

15th International Conference on
HIV TREATMENT AND
PREVENTION ADHERENCE

Community-Based Interventions to Sustain ART Adherence and VL Suppression in COVID-19 Era



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Grady. The New York Times. May 14, 2020



The Pandemic's Hidden Victims: Sick or Dying, but Not From the Virus

As the coronavirus overwhelms the health care system, people with other illnesses struggle to find treatment.

Physical, Emotional, and Social Well-being of PLWH Threatened



Psychosocial/Structural Barriers

- Minority stress
- Racism
- Misogyny
- Homophobia
- Xenophobia
- Lack of resilience
- Violence
- Homelessness
- Incarceration
- Loneliness
- Social isolation
- Lack of social support
- Lack of access to information and technology
- Lack of access to healthcare
- Lack of access to parks and outdoor space
- Poverty
- Food insecurity
- Lack of transportation
- Pandemic-related stress

Syndemic Health Problems

- COVID-19
- HIV
- Non-communicable diseases
- STIs
- Coinfections
- Malnutrition
- Mental health
- Substance use

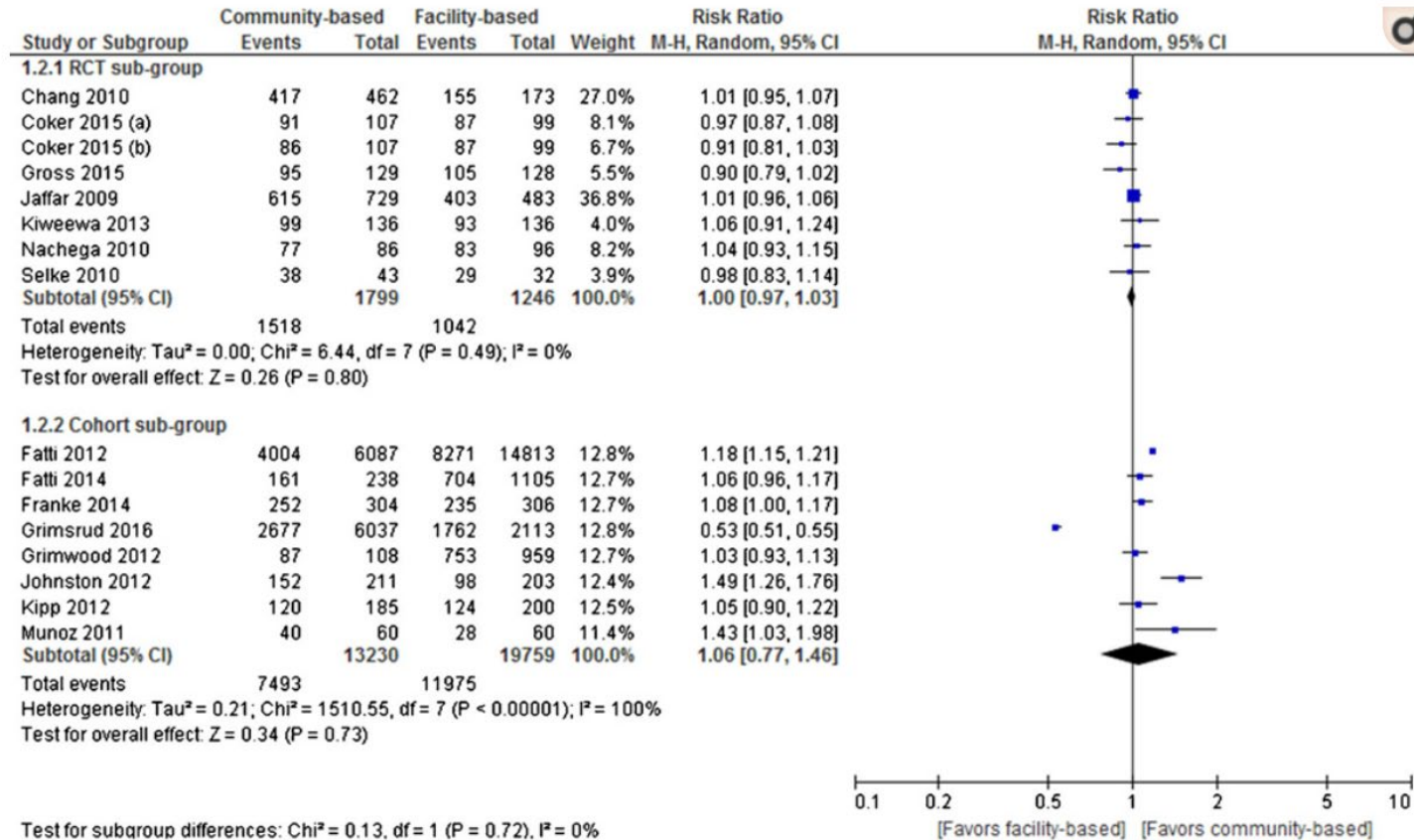
- Mental health
- Substance use
- Poverty
- Loneliness
- Medical mistrust
- Food insecurity
- Housing insecurity
- Racism, homophobia

