



Exploring the Association Between Female Genital Mutilation/Cutting and HIV

Female genital mutilation/cutting (FGM/C) threatens the health and well-being of girls in a variety of ways. Some experts have suggested that human immunodeficiency virus (HIV) may be among the practice's adverse health outcomes. They theorize that because women with FGM/C risk genital trauma and bleeding during intercourse, their chances of acquiring HIV from an infected male partner are increased. While evidence that FGM/C increases susceptibility to HIV could bolster FGM/C eradication efforts, this connection has received limited research attention.

The Evidence to End FGM/C programme examined the association between FGM/C and HIV status by:

- Undertaking a rigorous review of existing research literature.¹
- Conducting a limited analysis of Demographic and Health Surveys (DHS) with data available on both FGM/C and HIV from four sub-Saharan African countries (Ethiopia, The Gambia, Kenya, and Sierra Leone).²

This research summary highlights the programme's findings on the current state of evidence on the association between FGM/C and HIV, including the quality of the existing research and recommendations for further investigation.

Evidence Based on a Review of Existing Research

HIV prevalence is low in countries where FGM/C is common, particularly in countries that practise the most severe form of FGM/C, Type III (see box, page 2). HIV prevalence is highest in countries where most females are not cut or where the common FGM/C forms are the less-severe Types I and II. While these patterns appear to reflect a negative association between FGM/C and HIV overall, some experts suggest that FGM/C may increase HIV risk for individual women.

To assess evidence on individual HIV risk among women who have undergone FGM/C, the researchers thoroughly searched English-language peer-reviewed academic research and the grey literature (that is, unpublished studies or those published by an agency or organisation). The review used criteria established by the United Kingdom's Department for International Development (DFID), described in *How to Note: Assessing the Strength of Evidence*, to identify studies that met minimum quality standards.³

The review selected only quantitative studies that included FGM/C as an independent variable, and HIV status—measured by laboratory test—as an outcome. All the studies were observational (that is, no interventions were tested). The selected observational studies were acceptable because the review's aim was to investigate an association between FGM/C and HIV, not to establish a cause-and-effect relationship.

The Evidence to End FGM/C programme consortium generates evidence to inform and influence investments, policies, and programmes for ending female genital mutilation/cutting in different contexts.

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The final review included a small set of studies (14 total) of low to moderate quality based on DFID's criteria and represented several African countries. The findings were inconsistent:

- Four studies showed no association between FGM/C and HIV.
- Six studies showed a negative association (women with FGM/C were less likely to be HIV positive).
- Two studies showed a positive association (women with FGM/C were more likely to be HIV positive).
- Two studies showed an indirect association (an intervening factor appeared to play a role in the HIV status of women with FGM/C).

The review assessed the body of research and outlined the potential pathways for an association between FGM/C and HIV (see table, page 3). It concluded that not enough evidence was available to support any of the hypothesized pathways. Specifically, it showed that no physical or biological mechanisms linking FGM/C to HIV transmission have been analysed systematically and quantitatively; only a handful of the behavioural mechanisms have been explored, with partial or mixed results.

Evidence Based on an Analysis of National Survey Data

The quantitative analysis focused on countries with nationally representative DHS data available on both FGM/C and HIV. The six surveys took place in four sub-Saharan Africa countries: Ethiopia (2005), The Gambia (2013), Kenya (2003 and 2008-09), and Sierra Leone (2008 and 2013).

FGM/C was widespread (greater than 70 percent) in all countries except Kenya (28.7 percent in 2008-09 and 33.1 percent in 2003). FGM/C Types I and II were the main types practised in all countries; in some regions in Ethiopia, Type III was also common. HIV prevalence ranged from 1.7 percent (Ethiopia 2005) to 8.7 percent (Kenya 2003).

The analysis showed no difference in HIV prevalence by FGM/C status in the samples for Ethiopia, The Gambia, and Sierra Leone. By contrast, the analysis of both Kenya samples found that cut women were less likely to be HIV positive than uncut women. This negative association among Kenyan women remained statistically significant even when controlling for demographic and behavioural variables associated in other studies with HIV prevalence, such as marital status, whether a woman was sexually active,

Box

FGM/C Classifications

Type I. Partial or total removal of the clitoris and/or the prepuce (clitoridectomy).

Type II. Partial or total removal of the clitoris and the labia minora, with or without excision of the labia majora (excision).

Type III. Narrowing of the vaginal orifice with creation of a covering seal by cutting and appositioning the labia minora and/or the labia majora, with or without excision of the clitoris (infibulation).

Type IV. All other harmful procedures to the female genitalia for nonmedical purposes, for example, pricking, piercing, incising, scraping, and cauterization.

Sources: UNAIDS, UNDP, UNECA, UNESCO, UNFPA, UNHCHR, UNHCR, UNICEF, UNIFEM, and WHO, *Eliminating Female Genital Mutilation: Interagency Statement* (Geneva: WHO, 2008).

parity, lifetime number of sexual partners, and experiencing a sexually transmitted infection.

These findings—that Kenyan women who have undergone FGM/C are less likely than uncut women to have HIV—run counter to the theory that FGM/C raises the odds of HIV. While acknowledging that the reasons for this association are not clear, the analysis pointed to previous studies in Kenya suggesting that marital, premarital, and extramarital sex may be reduced among cut women, thus limiting exposure to HIV. In addition, regional variation in HIV prevalence may influence exposure. For example, Kenya's north eastern region has the nation's highest FGM/C rates, but its lowest HIV prevalence rates.

