HIGH INDIVIDUAL- AND COMMUNITY-LEVEL VARIABILITY IN MALE CIRCUMCISION COVERAGE IN UGANDA

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BACKGROUND

- Randomized trials have shown that voluntary medical male circumcision (VMMC) substantially reduces risk of HIV acquisition among heterosexual African men by more than 50%.
- Since 2007, the United States President's Emergency Plan for AIDS Relief (PEPFAR) has actively supported VMMC programming in Africa, including in Uganda.
- Identifying specific populations and geographic areas with low VMMC coverage for targeted service outreach in high HIV burden African settings may help prioritize limited resources and achieve HIV epidemic control.

METHODS

- We used cross-sectional data collected between June 2018 and November 2020 from the **Rakai Community Cohort Study (RCCS),** a population-based HIV surveillance cohort in four districts in southern Uganda (**Fig. 1**), to identify gaps in **VMMC coverage among non-Muslim HIV seronegative men**, who are not typically traditionally circumcised as part of routine religious practice.
- **Individual and community-level factors associated with VMMC coverage were assessed** across 40 communities, including four hyperendemic Lake Victoria fishing communities (community HIV seroprevalence ~40%).
  - Individual factors: religion, age, education level, marital status, and number of sexual partners in the past year
  - Community factors: community type (rural agrarian, semi-urban trading, fishing), % of population <30 years, % with ≤ primary education, % Muslim, average distance to health facility (level III/IV), average distance of households to a main road, HIV seroprevalence
- Hierarchical multivariable Poisson regression with community random effects was used to estimate individual- and community-level associations with MC coverage.

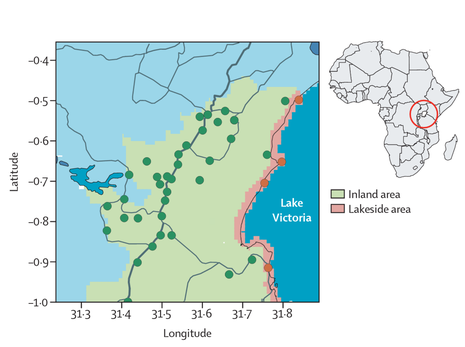


Fig. 1. RCCS surveillance area in southern Uganda

Individual and community VMMC coverage varies significantly among non-Muslim HIV seronegative men in southern Uganda.

Older age, marriage, and lower education levels correlate with reduced individual VMMC coverage.

Communities with higher HIV seroprevalence, fewer Muslims, and greater distance from medical facilities and main roads exhibit lower VMMC coverage.

RESULTS

- Of the 8,757 men in the RCCS cohort, 86.4% (n=7,570) identified as non-Muslim, of whom 85.2% (**n=6,448**) tested HIV-seronegative.
- 61.7% (3978/6448) non-Muslim HIV-seronegative men self-reported being circumcised.
- At the individual-level, being circumcised was statistically significantly associated with younger age, higher education status, and not being married (Figure 2).
- **Median community coverage of VMMC was 66% ranging from 32% to 88%** across communities (**Fig. 3**).
- VMMC coverage was lower in communities with a greater percentage of people living with HIV and in communities with greater average household distance to the main road and health facilities (**Fig. 4**).
- VMMC coverage among non-Muslim men was significantly higher in communities with a greater proportion of Muslims (**Fig. 4**).