... from COVID-19 public health response all likely to affect PWH disproportionately

Redesigning Health System in Era of COVID-19



Community- vs Health Facility-Based ART Refill

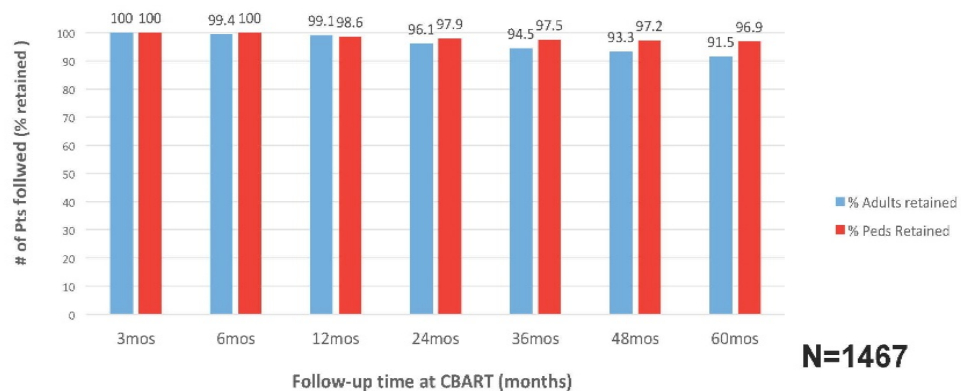


Community-ART in Namibia



Good Retention Outcomes in Community-Based ART Models

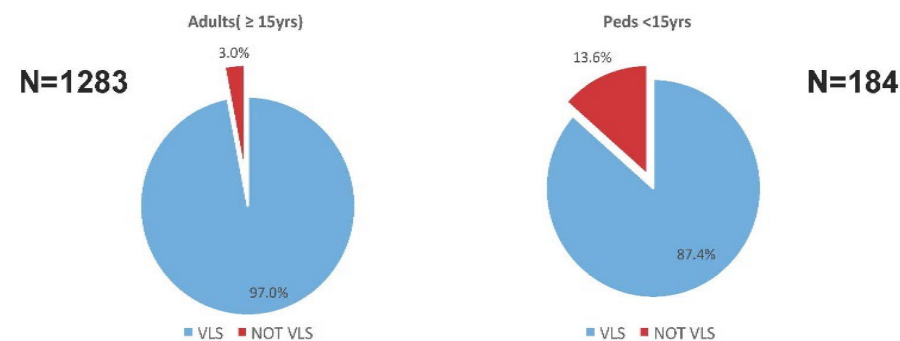
Retention of Patients at CBARTs in Okongo and Eenhana Districts, 2007-2017: Preliminary results



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Good Viral Load Outcomes from Community-Based ART

Viral load suppression based on most recent viral load test result completed at least 3 months after down-referral to CBART



Note: Viral Load Suppression was defined as VL<1,000 copies /ml

Successes with Community-based...
Taking service delivery back to communities to reach the last 90!

