

# Comparing hypertension prevalence by HIV status in sub-Saharan African adults: systematic review and meta-analyses

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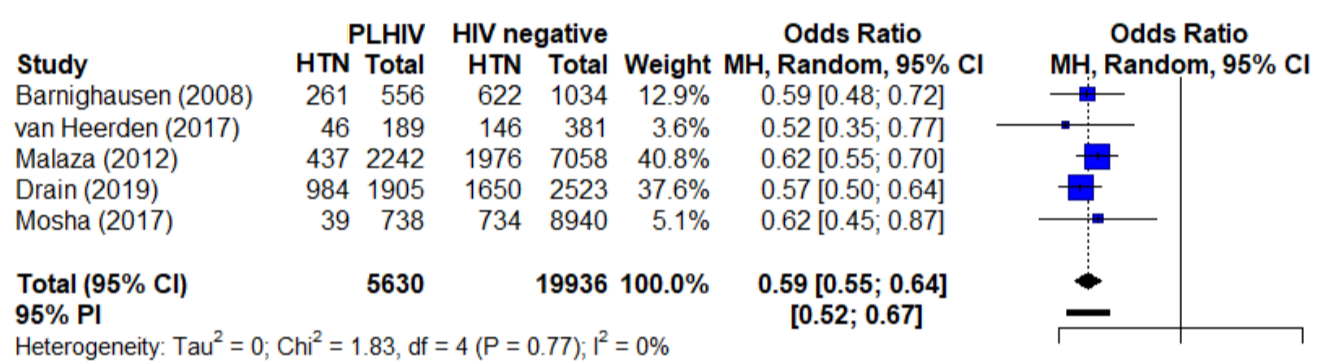
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## Background

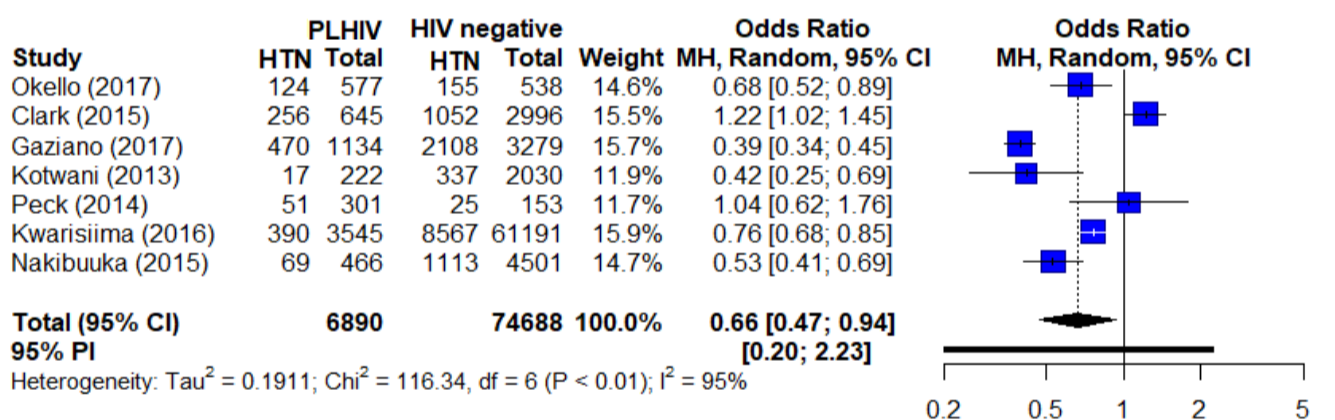
- People Living with HIV (PLHIV) may experience a higher hypertension prevalence than HIV negative people.<sup>1</sup>
- However, the evidence for this is largely from high income countries.<sup>2,3</sup>
- **We examined the hypothesis that living with HIV is associated with higher hypertension prevalence among adults in sub-Saharan Africa.**

## Methods

- A systematic review of MEDLINE, EMBASE, Global Health, CDSR, CENTRAL and African Journals Online was performed.
- We included cross-sectional studies assessing hypertension prevalence in PLHIV and HIV negative people >15 years, in sub-Saharan Africa.
- Only studies defining hypertension as “blood pressure ≥140/90mmHg”, or as “blood pressure ≥140/90mmHg and/or use of antihypertensives”, were considered.
- Random effects models were used to pool odds ratios for prevalent hypertension in two meta-analyses.



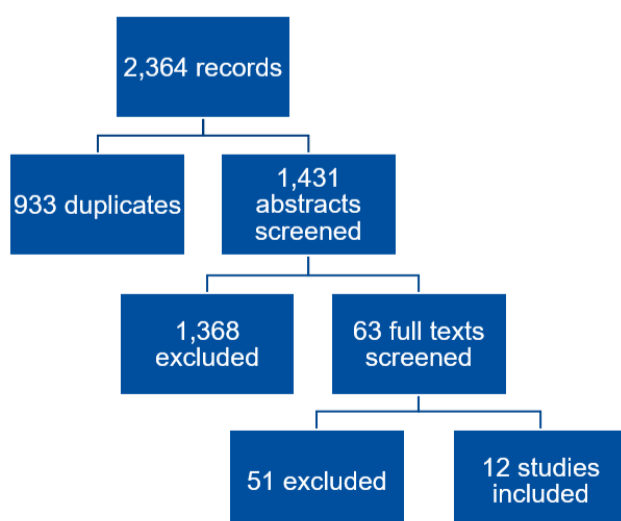
**Figure 2.** Relative prevalence of hypertension by HIV status, using studies which defined hypertension as blood pressure ≥140/90mmHg. Odds ratios less than one indicate lower prevalence in PLHIV. PLHIV: People Living With HIV. HTN: Hypertension. MH: Mantel-Haenszel. CI: Confidence Interval. PI: Prediction Interval. DF: Degrees of Freedom.



**Figure 3.** Relative prevalence of hypertension by HIV status, using studies which defined hypertension as blood pressure ≥140/90mmHg and/or use of antihypertensives. Odds ratios less than one indicate lower prevalence in PLHIV. HTN: Hypertension. MH: Mantel-Haenszel. CI: Confidence Interval. PI: Prediction Interval. DF: Degrees of Freedom.

## Results

- We found 2,364 reports, of which 12 were selected for analysis (Fig. 1).



**Figure 1.** Study selection.

- The 12 studies collected data on 107,425 participants between 2003 and 2015, in South Africa, Tanzania and Uganda.
- Risk of bias was low to moderate, with participant selection a key source of bias.
- Hypertension prevalence was 5.3%-51.7% among PLHIV and 8.2%-65.4% in HIV negative individuals.
- The odds of prevalent hypertension were 41% lower among PLHIV than HIV negative individuals when using the ≥140/90mmHg definition (Fig. 2) and 34% lower when using the definition that included medication (Fig. 3).

## Conclusions

- **Hypertension prevalence was lower among PLHIV than HIV negative people in sub-Saharan Africa.**
- Robust studies comparing hypertension prevalence by HIV status in sub-Saharan Africa were scarce, suggesting more primary studies are required.
- These findings should be considered in decisions around implementing integrated HIV-hypertension services.

### References

- <sup>1</sup>van Zoest RA, van den Born B-JH, Reiss P. Hypertension in people living with HIV. *Curr Opin HIV AIDS*. 2017;12(6):513-522.
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- <sup>3</sup>van Zoest RA, Wit FW, Kooij KW, et al. Higher Prevalence of Hypertension in HIV-1-Infected Patients on Combination Antiretroviral Therapy Is Associated With Changes in Body Composition and Prior Stavudine Exposure. *Clin Infect Dis*. 2016;63(2):205-213.