

Ethics of using male circumcision for HIV prevention: exploring the middle ground

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Three recent randomized, controlled trials in Africa indicate that male circumcision significantly reduces the risk of men acquiring HIV from HIV-positive women via sexual intercourse. These promising new findings have added fuel to already volatile debates about the ethics of male circumcision. In this paper, we seek to briefly identify and evaluate some key ethical positions in this increasingly complex debate. We first distinguish between the debate on the science linking male circumcision and HIV transmission, and the debate on the implementation of the science. We then identify a few intermediate ethical positions within each of these two debates. The aim of our analysis is to suggest the range of positions within the ethical debate on male circumcision and HIV prevention, particularly moderate positions sometimes overlooked or misrepresented by the media and advocacy groups. We suspect that, despite the promise of the recent studies, the future role of male circumcision in the fight against HIV/AIDS will be a modest one, owing in large part to difficulties in increasing the uptake of the intervention in the face of considerable religious, cultural, ethical and socioeconomic obstacles in countries most affected by the epidemic.

A possible association between male circumcision and reduced risk of HIV acquisition was first postulated back in 1986 [1]. Systematic reviews of numerous observational studies on male circumcision and HIV over the last two decades – mostly conducted in Africa – seem to largely confirm the association between male circumcision and reduced risk of female-to-male HIV transmission [2]. However, perceived methodological shortcomings of such studies – particularly their inability to exclude possible confounding factors – led to calls for more rigorous study designs. Recently, the results of three randomized, controlled trials in South Africa, Uganda and Kenya support previous findings by indicating that male circumcision reduces the risk of HIV acquisition by males via heterosexual contact by 50–60% [3–5]. The epidemiological findings seem to be supported by biological plausibility: an association between the concentration of Langerhans cells in the foreskin with increased receptivity of HIV virus [6–8]; the keratinization of the shaft of the circumcised penis acting as a barrier against penetration of the HIV virus [6]; and circumcision reducing risk of sexually transmitted diseases and thereby (indirectly) reducing the associated heightened risk of HIV infection [9].

These landmark findings have increased the longstanding interest in integrating male circumcision as part of comprehensive HIV prevention

policies. The findings also come at a time when the rate of new HIV infections worldwide continue apace, the success of conventional HIV prevention strategies (abstinence, condom use and faithfulness) remains limited, and research on other HIV prevention approaches (microbicides and diaphragm) have suffered recent setbacks [10,11]. On the basis of the new results, the WHO currently recommends that male circumcision be considered an important strategy in HIV prevention, both in high-HIV-prevalence countries and countries of low prevalence with HIV infection concentrated among risk groups [10].

Much controversy surrounds male circumcision as a religious or medical intervention, independent of its new link with HIV transmission [12–14]. In North America, Europe and Australia, there are vocal opponents of neonatal circumcision, who regard the practice as genital mutilation and a violation of children's rights. Some individuals and groups opposed to neonatal male circumcision have turned their attention to the issue of male circumcision and HIV prevention, expressing deep skepticism towards the science and strong opposition to the idea of promoting male circumcision for HIV prevention purposes, especially (but not exclusively) with regards to infants [14–16,102,103]. Given the passion that the topic raises, debates concerning the role of male circumcision in the

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fight against HIV/AIDS are often polarized between those who flatly reject and those who strongly embrace this use of male circumcision. This article aims to briefly chart some of the moderate positions in the debate on the ethics promoting male circumcision for the purpose of HIV prevention.

Debating the science

In general, the scientific community is convinced by the accumulative body of evidence regarding the protective effect of male circumcision for HIV acquisition. An international consultation involving prominent HIV prevention researchers states that “male circumcision should now be recognized as an efficacious intervention for HIV prevention” [104]. While there are reports that social scientists at the last International AIDS Conference in Toronto were less convinced than their biomedical counterparts [17], a recent meeting of prominent social scientists also affirms that, “there is compelling evidence for a partial protective effect of male circumcision on … HIV acquisition” [105]. Since scientific research never attains certain knowledge, there remain unanswered questions and room for reasonable doubt. For example, since all trials were terminated after an independent board examined the data and discovered a statistically significant difference in HIV acquisition between the circumcised and uncircumcised men, the trials can only show that male circumcision has a 50–60% protective effect for 18–24 months, and early trial termination can lead to an overestimate of clinical effects [18].

