

Pre-exposure prophylaxis for HIV prevention in East and Southern Africa

Ran van der Wal, MSc, LLM, David Loutfi, MSc

ABSTRACT

Pre-exposure prophylaxis (PrEP) has proven to be highly effective in preventing HIV in uninfected persons when properly adhered to. East and Southern African countries that suffer from high HIV prevalence and incidence are increasingly adopting PrEP as an HIV prevention strategy for their high-risk populations, including for young women. Structural factors such as poverty, lack of education, and gender-based violence may compromise their PrEP uptake and adherence, however. Choice-disabled young women are most at risk of HIV infection and least able to apply HIV prevention choices. For successful rollout of this biomedical solution, we need structural interventions that address these underlying drivers of the HIV epidemic.

KEY WORDS: HIV; prevention; pre-exposure prophylaxis; women; Africa

La traduction du résumé se trouve à la fin de l'article.

Can J Public Health 2017;108(5-6):e643–e645
doi: 10.17269/CJPH.108.6254

Hailed as a game changer for HIV prevention, oral pre-exposure prophylaxis (PrEP) prevention strategies have been approved by many countries in East and Southern Africa and several of these countries have started implementing PrEP programs. This seems to be good news for young women in this region, as they are at high risk of HIV infection. Successful rollout of PrEP may however be hampered by choice disability that affects many young women in East and Southern Africa. Coined by Andersson in 2006, “*choice disability*” refers to a lack of power to act on the ABCDs of HIV prevention (abstinence, be faithful, condom use, and delayed sexual debut) due to structural factors, such as poverty, lack of education, socio-cultural and gender norms.^{1,2} In this commentary, we examine how choice disability may affect young women’s PrEP uptake and adherence and what solutions may offer hope.

PrEP’s promise

PrEP contains an antiretroviral medication (tenofovir disoproxil fumarate-TDF) that blocks HIV infection in uninfected individuals. After demonstrating its prevention benefits among men who have sex with men (MSM) in 2010, a recent meta-analysis concluded that oral PrEP containing TDF was protective across populations and highly effective if adhered to properly.³ Subsequently, in September 2015, the World Health Organization (WHO) recommended oral PrEP as part of a combination HIV prevention approach for all population groups at substantial risk. This includes young women (15–24 years) in East and Southern Africa, a region characterized by a generalized HIV epidemic where the overall HIV incidence remains high; HIV prevalence among young women is higher than in same-age men; and young women’s HIV infection rate is double the rate of their male counterparts.⁴

Although efficacy trials with older MSM and sero-discordant heterosexual couples showed high levels of PrEP adherence,^{5,6} PrEP

uptake and adherence among HIV-negative young women in East and Southern Africa has been more challenging. Often compared with contraception, PrEP’s promise is in its agency, granting young women the autonomy to protect themselves from HIV infection without male collaboration.⁷ How realistic is it to rely on agency when young women are choice disabled? Structural factors, such as gender-based violence, poverty, lack of education, and stigma, may lead to choice disability, which could undermine uptake and adherence to PrEP.

Gender-based violence

Socio-cultural and gender norms contribute to young women’s lack of decision-making power, including sexual decision-making power. Gender inequity norms are strongly associated with sexual and gender-based violence and risky sexual behaviours. The 2013 Botswana AIDS Impact Survey (BAIS IV) reported that 24.8% of early sexual debuts (<15 years) in females had been non-consensual.⁸ Not only can sexual violence lead to direct HIV infection, it increases indirect HIV risk as well. Survivors of childhood sexual abuse are more likely to be HIV positive and to engage in high-risk sexual behaviours such as unprotected sex, transactional sex, and concurrent sexual partnerships. Coerced sexual debuts are associated with a reduced sense of self-worth or feelings of deserving victimhood, which in turn may undermine the agency necessary for PrEP uptake and adherence.⁹

Author Affiliations

Department of Family Medicine, McGill University, Montreal, QC

Correspondence: Ran van der Wal, Department of Family Medicine, McGill University, 5858 Ch de la Côte des Neiges, Montreal, QC H3S 1Z1, Tel: 514-398-7375, E-mail: Ran.vandervwal@mail.mcgill.ca

Acknowledgements: We thank Neil Andersson for his review of this manuscript.

Funding: RW is funded by the Fonds de recherche du Québec – Santé (FRQS) and the Lloyd Carr-Harris Foundation; DL is funded by the FRQS.

Conflict of Interest: None to declare.

