Modelling the association between intimate partner violence and daily use of HIV treatment among ever-married women in Malawi.

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ABSTRACT

Background: HIV treatment prevents ill-health and death, and was also found to effectively prevent mother-to-child transmission and sexual transmission of HIV in serodiscordant couples. According to a systematic review, intimate partner violence (IPV) is associated with poorer HIV treatment uptake, adherence and outcomes. Yet, studies from sub-Saharan Africa, where the majority of HIV-positive people live, are scarce, and findings inconsistent.

Objective: To assess associations between IPV (including emotional, physical and sexual violence, and marital control) and non-use of antiretroviral medicines (ARV) among ever-married HIV-positive women of reproductive age (15-49 years) in Malawi, and to model the association of IPV with daily use of ARVs in order to estimate the potential benefits of integrating IPV interventions in the HIV service cascade.

Design: For this purpose, we analysed data of the 2010 Malawi Demographic and Health Survey (MDHS), and developed HIV transmission models.

Methods: We selected a sample of ever-married women at reproductive age whose HIV-positive status was confirmed by HIV serotest, and who completed the domestic violence questionnaire. We estimated prevalence of IPV and non-use of ARVs daily. We described differences in self-reported daily ARV use and calculated odds ratios to estimate risk of non-use of ARVs daily. We developed HIV transmission models to assess the potential benefits of mitigating IPV and marital control on reducing HIV prevalence.

Results: Out of the 23,020 that were interviewed for the 2010 MDHS, we sampled 713 women that met our inclusion criteria, and of those 282 cases included sufficient information for data analysis. We found that one in three women experienced emotional, physical and/or sexual IPV, and that two in three women reported marital control. The majority of women reported daily use of ARVs (63%). Self-reported non-use of ARVs daily was found to be more common among young women (15-24 years), and women from rural areas and poorest wealth quintile.

Although the proportion of women who reported not taking ARVs daily was higher among women exposed to IPV and/or marital control compared with unexposed, we did not find statistically significant associations.

As a scenario for mathematical modelling, we chose exposure to emotional IPV among ever-married women of reproductive age in Southern Malawi where HIV prevalence among adults is particularly high (15%). According to model predictions, perfectly mitigating emotional IPV in Southern Malawi would lead to a small reduction in HIV prevalence when applying a homogeneous model, but result in no noticeable reduction in HIV prevalence using a heterogeneous model, whose projections appear to be more reliable.

Conclusions: While exposure to IPV and marital control was found to be common among Malawian women, we did not find statistically significant associations between IPV and/or marital control with non-use of ARVs daily. More and better equipped research is needed to investigate and explain the complex, and so far inconsistent, relationships between IPV (including marital control) and ARV use in sub-Saharan Africa.

In addition, modelling HIV transmission among adults in Southern Malawi suggests that the impact of mitigating emotional IPV among ever-married women towards reducing HIV prevalence will be negligible due to heterogeneous risk distribution. While integrating IPV interventions in the HIV service cascade could help improve health of affected women, its impact on reducing HIV transmission will be minimal. Model comparison indicates that reducing heterogeneity and instead assuming that populations are homogeneous bears the risk of over-optimistic model predictions.