Not all doubts about circumcision research, however, have been reasonable. A popular argument is historical: medical professionals in the past have claimed that male circumcision can cure or treat a number of health conditions, including TB, mental illness, excessive masturbation and schistosomiasis [19]. While some associations – such as reduced risk of syphilis acquisition and urinary tract infection – still have scientific merit, others were clearly false. Given its spotted history, male circumcision is regarded in some quarters as ‘a cure in search of a disease’, and current research on HIV and male circumcision is regarded as one more misguided attempt to provide a rational, medical justification for an ancient (and pernicious) custom [20]. There are two obvious problems with this argument. First, past claims by physicians about the curative effects of circumcision were typically not results of any serious scientific research.

Second, the historical argument does not engage current circumcision research on its own merits, but simply asserts that the current association between male circumcision and HIV acquisition is destined to join the scrapheap of discredited medical claims.

Nevertheless, few believe that the accumulated body of research on HIV and male circumcision is completely unreliable. A more common view is that while the new trial results may be promising, the trials do not yet provide sufficient evidence to explore ways to promote male circumcision for HIV prevention. This cautious position seems more reasonable than outright rejection of two decades of research. However, imagine the following thought experiment. A randomized clinical trial indicates that a drug (in the form of a simple blue pill, taken only once) reduces female-to-male HIV transmission by approximately 60%, at least over a 2-year period. It is the third such trial that has reached these results, and like the others, the researcher’s trial design seems to have done a passable job of controlling for possible confounders. In addition, there are some biological studies indicating why the blue pill provides some protection against the HIV virus. Given these studies, and given the number of new HIV infections (and HIV-related deaths) worldwide, has the imagined research reached the point at which it would be reasonable to think about promoting the blue pill? Probably most would agree. But if so, why should the research on male circumcision be treated differently? Unlike the case of a drug, judgments of what counts as sufficient scientific evidence with regards to male circumcision and HIV seem to be partly determined by prior attitudes – both positive and negative – about the ethics of male circumcision itself. Those strongly opposed to male circumcision, as such, tend to continuously raise the scientific bar in order to prevent the practice from gaining a powerful public-health justification.

At this point, it is crucial to point out that there are two related but distinct debates in regard to male circumcision and HIV prevention. In the first debate, the key question is whether scientific research really shows that male circumcision significantly reduces HIV infection rates. In the second debate, the key question is whether male circumcision ought to be promoted and practiced as part of HIV prevention strategies in the field. Obviously, the two debates are related: if the research is fundamentally flawed, there is no scientific justification for

promoting male circumcision. However, the converse is not true. Even solid evidence that male circumcision significantly reduces female-to-male transmission within a clinical trial context does not entail that male circumcision ought to be promoted and practiced as a HIV prevention tool in a real-world setting. Acceptance of the scientific evidence as compelling is compatible with serious ethical reservations about how to implement the research, and with calls for more (and different kinds of) research about how best to translate the clinical trial findings into effective interventions in real-world settings. Elsewhere, we have called this the neglected field of ‘implementation ethics’, that is, the study of the ethical issues raised by attempts to convert the successful results of biomedical research into health policy and practice [21].

Debating the implementation

There is a complex network of factors to consider when reflecting on the ethics of integrating male circumcision into HIV prevention programs [22], and this means that there are a number of distinct ethical positions within the debate. Take, for example, the age factor. Should male circumcision be promoted for newborn children, adolescents or only adults? There is a strong argument against neonatal circumcision on epidemiological and human-rights grounds: circumcising soon after birth would have no population-level effect on HIV incidence for over a decade, and the principle of autonomy seems to require waiting until males are old enough to decide for themselves. The argument gains further strength if neonatal circumcision – as it is in some African countries – is culturally alien. Using the above mentioned reasons, it is possible to take a moderate line, opposed to neonatal circumcision for HIV prevention but in favor of promoting voluntary circumcision exclusively among adult males. However, this position has its costs: male circumcision at adulthood is associated with greater surgical complications, and focusing exclusively on adults misses opportunities to reduce risks of HIV acquisition among sexually active minors, particularly in regions of high HIV prevalence and early sexually onset among boys [23].