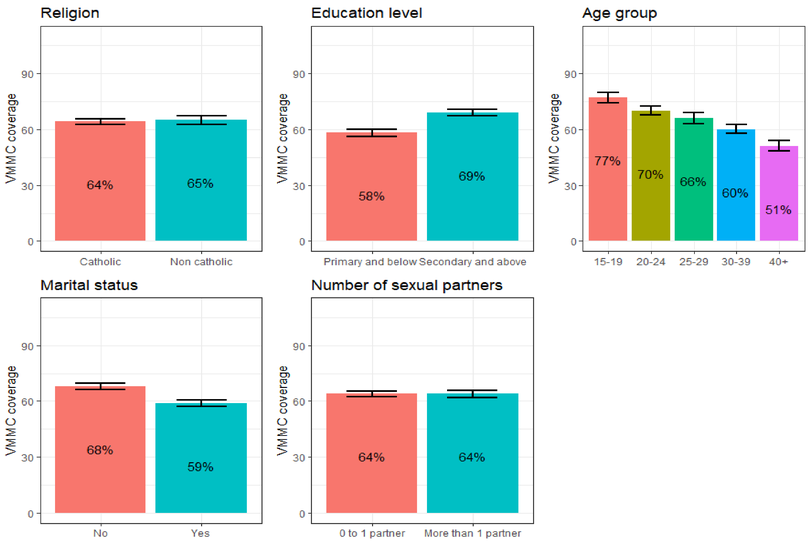


Fig. 2. VMMC coverage among non-Muslim HIV seronegative male participants in the RCCS stratified by individual-level demographic and sexual behavior factors, 2018-2020

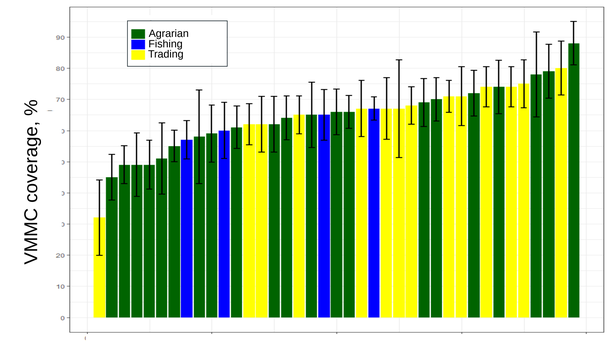


Fig. 3. VMMC coverage among non-Muslim HIV seronegative male participants across 40 rural agrarian (green), semi-urban trading (yellow), and Lake Victoria fishing (blue) communities, 2018-2020

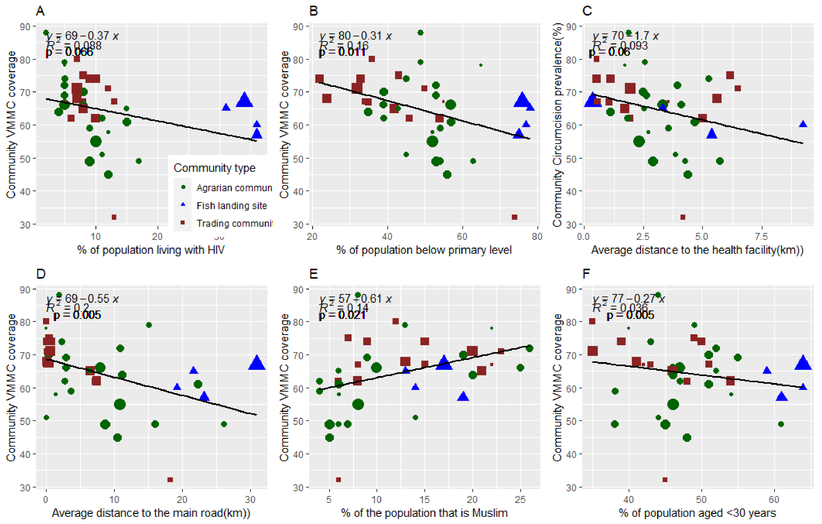


Fig. 4. Associations between community-level factors and community VMMC coverage among non-Muslim HIV seronegative men residing in 40 RCCS study communities, 2018-2020; A) HIV seroprevalence B) % with ≤ primary education, C) average distance to health facility, D) average distance to main road, E) % Muslim, F) % <30 years

CONCLUSIONS

- We observed high individual- and community-level variation in VMMC coverage among non-Muslim HIV-seronegative men in southern Uganda.
- Prioritizing VMMC services in communities with higher HIV burden and limited health facility access may improve VMMC coverage.

ADDITIONAL KEY INFORMATION

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"The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centres for Disease Control and Prevention"

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