Multi-scripting: 6- vs 2-months non-inferior in South Africa



Retention and viral load outcomes from a cluster randomized trial comparing extending Adherence Club ART refill dispensing intervals from 2 to 6 monthly.

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CONCLUSION:

At 12 months, no appreciable difference in outcomes between AC patients receiving SOC or 6-month refills



Outcomes of Three- Versus Six-Monthly Dispensing of Antiretroviral Treatment (ART) for Stable HIV Patients in Community ART Refill Groups: A Cluster-Randomized Trial in Zimbabwe

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 Kudakwashe C. Takarinda, PhD,⁵ Tsitsi Apollo, MBChB, MPH, MBA,⁵ Owen Mugurungi, MBChB, MSc,⁵
 Charles Chasela, PhD,^{7,8} Risa M. Hoffman, MD, MPH,⁹ and Ashraf Grimwood, MBChB, MPH¹

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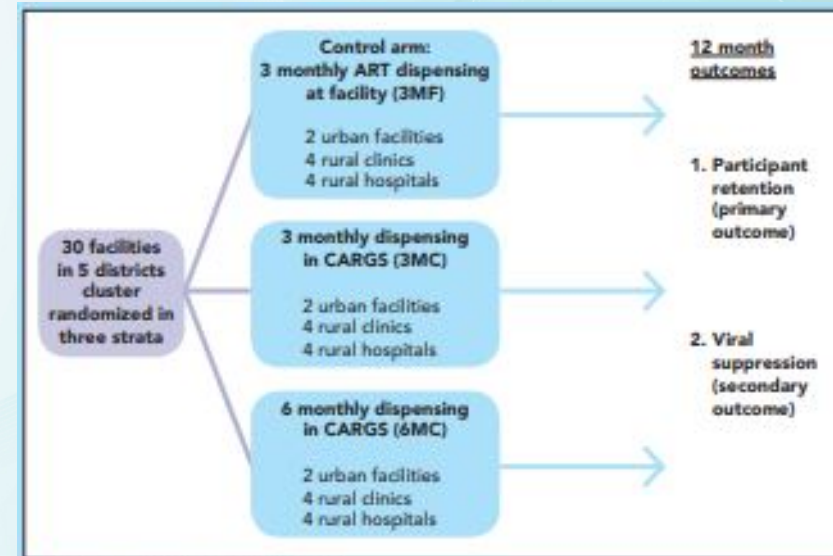


Figure 1: Study design diagram

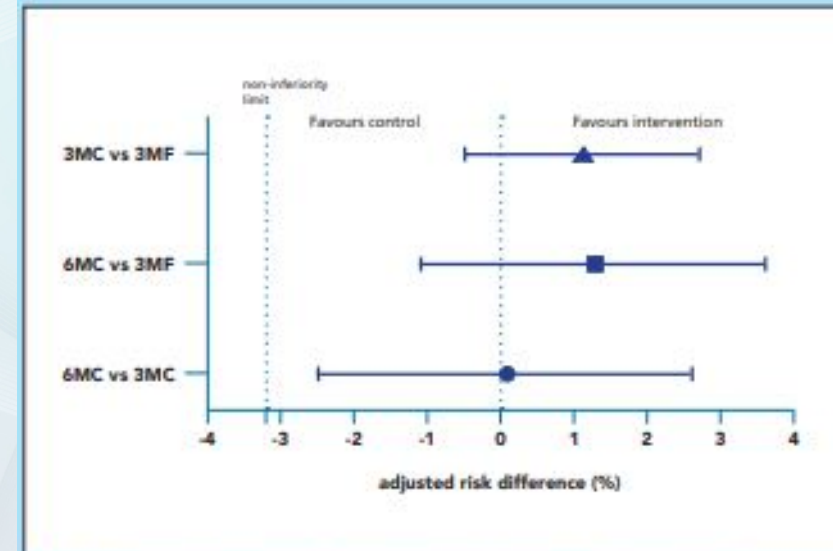


Figure 2: Comparison of arms for participant retention in antiretroviral treatment care (primary outcome) after 12 months



