

# SYSTEMATIC REVIEW OF UPTAKE OF ANTIRETROVIRAL THERAPY IN INTEGRATED HIV/TB TREATMENT PROGRAMS IN SUB-SAHARAN AFRICA

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## Introduction

- Programs that merge management of HIV and TB aim to improve HIV/TB co-infected patients' access to comprehensive treatment.
- However, several reports from sub-Saharan Africa (SSA) indicate suboptimal uptake of antiretroviral therapy (ART) even after integration of HIV and TB treatment services.

## Objectives

1. To estimate uptake of ART among adults in integrated HIV/TB treatment programs in SSA
2. To assess the barriers of ART uptake in these programs
3. To assess the enablers of ART uptake in these programs

## Methods

- **Systematic review** of studies published from March 2004 through July 2019 in Medline, Embase, Cochrane, Popline, Scopus, Global Health and Africa journal online.
- **Study selection:** qualitative, quantitative and mixed-methods studies on integrated HIV/TB treatment, published in English with data from providers and/or co-infected patients on at least one of a) ART uptake b) barriers to ART uptake c) enablers of ART uptake
- **Quality assessment:** Critical Appraisal Skills Programme for qualitative studies, criteria of the National Heart, Lung, and Blood Institute for quantitative studies and both tools for mixed methods studies.
- **Data analysis and synthesis:** random-effects meta-analysis for pooled estimates of ART uptake and thematic approach for barriers and enablers.

