ART program participation has been associated with greater utilization of healthcare services for diabetes and hypertension in rural South Africa, but the implications of this relationship for blood pressure and glucose control are unclear.

In this study, we sought to assess whether this apparent “ART Advantage” translates into improved chronic disease management indicators.

### METHODS

**Study:** The Health and Aging in Africa: a Longitudinal Study of an INDEPTH community in South Africa (HAALSI) Study is a cohort of 5,059 adults aged 40+ based in rural South Africa. The baseline survey was conducted in 2014-2015.

**Data:** The survey collected demographic characteristics and self-reported healthcare utilization. Height, weight, HIV antibody and viral load (VL) exposure to 3TC/FTC, point-of-care glucose (diabetes) and blood pressure (hypertension) were also measured.

Stage in the HIV care cascade was defined as follows: HIV-negative, HIV/No ART, ART/Detectable VL, ART/Suppressed VL.

**Analysis:** Linear regression models were used to estimate differences in SBP and glucose among those with diagnosed hypertension and diabetes across the stages of the HIV care cascade. All models were adjusted for age, sex, BMI, educational attainment and wealth quintile; models of glucose were also adjusted for fasting status.

### RESULTS

- ART/Suppressed VL was associated with greater awareness of hypertension diagnosis [adjusted risk ratio (aRR) 1.18, 95% CI: 1.09-1.28] and treatment [aRR 1.24, 95% CI: 1.10-1.41].
- Among those with diagnosed hypertension or diabetes, ART/Suppressed VL was associated with lower mean SBP [5.98 mm Hg, 95% CI: 9.65 - 2.32] and lower mean glucose [3.77 mmol/L, 95% CI: 6.85 - 0.69], compared to being HIV-negative.

### CONCLUSIONS

- Progression in the HIV care cascade was associated with improved clinical hypertension and diabetes control.
- HIV treatment programs may provide a platform for health systems strengthening for cardiometabolic disease.
- Future studies are needed to assess the mechanisms leading to the relationship between ART program use and cardiometabolic outcomes.

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