Additionally, the BAIS IV Survey showed a high prevalence of intimate partner violence (IPV): 29% of women experienced IPV in the previous 12 months and 62% in their lifetime.⁸ This is in line with other lifetime prevalence estimates in sub-Saharan Africa that range from 36%–71%. IPV includes physical, sexual and verbal violence and is associated with an increased HIV risk of approximately 50%.¹⁰ It has been argued that PrEP can be used independently of partners and would allow women to protect themselves from HIV in situations where they suffer from IPV or when their partners refuse to use protection.⁷ However, a systematic literature review reported support from peers and partners to be an important facilitator of PrEP uptake.¹¹ Those without support may have to hide daily use of PrEP from a partner or family and this may lead to stress of discovery and negatively affect adherence.¹² Even with partner buy-in, PrEP adherence is not guaranteed, as results of the Partners PrEP Study in Kenya and Uganda demonstrate. This randomized controlled trial included 4747 serodiscordant couples to assess PrEP's efficacy. Despite involvement of male partners in the study, it found that women experiencing IPV were 50% more likely to have low PrEP adherence because of violence and stress-induced forgetfulness, pills being thrown out, or not taking pills when running away.¹⁰

Poverty

The most marginalized young women face additional barriers. Poverty and lack of education make it difficult to negotiate HIV prevention choices. A study in Botswana and Swaziland found that women reporting food insufficiency (proxy for poverty) were more likely to report inconsistent condom use, to have intergenerational sex, and to report a lack of control in sexual relationships.¹³ Other poverty-related barriers to PrEP adherence include lack of food to satisfy increased appetite following PrEP initiation, lack of travel funds to collect PrEP refills, or loss of income due to regular follow-up visits.¹⁴ Moreover, poverty-associated stress reduces cognitive processing. Given biological, psychological and social transitions in adolescence and young adulthood, young women may lack neurocognitive maturity to fully weigh short-term actions against long-term health consequences, and this can be exacerbated by poverty-related stress.⁷

Lack of education

A review exploring the association between the level of education and HIV status in sub-Saharan Africa concluded that more recent studies found individuals with poor education to be at increased risk of HIV.¹⁵ For example, having primary education or less in Botswana, Namibia and Swaziland was associated with increased odds (OR = 1.38) of being HIV positive as compared to having secondary education or more.² Lack of education is also associated with a lack of HIV knowledge, including knowledge about PrEP. A 2016 systematic review reports that outside the context of clinical trials or demonstration projects, almost none of the women in a US study, and only 8% of women in a Chinese study had heard about PrEP.¹¹ As PrEP is such a recent prevention option, how much PrEP knowledge would young women with little or no education in East and Southern Africa have? Moreover, the PrEP-pill for prevention is the same pill that is used for treatment. Given the high HIV prevalence in the East and Southern African region, the community may be more familiar

with the pill for treatment and falsely assume that an HIV-negative person using the pill for prevention is in fact HIV positive.

Stigma

The WHO considers PrEP to be cost-effective when made available to high-risk groups.⁴ Yet, with taboos around unmarried women being sexually active, the strategy of targeting high-risk sexual behaviour is inherently stigmatizing. A systematic review examining the five existing PrEP trials with women found that stigma was one of the principal barriers to PrEP adherence.¹¹ With conservative attitudes of many health-service providers, young women might be reluctant to ask for PrEP, as it may be perceived as admitting to promiscuity. Another disadvantage of targeting high-risk groups is that it makes PrEP “demand-driven”. This means that young women would need to consider themselves at risk before seeking PrEP, whereas young women's low-risk estimation contributed to low adherence rates in a large PrEP efficacy trial.¹²

Need for structural interventions

These structural factors are not only drivers of the HIV epidemic, they decrease young women's ability to act on HIV prevention choices. If young women cannot insist on condom use or fidelity, what are the chances they will suddenly develop the self-confidence and self-worth associated with the choice-enabled, and insist on using PrEP?

Prevention strategies should therefore aim to address the objective conditions in which young women live. We call for structural interventions with transformational processes that catalyze social, economic, cultural and political change.

Programs promoting young women's education and professional skills development could contribute to their empowerment and increase their ability to negotiate safe sex. Individual behavioural change programs could involve men, focusing on their sexual responsibility and respect for women, while governments could link social programs to HIV prevention.

Participatory community processes that build on local knowledge will support relevant and sustainable program implementation that may effectively contribute to reduction of young women's HIV risk. Interventions and related studies that explicitly address these structural barriers are likely, at the very least, to improve uptake and adherence of PrEP, and at best, to provide young women with the agency and enabling environment to improve their lives.

CONCLUSION

Choice disability compromises uptake and adherence to PrEP by young women in East and Southern Africa. As a biomedical prevention strategy, PrEP implementation needs to be accompanied by structural interventions that address the underlying drivers of HIV risk, including gender-based violence, poverty, lack of education and stigma. An enabling environment that facilitates young women's agency is essential to PrEP prevention strategies.

REFERENCES

1. Andersson N. Prevention for those who have freedom of choice – or among the choice-disabled: Confronting equity in the AIDS epidemic. *AIDS Res Ther* 2006;3(1):23. PMID: 16999869. doi: 10.1186/1742-6405-3-23.
2. Andersson N, Cockcroft A. Choice-disability and HIV infection: A cross sectional study of HIV status in Botswana, Namibia and Swaziland. *AIDS Behav* 2012;16(1):189–98. PMID: 21390539. doi: 10.1007/s10461-011-9912-3.