Even if one takes the ‘easy’ case of adult males – sidestepping to some extent the thorny issues of autonomy and consent – there are other formidable ethical challenges to promoting and practicing circumcision as part of HIV prevention. Is it ethical to promote an intervention that

is only partially protective against HIV and is in fact less protective than correct and consistent condom use? Why not invest more in condom promotion? Might the promotion of male circumcision in fact end up undermining condom use among men who think that being circumcised is already ‘protection enough’? Will this initiative lead to women having even less power in negotiating safe sex with newly circumcised men? These are legitimate worries, and highlight the importance of clear and culturally appropriate communication to both men and women. Unless these worries are supported by evidence, they do not yet constitute strong reasons against the promotion of male circumcision. We require evidence that condom promotion efforts could be improved to an extent that novel and supplementary HIV prevention approaches, such as male circumcision, would be redundant. We also need evidence that newly circumcised men – despite being counseled about the partiality of protection and the continuing need for safe-sex practices – show a significant increase in risky sexual behavior. One cannot rule out that the promotion of male circumcision might be part of a larger movement to improve male reproductive health, and could even strengthen condom use. Rather than prohibiting the promotion of male circumcision because of what might happen, a moderate position can acknowledge the risks of such initiatives, as well as the possible benefits, and that the ethics partly depends on how things turn out. If it transpires that the promotion of male circumcision substantially undermines condom use and increases risky behavior, its ethical justification also changes.

Another important factor to be considered, no matter what age circumcision is performed, is safety. UNAIDS claims that states have a duty to ensure that circumcision takes place with appropriate and sterile surgical equipment, by trained practitioners who operate in a hygienic environment and provide adequate postoperative care, with a system of referral in place for serious complications [106]. Anyone familiar with clinical conditions in developing countries knows how tall an order this is. It is therefore possible to argue that while the science surrounding male circumcision is compelling, its promotion is only ethical in settings where safety can be ensured. However, safety demands material and human resources. If the expense largely falls on the patient, there will be a real danger that this form of HIV prevention will only be available to wealthy, urban elites. And is it ethically justifiable that health

practitioners, already scarce in developing countries, devote increasing operating time to circumcisions, if that means less time for other (more urgent) surgical interventions? From this perspective, the promotion of male circumcision may only be ethically justified if it is embedded in initiatives to strengthen (equitable access to) basic healthcare infrastructure in the countries most affected by HIV/AIDS.

Future perspective

What will the role of male circumcision be in the struggle against HIV/AIDS in 10 years time? It is risky to venture an answer, but there are some reasons to suspect that the contribution will be modest, despite the recent study findings on male circumcision constituting one of the most significant breakthroughs in HIV prevention research in the past 10 years. The success of male circumcision as an HIV prevention strategy on a population level depends on significant uptake of circumcision services among men and boys in traditionally noncircumcising communities. In this regard, it is instructive to compare male circumcision with the use of nevirapine to prevent mother-to-child transmission. Despite it being known since 1999 that a short course of anti-retroviral drugs can more than halve the risk of HIV transmission, and despite significant funding initiatives and programs, by 2005 only 9% of HIV-positive pregnant women worldwide were receiving these drugs [107]; in sub-Saharan Africa, less than 6% of HIV-positive pregnant women in 2005 had access to HIV prevention services in general [108]. As it stands now, it is difficult to see how safe, painless and affordable male circumcisions can take place on the mass scale necessary

