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School-based HIV Prevention for Adolescent Mothers: Population Data from Eight African Countries

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BACKGROUND

Adolescent girls in East and Southern Africa (ESA) experience some of the world's highest HIV incidence, with adolescent mothers (AMs) representing a particularly vulnerable sub-population. School-based HIV prevention programs can reduce HIV risk by increasing HIV knowledge, promoting safer sexual behaviors, and supporting access to HIV prevention services, including PrEP. However, our prior research indicates that AMs (even those in school) are less likely than other adolescent girls to access such programs. We examined whether increasing exposure to school-based HIV prevention programs was associated with reduced condomless sex and greater PrEP interest among AMs in eight countries in ESA.

METHODS

We analyzed pooled data from the Population-based HIV Impact Assessment surveys (2019–2022) in Eswatini, Lesotho, Malawi, Mozambique, Tanzania, Uganda, Zambia, and Zimbabwe. The analytic sample included adolescent mothers aged 15-19 who were pregnant or had at least one child. We applied g-computation with multiple imputation to estimate the population intervention effects of expanding exposure to school-based HIV prevention programming from current levels (9%) to varying increased levels (25-100%), adjusting for sociodemographic covariates (**Figure 1**).

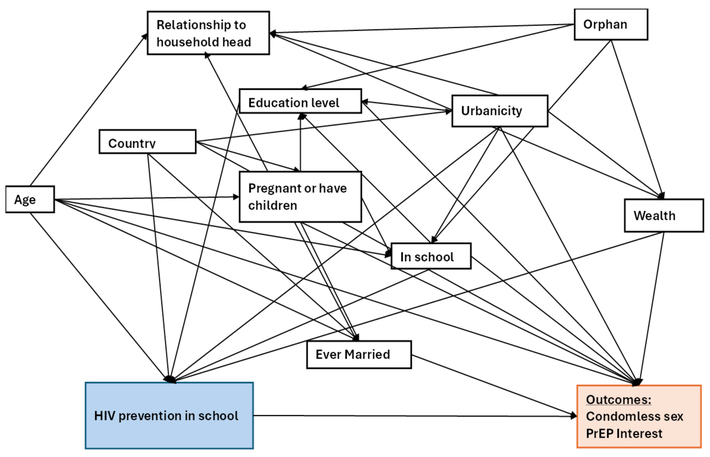


Figure 1. Directed acyclic graph (DAG) depicting exposure-outcome relationships and sociodemographic covariates.

Increasing exposure to school-based HIV prevention programs may **reduce condomless sex** among adolescent mothers aged 15-19 in East and Southern Africa.

RESULTS

A total of 2,810 adolescent mothers were included in the pooled analysis. Roughly 10% of AMs reported receiving school-based HIV prevention programs in the past year. Increasing exposure to these programs was associated with a significant and increasingly larger reduction in reported condomless sex overall (**Figure 2**), with no evidence of statistical heterogeneity by country (*P=0.26*). In contrast, increasing exposure to school-based HIV prevention programs had minimal and non-significant associations with PrEP interest in the pooled analysis. However, country-specific analyses revealed heterogeneity (*P=0.05*), with increases in PrEP interest observed in Lesotho, Malawi, Tanzania, and Zimbabwe (data not shown).

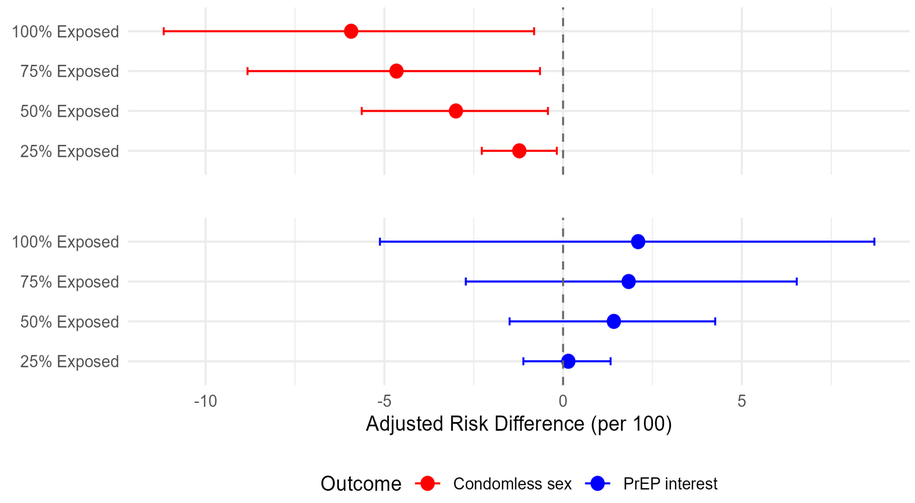


Figure 2. Effect estimates of increasing exposure to school-based HIV prevention programs from current level (9%) on condomless sex and PrEP interest among adolescent mothers in East and Southern Africa

CONCLUSIONS

Increasing exposure to school-based HIV prevention programs, which are relatively low-touch and inexpensive (important characteristics in the current climate), could meaningfully reduce condomless sex for adolescent mothers in ESA, suggesting important benefits for HIV risk reduction in this vulnerable sub-population. Effects on PrEP interest were less consistent, which might be explained by variation in PrEP availability and a high baseline interest in PrEP. Together, these findings underscore the value of school-based programs as a scalable intervention, while also pointing to the importance of tailoring approaches across country contexts.

ADDITIONAL KEY INFORMATION

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Ethics approval: The Drexel Ethical Review Board approved all study procedures. PHIA protocols and data collection tools were approved by in-country ethics committees, the institutional review boards at Columbia University Medical Center, and the CDC.

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PLAIN LANGUAGE SUMMARY

Adolescent mothers in eight African countries were less likely to report unprotected sex in the past year when they received HIV prevention programs at school, suggesting that these programs could be scaled to meaningfully reduce HIV risk. These programs did not consistently increase interest in HIV prevention medication (PrEP) overall, but they did boost interest in some individual countries, highlighting the need to pair education with access to services and tailoring approaches to country context.