## Results

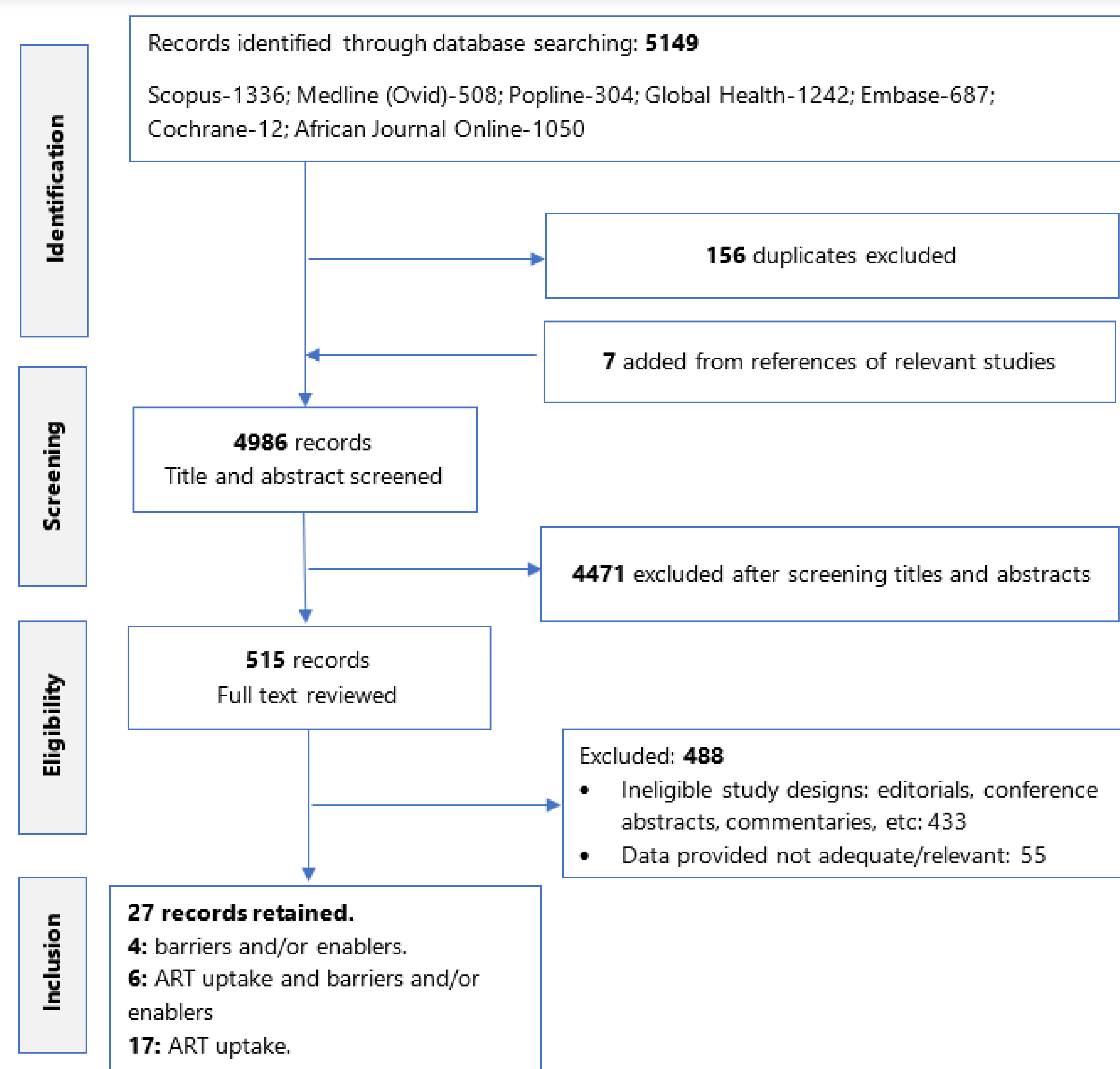


Figure 1: PRISMA flow chart

### Study characteristics

- 27 studies retained for analysis
- 23/27 estimated ART uptake and involved 21877 co-infected patients. Thirteen (14/23) were from East Africa, 4/23 from Southern Africa, 3/23 from Central Africa and 2/23 from West Africa.
- 10/27 had data on barriers to and/or enablers of uptake of ART and involved 3514 participants and 12 focus group discussions. Six (6/10) were from East Africa, 2/10 from South Africa, 1/10 in West Africa and 1/10 in Central Africa.

### Quality of studies

- Nineteen of 23 (19/23) studies with estimates of ART uptake were of moderate quality
- 7/10 studies that assessed barriers to and/or enablers of ART uptake used qualitative methods to assess the study outcomes and three quarters of these studies were of moderate quality

### ART uptake

- Pooled ART uptake: 53 % (95% CI: 42%, 63%;  $I^2 = 99.71\%$ ,  $p < 0.001$ ).
- Statistically significant subgroup effects after subgroup analyses by region, study design, guideline on collaborative HIV/TB activities, and sample size.