Taking ART re-supply out of the clinic

Local challenges can be solved by local entrepreneurs

Automated medicine dispensing machines

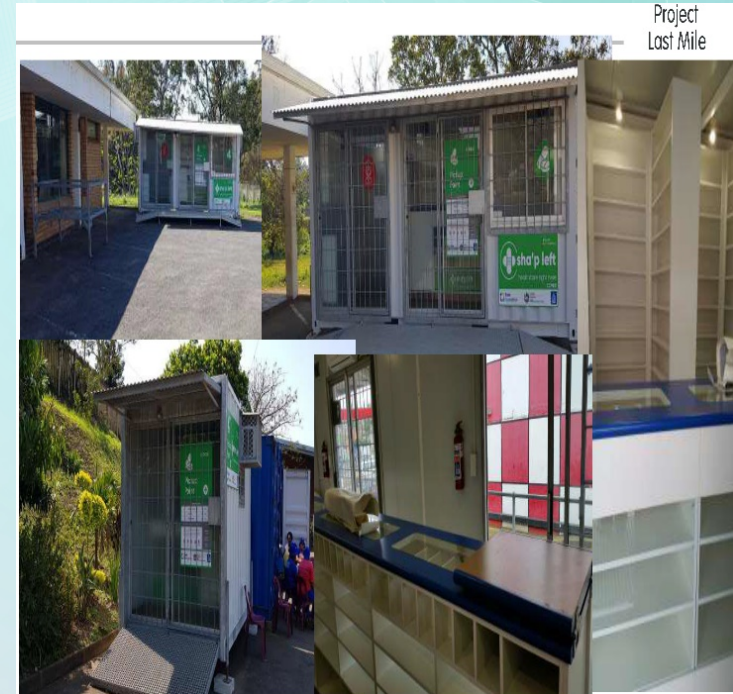


Image Sources: Aurum Research Institute, Project Last Mile, Right to Care - SA

HOME vs. CLINIC-ART REFILL: DOES IT MATTER? A CAUSAL ANALYSIS

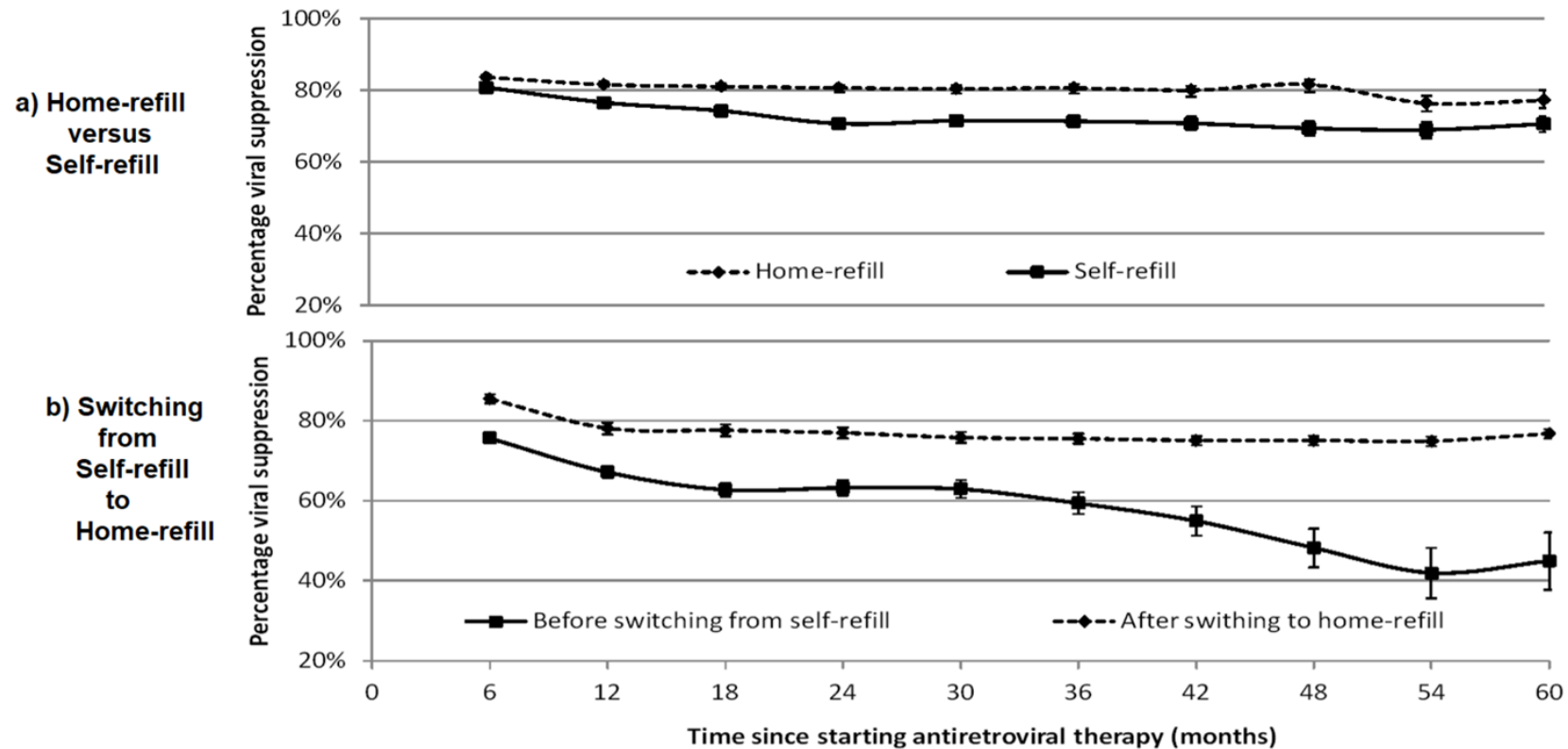


Figure 1: Comparing HIV viral load response (% suppression) from baseline to 60 months on antiretroviral therapy with 95% confidence ranges for home-refill by courier with (a) self-refill and (b) switching from self-refill to home-refill by courier

PLWH with known status but not yet on ART



Community-based antiretroviral therapy versus standard clinic-based services for HIV in South Africa and Uganda (DO ART): a randomised trial

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Summary

Background Community-based delivery of antiretroviral therapy (ART) for HIV, including ART initiation, clinical and laboratory monitoring, and refills, could reduce barriers to treatment and improve viral suppression, reducing the gap in access to care for individuals who have detectable HIV viral load, including men who are less likely than women to be virally suppressed. We aimed to test the effect of community-based ART delivery on viral suppression among people living with HIV not on ART.

Methods We did a household-randomised, unblinded trial (DO ART) of delivery of ART in the community compared with the clinic in rural and peri-urban settings in KwaZulu-Natal, South Africa and the Sheema District, Uganda. After community-based HIV testing, people living with HIV were randomly assigned (1:1) with mobile phone software to community-based ART initiation with quarterly monitoring and ART refills through mobile vans; ART initiation at the clinic followed by mobile van monitoring and refills (hybrid approach); or standard clinic ART initiation and refills. The primary outcome was HIV viral suppression at 12 months. If the difference in viral suppression was not superior between study groups, an a-priori test for non-inferiority was done to test for a relative risk (RR) of more than 0.95. The cost per person virally suppressed was a co-primary outcome of the study. This study is registered with ClinicalTrials.gov, NCT02929992.