3. Fonner VA, Dalglish SL, Kennedy CE, Baggaley R, O'Reilly KR, Koechlin FM, et al. Effectiveness and safety of oral HIV preexposure prophylaxis for all populations. *AIDS (London, England)* 2016;30(12):1973–83. PMID: 27149090. doi: 10.1097/QAD.0000000000001145.
4. AVERT. Averting HIV and AIDS [online]. Available at: <https://www.avert.org/> (Accessed May 1, 2017).
5. McCormack S, Dunn DT, Desai M, Dolling DI, Gafos M, Gilson R, et al. Pre-exposure prophylaxis to prevent the acquisition of HIV-1 infection (PROUD): Effectiveness results from the pilot phase of a pragmatic open-label randomised trial. *The Lancet* 2016;387(10013):53–60. doi: 10.1016/S0140-6736(15)00056-2.
6. Baeten JM, Donnell D, Ndase P, Mugo NR, Campbell JD, Wangisi J, et al. Antiretroviral prophylaxis for HIV prevention in heterosexual men and women. *N Engl J Med* 2012;367(5):399–410. PMID: 22784037. doi: 10.1056/NEJMoa1108524.
7. Celum CL, Delany-Moretlwe S, McConnell M, van Rooyen H, Bekker L-G, Kurth A, et al. Rethinking HIV prevention to prepare for oral PrEP implementation for young African women. *J Int AIDS Soc* 2015;18(4):20227. doi: 10.7448/IAS.18.4.20227.
8. BAISIV. *Botswana AIDS Impact Survey IV (BAIS IV)*. Gaborone, Botswana: BAISIV, 2013.
9. Andersson N, Cockcroft A, Shea B. Gender-based violence and HIV: Relevance for HIV prevention in hyperendemic countries of southern Africa. *AIDS* 2008; 22:S73–86. PMID: 19033757. doi: 10.1097/01.aids.0000341778.73038.86.
10. Roberts ST, Haberer J, Celum C, Mugo N, Ware NC, Cohen CR, et al. Intimate partner violence and adherence to HIV pre-exposure prophylaxis (PrEP) in African women in HIV serodiscordant relationships: A prospective cohort study. *J Acquir Immune Defic Syndr* 2016;73(3):313–22. PMID: 27243900. doi: 10.1097/QAI.0000000000001093.
11. Koechlin FM, Fonner VA, Dalglish SL, O'Reilly KR, Baggaley R, Grant RM, et al. Values and preferences on the use of oral Pre-exposure Prophylaxis (PrEP) for HIV prevention among multiple populations: A systematic review of the literature. *AIDS Behav* 2017;21(5):1325–35. PMID: 27900502. doi: 10.1007/s10461-016-1627-z.
12. Corneli AL, Deese J, Wang M, Taylor D, Ahmed K, Agot K, et al. FEM-PrEP: Adherence patterns and factors associated with adherence to a daily oral study product for pre-exposure prophylaxis. *J Acquir Immune Defic Syndr* 2014; 66(3):324–31. PMID: 25157647. doi: 10.1097/QAI.0000000000000158.
13. Weiser SD, Leiter K, Bangsberg DR, Butler LM, Percy-de Korte F, Hlanze Z, et al. Food insufficiency is associated with high-risk sexual behavior among women in Botswana and Swaziland. *PLoS Med* 2007;4(10):e260. doi: 10.1371/journal.pmed.0040260.
14. Kagee A, Remien R, Berkman A, Hoffman S, Campos L, Swartz L. Structural barriers to ART adherence in Southern Africa: Challenges and potential ways forward. *Glob Public Health* 2011;6(1):83–97. PMID: 20509066. doi: 10.1080/17441691003796387.
15. Hargreaves JR, Bonell CP, Boler T, Boccia D, Birdthistle I, Fletcher A, et al. Systematic review exploring time trends in the association between educational attainment and risk of HIV infection in sub-Saharan Africa. *AIDS* 2008;22(3):403–14. PMID: 18195567. doi: 10.1097/QAD.0b013e3282f2aac3.

Received: May 6, 2017

Accepted: August 20, 2017

RÉSUMÉ

Lorsqu'elle est bien suivie, la prophylaxie pré-exposition (PPrE) s'avère hautement efficace pour prévenir le VIH chez les personnes non infectées. Les pays d'Afrique de l'Est et d'Afrique australe aux prises avec des taux élevés de prévalence et d'incidence du VIH adoptent de plus en plus la PPrE comme stratégie de prévention du VIH dans leurs populations à risque élevé, en particulier les jeunes femmes. Les facteurs comme la pauvreté, le manque d'instruction et la violence sexiste peuvent toutefois compromettre l'utilisation et l'observance de la PPrE dans ces populations. Les jeunes femmes défavorisées sur le plan des choix sont les plus vulnérables aux infections à VIH et les moins capables de mettre en pratique les choix de prévention du VIH. Pour un déploiement réussi de cette solution biomédicale, nous avons besoin d'interventions structurelles qui tiennent compte des vecteurs sous-jacents de l'épidémie de VIH.

MOTS CLÉS : VIH; prévention; prophylaxie pré-exposition; femmes; Afrique.