to make a population-level impact on the epidemic in low-income countries where many men rarely come into contact with formal healthcare systems. Ultimately, and unfortunately, male circumcision may be too burdened by historical, religious, socioeconomic and ethical complications to be anything but a minor player in HIV prevention, and may well be overshadowed by future biomedical prevention interventions with relatively less baggage (e.g., pre-exposure prophylaxis, microbicides or vaccines) or by stronger commitments to the proven approaches of behavioral education and condom promotion. However, these outcomes are not certain; we stand at a crossroads. On the one hand, the current strength of the scientific evidence in favor of a protective effect against HIV acquisition is such that it would be unethical not to explore this approach to HIV prevention. On the other hand, the challenges facing this approach are many and substantial, and therefore the ethics of promoting male circumcision for HIV prevention will have to be continuously revisited in the years to come.

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Executive summary

Background

- Three recent clinical trials in South Africa, Kenya and Uganda offer compelling evidence that male circumcision reduces the risk of female-to-male HIV transmission.
- Male circumcision (particularly neonatal circumcision) is a controversial topic, and the new connection with HIV prevention has further polarized ethical debates.

Debating the science & implementation of male circumcision for HIV prevention

- It is important to distinguish ethical issues about the clinical trials, and ethical issues about whether and how to promote male circumcision as part of HIV-prevention programs.
- As a complex mix of factors determine the ethics of promoting male circumcision for HIV prevention, there are a number of moderate positions that can be taken within the debate.

Future perspective

- Despite the compelling quality of the clinical-trials data, male circumcision may not turn out to be a prominent approach to HIV prevention in the future, owing to the presence of considerable ethical, socioeconomic, religious and ethnic challenges.

Bibliography

Papers of special note have been highlighted as of interest (*) or of considerable interest (**) to readers.

1. Fink AJ: A possible explanation for heterosexual male infection with AIDS. *N. Engl. J. Med.* 315, 1167 (1986).
2. Siegfried N, Muller M, Volmink J *et al.*: Male circumcision for prevention of heterosexual reduction of HIV infection in men. *Cochrane Database Syst. Rev.* 3, CD003362 (2003).
- Influential systematic review of studies on male circumcision and HIV acquisition prior to the first randomized, controlled trials.
3. Auvert B, Taljaard D, Lagarde E *et al.*: Randomized controlled intervention trial of male circumcision for reduction of HIV risk: the ANRS 1265 trial. *PLoS Med.* 12, 298 (2005).
- First randomized, controlled trial comparing HIV acquisition between circumcised and uncircumcised men, indicating a 60% protective effect.
4. Gray R, Kigozi G, Serwadda F *et al.*: Male circumcision for HIV prevention in men in Rakai, Uganda: a randomized trial. *Lancet* 369, 657–666 (2007).
- Randomized, controlled trial involving nearly 5000 men, randomly assigned to circumcision and noncircumcision arms, whose results (51% protective effect) are consistent with those of the South African trial.
5. Bailey R, Moses S, Parker C *et al.*: Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomized controlled trial. *Lancet* 369, 643–656 (2007).
- On a study design similar to the South Africa and Uganda trials, this trial indicates a 53% protective effect.
6. McCoombe SG, Short RV: Potential HIV-1 target cells in the human penis. *AIDS* 20, 1491–1495 (2006).
7. Donoval BA, Landay AL, Moses S *et al.*: HIV-1 target cells in foreskins of African men with varying histories of sexually transmitted infections. *Am. J. Clin. Pathol.* 125(3), 386–391 (2006).
8. Patterson BK, Landay AL, Siegel JN *et al.*: Susceptibility to human immunodeficiency virus-1 infection of human foreskin and cervical tissue grown in explant culture. *Am. J. Pathol.* 161, 867–873 (2002).
9. Weiss HA, Thomas SL, Munabi SK *et al.*: Male circumcision and risk of syphilis, chancroid and genital herpes: a systematic review and meta-analysis. *Sex. Transm. Infect.* 82, 101–109 (2006).
10. Padian NS, van der Straaten A, Ramjee G *et al.*: Diaphragm and lubricant gel for prevention of HIV acquisition in southern African women: a randomised controlled trial. *Lancet* 370, 251–261 (2007).
11. Honey K: Microbicide trial screeches to a halt. *J. Clin. Invest.* 117, 1116 (2007).
12. Benatar M, Benatar D: Between prophylaxis and child abuse: the ethics of neonatal male circumcision. *Am. J. Bioeth.* 3, 35–48 (2003).
13. Fox M, Thomson M.: A covenant with the status quo? Male circumcision and the new BMA guidance to doctors. *J. Med. Ethics.* 31, 463–469 (2005).
14. Hellsten SK: Rationalizing circumcision: from tradition to fashion, from public health to individual freedom – critical notes on the cultural persistence of the practice of genital mutilation. *J. Med. Ethics.* 30, 248–253 (2004).
15. Darby R: Been there, done that: thoughts on the proposition that yet more circumcision can save the world from AIDS. *Australian Quarterly* 74 (2002).
16. Hill G, Denniston GC: HIV and circumcision: new factors to consider. *Sex Transm Inf.* 79, 495–496 (2003).
17. Dowsett GW, Couch M: Male circumcision and HIV prevention: is there really enough of the right kind of evidence? *Reprod. Health Matters* 15, 33–44 (2007).
18. Montori VM, Devereaux PJ, Adhikari NKJ *et al.*: Randomized trials stopped early for benefit: a systematic review. *JAMA* 294, 2203–2209 (2005).
19. Gollagher DL: *Circumcision: a History of the World's Most Controversial Surgery*. NY, USA: Basic Books (2000).
20. Darby R: *A Surgical Temptation: The Demonization of the Foreskin and the Rise of Circumcision in Britain*. University of Chicago Press, IL, USA (2005).
21. Rennie S, Behets F: AIDS Care and treatment in sub-Saharan Africa: implementation ethics. *Hastings Cent. Rep.* 36, 23–31 (2006).
22. Rennie S, Muula AS, Westreich D: Male circumcision and HIV prevention: ethical, medical and public health tradeoffs in low-income countries. *J. Med. Ethics.* 33, 357–361 (2007).
- Provides an overview of the ethical challenges surrounding the implementation of male circumcision as an HIV prevention strategy, particularly in developing countries.
23. D'Angelo LJ, Samples C: HIV infection and AIDS in adolescents: an update of the position of the Society for Adolescent Medicine. *J. Adolesc. Health* 38, 88–91 (2006).

