

Age-disparate relationships and HIV transmission: not as simple as it may seem

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In South Africa the concept of “Blessers” (formerly known as “sugar-daddies”) has been in the spotlight again as ads from older men looking for “blessees” – young women to have sex with – have been posted on social media platforms. Age-disparate (the term we use in research) and transactional relationships are not new phenomena by any means. In many places throughout Southern Africa they are normalized and young women engage in them for a wide variety of reasons. Obtaining financial support is one of the most common reasons cited, but young women also tend to associate older men with safety, emotional stability and maturity compared to age-similar partners (1,2). Despite the many benefits young women claim to receive from these relationships, they have often been discouraged by politicians who see these relationships as being partially responsible for the HIV and teenage pregnancy epidemics in Southern Africa.

Interventions to curb age-disparate relationships (ADR) are ongoing in spite of conflicting evidence that ADR are a risk factor for HIV transmission (for examples see (3–7)). There is a real need to explore the prevalence of ADR and understand what they mean for HIV transmission. Rushing to intervene with poorly conceived interventions that stigmatize ADR, and which are not based upon scientific evidence nor are locally appropriate, must be avoided. We must first understand and describe these relationships; second, establish a causal relationship with HIV; and only then make efforts to formulate interventions which are sensitive, appropriate, and feasible according to the populations most affected by HIV in Southern Africa.

Looking at a non-linear relationship between age differences and HIV

My colleagues and I at SACEMA recently published a paper that explores those first two objectives in a population of 1,922 adult men and women living in Likoma Island, Malawi who participated in a socio-centric sexual behaviour study (8). We examined the age-mixing pattern (how people in a given population tend to choose partners with regards to age) and found that for each year increase in male participant age, the average age difference with their partners increased by 0.26 years. This contrasts with the women who, on average, always chose partners who were

approximately five years older than them, regardless of their own age. Women in the study also had greater within-individual variation in partner ages compared to men. This coupled with our additional findings that being married and never using a condom during sex were associated with larger age differences in women means that in this population there would have been many opportunities for women to acquire HIV from their older partners and then transmit to younger men.

By examining only those findings, one can already see that it is theoretically possible for HIV to be sustained in a population by transmitting the virus between age groups. However, the question remains whether we see an actual association between age differences in relationships and individual-level HIV prevalence? When using “run-of-the-mill” generalized linear models, which researchers typically use to establish a relationship between age-disparity and HIV, we observed that men who were more than five years *younger* than their partners had 5.39 times higher odds of being HIV-infected than men 0–4 years older than their partners. This finding was unclear and had large confidence intervals. Among women, no clear relationship was observed between any category of age differences and HIV prevalence. However, when we employed more flexible models that allowed for the possibility of a non-linear relationship between age differences and HIV, the picture changed. We found that women may have some increased risk of being HIV positive if their male partners are older than them by approximately 2–12 years, but then may be slightly protected if their partners are more than 12 years older.

Our study indicates that the way in which we analyse age differences may be overly simplistic and require more flexible models to determine the real and complex associations that age differences in relationships have to HIV. An important next step in this line of investigation may be to employ similar analytical techniques to evaluate how contrasting age difference measures – including proxies for within-individual variation in partner ages – relate to HIV incidence in either large cohorts from different settings or simulation studies modelled after real-world contexts.

Importantly, researchers will need to acknowledge that women may play a critical role in HIV transmission pathways, and studying this may be

the key to unlocking the appropriate interventions that target the correct risk groups. Oversimplified prescriptions for young women to stay away from all older men by well-intentioned policy makers may miss the mark and have negative consequences for some young girls who are actually in respectful and protective relationships with older men.

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