

INTRODUCTION

- 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.

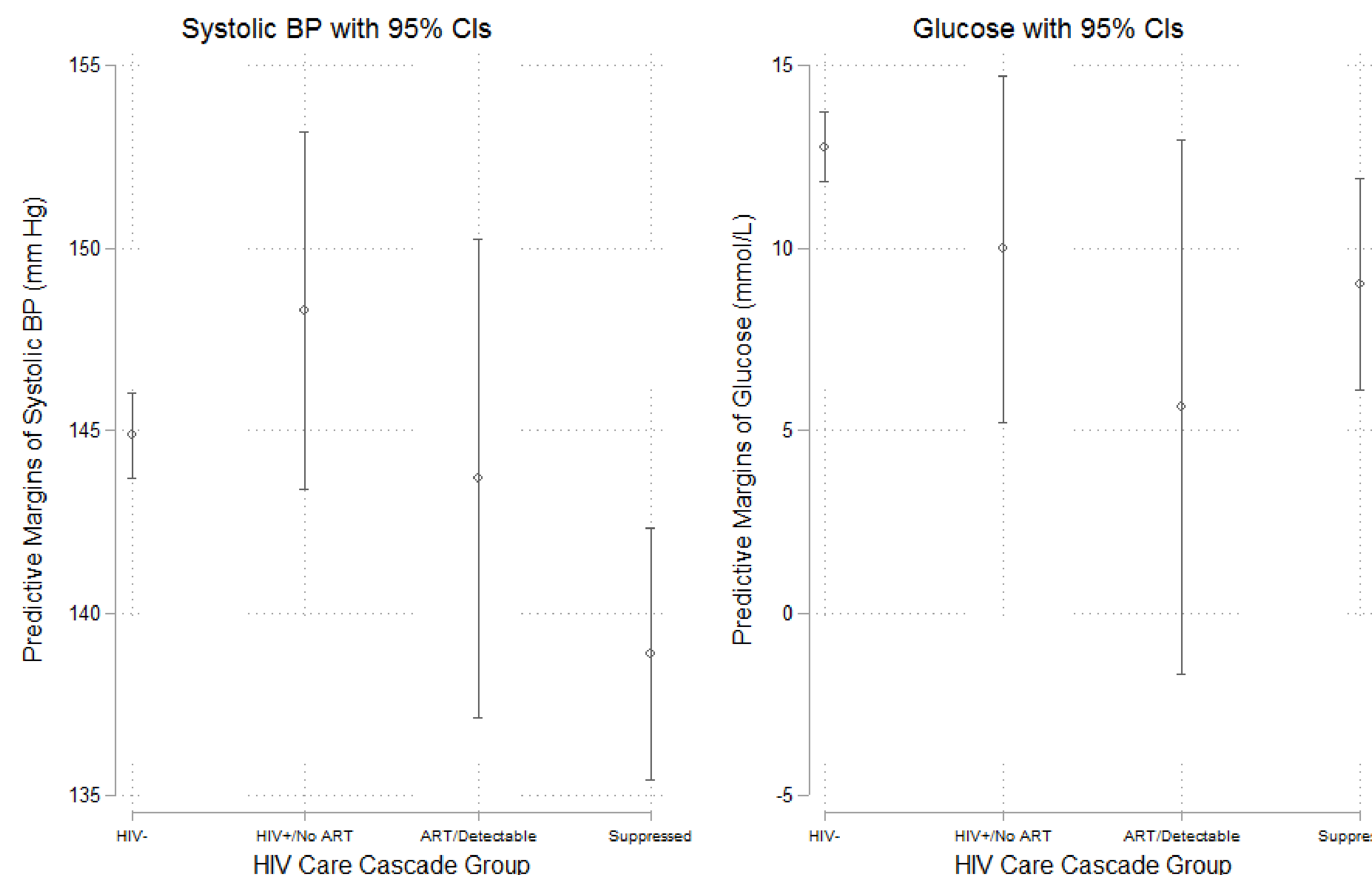
Stage in the HIV care cascade was defined as follows: HIV-negative, HIV/No ART, ART/Detectable VL, ART/Suppressed VL

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.

Table 1. Demographic & health characteristics by stage in the HIV care cascade

	HIV-negative	HIV+/No ART	ART/Detected VL	ART/Suppressed VL	p
Total	3,512	301	183	551	---
Age (mean)	63.6	54.4	55.6	55.9	<0.001
Sex (%)	54.0	55.8	51.4	54.0	0.823
Education					<0.001
<1 Year	47.4	43.3	38.7	41.1	
1-5 Years	35.0	30.0	34.3	37.1	
6-7 Years	9.8	17.3	16.0	14.4	
8+ Years	7.8	9.4	11.0	7.4	
BMI Class (%)					<0.001
Underweight	4.8	7.2	9.7	6.9	
Normal	34.0	44.3	46.2	44.0	
Overweight	29.2	23.4	25.0	27.2	
Obese	32.0	25.0	18.2	21.9	
Hypertension* (%)	68.4	47.7	45.9	46.4	<0.001
Diabetes** (%)	12.9	7.1	6.0	8.8	<0.001

Figure 1. Predictive margins of systolic blood pressure and glucose by HIV care cascade group in HAALSI



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

ACKNOWLEDGEMENTS

- The HAALSI Study is funded by the National Institute on Aging (P01 AG041710). The HAALSI Study is nested within the Agincourt HDSS, with funding from the Wellcome Trust (058893/A/99A; 069683/Z/02/Z; 085477/Z/08/Z), University of the Witwatersrand and Medical Research Council, South Africa.