Websites

101. UNAIDS: Safe, voluntary, informed male circumcision and comprehensive HIV prevention programming: guidance for decision-makers on human rights, ethical and legal considerations (2007) http://data.unaids.org/pub/Manual/2007/070613_humanrightsethicallegalguidance_en.pdf.
102. UN Populations Fund. Countries failing to deliver to HIV-positive pregnant women. Press release (2006) <http://web.unfpa.org/news/news.cfm?ID=863>
103. WHO/UNAIDS: New Data on male circumcision and HIV prevention: policy and programme implications. http://data.unaids.org/pub/Report/2007/mc_recommendations_en.pdf (2007)
- In its most recent policy statement with regards to male circumcision and HIV prevention to date, the WHO recommends that male circumcision be added to the traditional array of HIV prevention strategies.
104. UNAIDS/Caprisa: UNAIDS/CAPRISA consultation on social science perspectives on male circumcision for HIV prevention. 18–19 January, 2007 Summary Report http://data.unaids.org/pub/Agenda/2007/20070303_male_circumcision_report_en.pdf
105. National Organization of Circumcision Information Resource Centers. Answers to your questions about male circumcision and HIV/AIDS www.nocirc.org/publish/11-HIV.pdf
106. Doctors Opposing Circumcision. Doctors Opposing Circumcision: HIV statement www.doctorsopposingcircumcision.org/info/HIVStatement.html.
107. UN Population Fund. Countries failing to deliver to HIV-positive pregnant women. Press release (2006). <http://web.unfpa.org/news/news.cfm?ID=863>
108. UNAIDS/WHO: 2006 report on the HIV/AIDS epidemic. http://data.unaids.org/pub/GlobalReport/2006/2006_GR_CH06_en.pdf.