Several possible reasons could explain the inconsistent findings between Kenya and the other three countries studied:

- The studies were based on only one point in time (cross-sectional).
- Other pathways linking FGM/C and HIV may not have been examined.
- The low HIV-prevalence in Ethiopia, The Gambia, and Sierra Leone limits the sample size, making it difficult to draw meaningful conclusions.
- The considerable geographical variation in HIV prevalence and FGM/C status complicates efforts to assess the relationships.

What We Know

Overall, the findings were inconclusive, with no solid evidence supporting an association between FGM/C and HIV. However, further research is warranted because FGM/C causes trauma to women's genitalia, which can increase susceptibility to sexually transmitted infections such as HIV.

What We Still Need to Understand

To determine the nature of any relationship between FGM/C and HIV requires research with stronger study designs. Recommendations include:

- **Improve Measurement.** Most of the studies relied on respondents to self-report whether
- **Use Larger Samples.** Where possible, focus on countries and regions with moderate FGM/C and HIV prevalence to reach an adequate sample size to enhance the findings' strength. Consider conducting a pooled analysis using data from multiple countries together, considering diverse populations, HIV prevalence, and FGM/C types by making "country" one of the control variables.
- **Undertake Multi-Level Modelling.** This study design can measure country-level factors,

they had been cut, yet self-reporting can be inconsistent. While conducting clinical exams during DHS implementation is not feasible, other studies that use different types of samples or data sources could be designed to supplement respondents' reports with clinic records or physical examination.

Table

Evidence for an association between FGM/C and HIV via potential HIV-transmission pathways among women is inconclusive

	PATHWAY	DESCRIPTION	EXPECTED ROLE IN HIV TRANSMISSION	RESEARCH-BASED EVIDENCE
Physical Factors	Contaminated Equipment	Related to the tools used to perform the cutting	Increase risk	No evidence
	Accompanying Rituals and Activities	Scarification and tattoos as part of coming of age rituals; tetanus vaccination in advance of the cutting	Increase risk	No evidence
	Vulvovaginal Tears	Childbirth blood loss requiring transfusions, inflammation, and cell type changes	Increase risk	No evidence
	Penile Wounds and Bleeding	Reported in areas where Type III FGM/C predominates.	Increase risk	Not investigated
	Infections	Bacterial vaginosis, candidiasis, and sexually transmitted infections	Increase risk	Evidence supporting only part of pathway
	Vaginal Dryness	Due to removal of lubricating glands	Increase risk	Not investigated
Behavioural Factors	Anal Sex	An alternative to obstructed vaginal intercourse	Increase risk	Not investigated
	Coital Infrequency	Due to pain	Decrease risk	No evidence
	Lack of Condom Use	More direct exposure	Increase risk	Not investigated
	Extramarital Affairs	More partners	Increase risk	Evidence supporting only part of pathway
	Early Marriage/Older Male Partner	Older males more likely to be HIV+	Increase risk	Inconsistent evidence
	Early Sexual Debut	Sexual activity before age 19 or 20	Increase risk	Inconsistent evidence
	Widowhood/Divorce	Vulnerable to sexual abuse, transactional sex due to economic need/ widows may have had an HIV+ partner	Increase risk	Evidence supporting only part of pathway

Source: Y. Abisola Noah-Pinheiro, "Associations Between Female Genital Mutilation/Cutting And HIV: A Review of the Evidence" (New York: Population Council, forthcoming), based in part on Khady Diouf and Nawal Nour, "Female Genital Cutting and HIV Transmission: Is There an Association?" *American Journal of Reproductive Immunology* 69 (Suppl 1, 2013): 45-50.

such as the labour market, that may influence behaviour, preferences, and outcomes. Findings will be most robust with data from 30 or more FGM/C-practising countries.

- **Consider Differentiating Among Types of HIV and FGM/C.** HIV-2, mainly concentrated in western Africa, is less prevalent, less virulent, and progresses to AIDS more slowly than the more widespread HIV-1. These differences may influence transmission among women with FGM/C. Establishing a connection between HIV and FGM/C (if one exists) may be more difficult in a region where HIV-2 predominates. In addition, the severity of the FGM/C cut may affect the odds of HIV.

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- Y. Abisola Noah Pinheiro, Zhuzhi Moore, and David Gathara, “Associations Between FGM/C and HIV in Ethiopia, Gambia, Kenya, and Sierra Leone: A Limited Analysis of Demographic and Health Survey Data,” Evidence to End FGM/C: Research to Help Women Thrive (New York: Population Council, forthcoming).

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- 1 Y. Abisola Noah-Pinheiro, “Associations Between Female Genital Mutilation/Cutting And HIV: A Review of the Evidence,” Evidence to End FGM/C: Research to Help Women Thrive (New York: Population Council, forthcoming).
- 2 Y. Abisola Noah Pinheiro, Zhuzhi Moore, and David Gathara, “Associations Between FGM/C and HIV in Ethiopia, Gambia, Kenya, and Sierra Leone: A Limited Analysis of Demographic and Health Survey Data,” Evidence to End FGM/C: Research to Help Women Thrive (New York: Population Council, forthcoming).
- 3 Department for International Development (United Kingdom), (March 2014) *How to Note: Assessing the Strength of Evidence*, accessed at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/291982/HTN-strength-evidence-march2014.pdf, on June 6, 2018.