Findings Between May 26, 2016, and March 28, 2019, of 2479 assessed for eligibility, 1315 people living with HIV and not on ART with detectable viral load at baseline were randomly assigned; 666 (51%) were men. Retention at the month 12 visit was 95% (n=1253). At 12 months, community-based ART increased viral suppression compared with the clinic group (306 [74%] vs 269 [63%], RR 1.18, 95% CI 1.07–1.29; $p_{\text{superiority}}=0.0005$) and the hybrid approach was non-inferior (282 [68%] vs 269 [63%], RR 1.08, 0.98–1.19; $p_{\text{non-inferiority}}=0.0049$). Community-based ART increased viral suppression among men (73%, RR 1.34, 95% CI 1.16–1.55; $p_{\text{superiority}}=0.0001$) as did the hybrid approach (66%, RR 1.19, 1.02–1.40; $p_{\text{superiority}}=0.026$), compared with clinic-based ART (54%). Viral suppression was similar for men (n=156 [73%]) and women (n=150 [75%]) in the community-based ART group. With efficient scale-up, community-based ART could cost US\$275–452 per person reaching viral suppression. Community-based ART was considered safe, with few adverse events.

Interpretation In high and medium HIV prevalence settings in South Africa and Uganda, community-based delivery of ART significantly increased viral suppression compared with clinic-based ART, particularly among men, eliminating disparities in viral suppression by gender. Community-based ART should be implemented and evaluated in different contexts for people with detectable viral load.

mHealth Interventions to Improve ART Adherence



Lancet HIV: Systematic Reviews, 2014, updated 2016

Interventions to promote adherence to antiretroviral therapy in Africa: a network meta-analysis

Edward J Mills, Richard Lester, Kristian Thorlund, Maria Lorenzi, Katherine Muldoon, Steve Kanfers, Sebastian Linnemayr, Robert Gross, Yvette Calderon, K Rivet Amico, Harsha Thirumurthy, Cynthia Pearson, Robert H Remien, Lawrence Mbuagbaw, Lehana Thabane, Michael H Chung, Ira B Wilson, Albert Liu, Olalekan A Uthman, Jane Simoni, David Bangsberg, Sanni Yaya, Till Bärnighausen, Nathan Ford, Jean B Nachega

Summary

Background Adherence to antiretroviral therapy (ART) is necessary for the improvement of the health of patients and for public health. We sought to determine the comparative effectiveness of different interventions for improving ART adherence in HIV-infected people living in Africa.

Methods We searched for randomised trials of interventions to promote antiretroviral adherence within adults in Africa. We included individual interventions with Bayesian network meta-analyses. The primary outcome was adherence defined as the proportion of patients meeting trial defined criteria; the secondary endpoint was viral suppression.

Findings We obtained data for 14 randomised controlled trials, with 7110 patients. Interventions included daily and weekly short message service (SMS; text message) messaging, calendars, peer supporters, alarms, counselling, and basic and enhanced standard of care (SOC). Compared with SOC, we found distinguishable improvement in self-reported adherence with enhanced SOC (odds ratio [OR] 1.46, 95% credibility interval [CrI] 1.06–1.98), weekly SMS messages (1.65, 1.25–2.18), counselling and SMS combined (2.07, 1.22–3.53), and treatment supporters (1.83, 1.36–2.45). We found no compelling evidence for the remaining interventions. Results were similar when using viral suppression as an outcome, although the network contained less evidence than that for adherence. Treatment supporters with enhanced SOC (1.46, 1.09–1.97) and weekly SMS messages (1.55, 1.01–2.38) were significantly better than basic SOC.

Interpretation Several recommendations for improving adherence are unsupported by the available evidence. These findings can inform future intervention choices for improving ART adherence in low-income settings.

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

Steve Kanfers, Jay J H Park, Keith Chan, Maria Eugenia Socias, Nathan Ford, Jamie I Forrest, Kristian Thorlund, Jean B Nachega, Edward J Mills

Summary

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

Weekly 2-Way SMS support and adherence counseling improve HIV adherence

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.

Funding WHO.

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Conclusions



- COVID-19 expected to derail HIV treatment adherence and VL suppression as it increase food insecurity, loneliness, substance use, and depression
- Evidence-based community-based ART delivery models are more than ever critically important during this COVID-19 crisis
- Targeted strategies to increase their uptake (e.g. implementation science) is urgently needed



Thank you!
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