

DEBATE

# Comment on ‘Changing relationships between HIV prevalence and circumcision in Lesotho’, and ‘Age-incidence and prevalence of HIV among intact and circumcised men: an analysis of PHIA surveys in Southern Africa’

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## Abstract

Two articles by Garenne (2023a,b) argue that voluntary medical male circumcision does not reduce human immunodeficiency virus transmission in Africa. Here we point out key evidence and analytical flaws that call into question this conclusion.

**Keywords:** Human immunodeficiency virus/acquired immunodeficiency syndrome; circumcision; Southern Africa; reproductive health; voluntary medical male circumcision

## Contrary findings ignored

In Garenne (2023b), six countries with circumcision ‘prevalence’ of 12.7–71.2% were studied. However, these prevalence figures incorrectly conflate voluntary medical male circumcision (VMMC) with traditional male circumcision (TMC), which can increase risk of human immunodeficiency virus (HIV) infection through use of unsterilised contaminated instruments on multiple youths, some already infected (Brewer *et al.* 2007, 2009; Ndiwane 2008). TMC of 16–20-year-olds is common in Lesotho where VMMC, but not TMC, is associated with HIV risk reduction (Coburn *et al.* 2013; Carrasco *et al.* 2020; Makatjane *et al.* 2016). These observations render the study’s finding of no association questionable.

## Confounding

These studies ignore confounding from antiretroviral therapy (ART). ART was rolled out alongside VMMC in sub-Saharan Africa concurrently with VMMC. While ART can reduce HIV infection, it increases HIV prevalence because people who previously would have died from acquired immunodeficiency syndrome-related illnesses now live with HIV (Shafer *et al.* 2013; Zaidi *et al.* 2013). The articles should have documented incidence. A modelling study found VMMC was the third most effective intervention after ART and condoms (Johnson *et al.* 2022). Furthermore, uptake of VMMC has been high in young adolescent boys who are not yet sexually active (UNAIDS and WHO 2021), leading to a delay between VMMC and reduction in new HIV cases.

### Data limitations

The primary data sources use self-reported circumcision status. Self-reporting is unreliable. This could affect any study using such data, but it seems to be a particular issue with Lesotho, which is a country Garenne focused on in the first paper we criticise. A study in Lesotho found that only half of men claiming to be circumcised actually were, and a further 26.6% were only partially circumcised (Thomas *et al.* 2011). Partial TMC is also common in Malawi (Renne *et al.* 2016).

### Selective and misleading literature citations

The studies ‘cherry-pick’ often dated opinion pieces that fail to consider some of the issues described above. The articles ignore reviews of >30 studies linking VMMC to HIV risk reduction (Siegfried *et al.* 2003; Addanki *et al.* 2008). The studies also fail to point out that most subjects in Connolly *et al.* (2008) had TMC, not VMMC. And findings in Rosenberg *et al.* (2018) are attributed to self-selection, not ineffectiveness of VMMC.

Van Howe’s meta-regression analyses in 2015 are cited (Van Howe 2015), but not the detailed critique undermining his statistics (Morris *et al.* 2018). Van Howe’s reply in 2018 (Van Howe 2018) was rebutted (Morris *et al.* 2017). A meta-analysis (Van Howe 1999) was discredited (Moses *et al.* 1999; O’Farrell & Egger 2000) and became a textbook example of how not to do a meta-analysis (Borenstein *et al.* 2009). Yet the articles cite it (Garenne & Matthews 2019; Garenne 2023a,b). All other meta-analyses confirm VMMC is effective against female-to-male HIV transmission (O’Farrell & Egger 2000; Weiss *et al.* 2000; Byakika-Tusiime, 2008; Lei *et al.* 2015; Sharma *et al.* 2018; Farley *et al.* 2020) but these are ignored.

### Conclusion

These recent articles on VMMC and HIV are problematic. The issues described above are well-known to researchers in the field but are ignored. Unfortunately, the articles are now being cited (Garenne 2023c) to support an opposition to VMMC. Most authorities find that VMMC is biologically- and cost-effective against HIV infection in Africa (Farley *et al.* 2020; Bershteyn *et al.* 2022; Bansi-Matharu *et al.* 2023).

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**Ethical standard.** Not applicable.

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