## Results (continued)

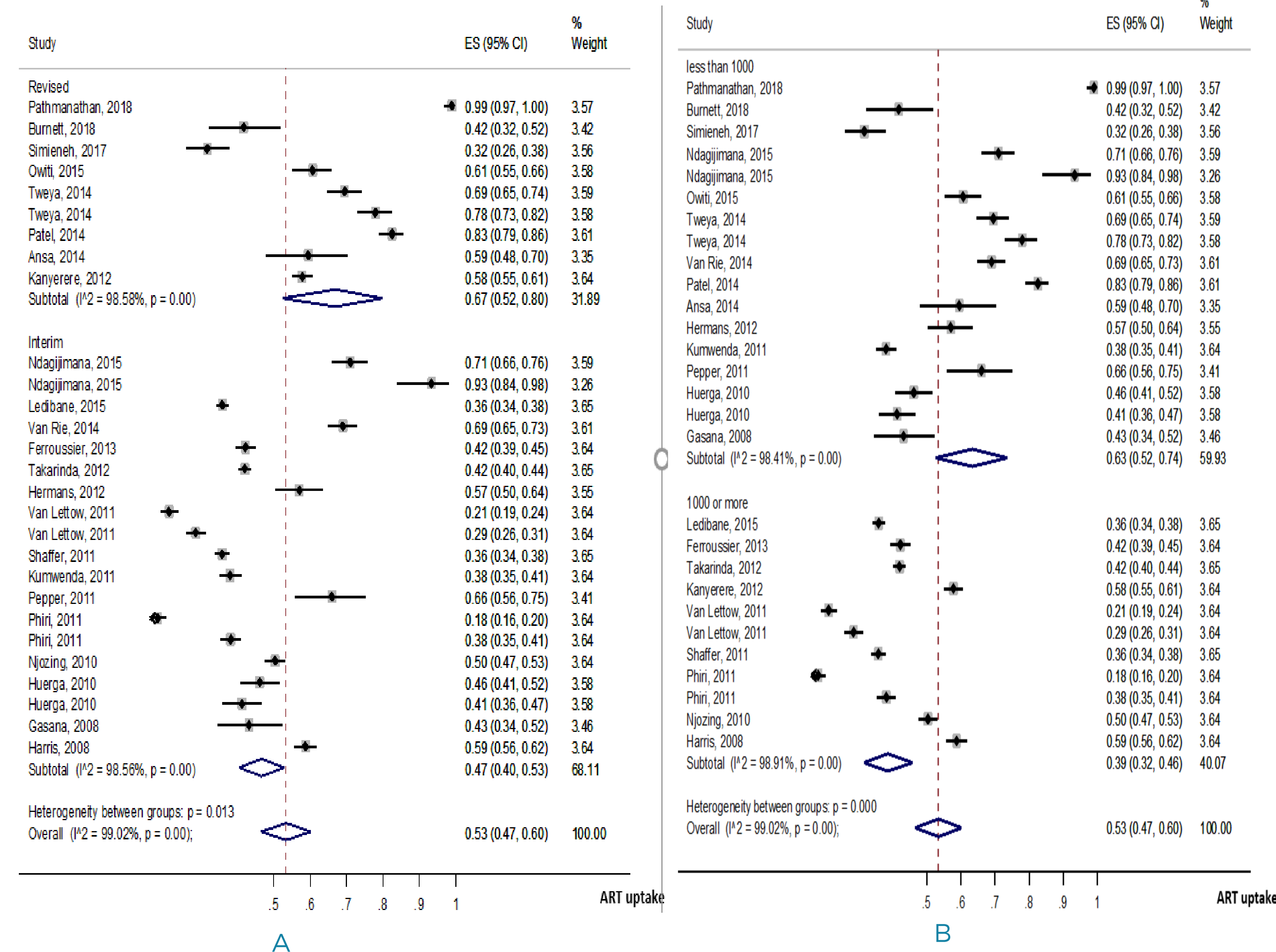


Figure 2: Subgroup analyses of ART uptake: A. Year of study (guideline) and B. Sample size

## Barriers to uptake of ART

- Themes that emerged from studies with data on barriers were socioeconomic and individual level, health system, clinical, and others.
- The most frequent barriers under the socioeconomic and individual level theme were stigma (4); poverty/low income (2) and younger age group (2).
- The most common subthemes under the health system-related barriers were limited staff capacity (4); shortages in medical supplies (3); lack of infrastructure for the provision of integrated treatment services (2); and poor adherence to or lack of treatment guidelines (2).
- Clinical challenges were essentially drug-related and included intolerance to anti-TB drugs, providers' fear of drug toxicity; and contraindications to one or more antiretrovirals.

## Enablers of uptake of ART

- Health system and community level factors were the principal enablers of uptake.
- The main health system-related enabling factors were re-enforcement of procurement, supply, and dispensation chain (5); convenience and accessibility of treatment services (3); and strong staff capacity (2).
- At the community-level, availability of psychosocial support systems (4) were the principal facilitators of ART uptake.

## Discussion

- ART uptake of 53% indicates a crucial need to review strategies to improve ART uptake within integrated HIV/TB programs in SSA.
- Potential to increase ART uptake among co-infected patients in SSA through these programs will remain elusive unless a plethora of barriers are addressed using effective interventions. By synthesizing evidence on a broad range of factors that determine uptake of ART, this review has highlighted avenues through which HIV treatment outcomes in integrated treatment of HIV and TB in SSA could be optimised.
- Despite suboptimal pooled ART uptake and apparent delays in implementing new policies, the review suggests an overall net improvement in ART uptake since 2012 when new WHO guidelines on collaborative HIV and TB services were issued.
- Most studies in this review were retrospective and subgroup analysis showed that pooled ART uptake was highest for retrospective studies. However, these studies tended to rely on routine programmatic data, and the quality of such data in low-income settings is often questionable.
- Studies employing robust methods on a largescale to assess the effectiveness of integrated treatment programmes in increasing treatment outcomes among co-infected patients in SSA are clearly needed.

## Conclusion

- Programs integrating treatment of TB and HIV in SSA do not, in general, achieve high uptake of ART but we observe a net improvement in uptake in recent studies
- Recurrence of specific modifiable system-level and patient-level factors in the literature reveals key intervention points to improve ART uptake in these programs.

## Acknowledgements

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