or more parents, chronic domestic abuse, financial stressors restricting access to medical care and education, and high levels of internalized and community stigma among peers and other social contacts. Over half of youth (56%) reported difficulties coming to terms with their HIV diagnosis and espoused related feelings of self-blame. These findings highlight the urgent need to develop culturally proficient programs aimed at helping adolescents cope with these manifold challenges. Results from this study guided the development of Sauti ya Vijana (The Voice of Youth), a 10-session group mental health intervention designed to address the psychosocial and mental health needs of HIV-positive Tanzanian youth.

Abstract Full-text [free] access

Editor’s notes: This article presents the findings of a mixed-methods study with young people living with HIV and accessing care in Moshi, Tanzania. The study was conducted as part of a larger study assessing mental health needs in this population. The article reports on themes from individual qualitative interviews with 24 young people (aged 13-23) who had mental health difficulties that were previously assessed with the scales used in the larger project. Young people reported a wide range of psychosocial issues leading to ongoing mental health challenges. These were challenges for which they had received little or no psychological support. Issues included internalized, feared and experienced HIV stigma, loss and bereavement from being orphaned. Additional challenges were stress from poverty and insecurity in the household, isolation and difficulties with disclosure of their HIV status, and direct and vicarious experiences of violence and abuse. Young people also discussed finding strength in spirituality, friendships and especially peer-support from other young people living with HIV. Findings from the overall study are being used to inform the development of a mental health activity model that, if effective, could be scaled up in other low-income settings.