



> Managing Editor



> Guest Editor

The 'cut' that could cut HIV transmission

Research indications that male circumcision (MC) reduces HIV risk in men by about 60 per cent may popularise the practice. For maximum protection, States should ensure that accurate information is accessible to men, women and adolescents on the partial protective effect of MC, its risks and benefits.

Services should be accessible, starting in high HIV prevalence areas and care must be taken to embed it within existing HIV prevention packages that include intensive counselling on safer sex, particularly regarding reduction in the number of concurrent sex partners and correct and consistent use of male and female condoms.

In high HIV prevalence countries of southern and eastern Africa, MC rates are generally under 20 per cent. Acceptability studies in some African societies where MC is not traditionally practised indicate that substantial proportions of men and women hold positive views on MC. Here, most men say they would be circumcised if it were safe and affordable.

The many men recruited into trials in non-circumcising communities in Kenya, South Africa and Uganda, and the increased demand for MC in Swaziland and Zambia, suggest that uptake of the procedure could be rapid. However, it should be stressed that the benefit from MC is relative. The effect of MC on female partners, not just regarding HIV, but also sexually-transmitted infections, cervical cancer, female pleasure, and female perceptions of sexual viability of the male partner must be explored more.

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Bukusu boys from western Kenya who were circumcised traditionally as a rite of passage.

Picture: Courtesy of Dr Robert C. Bailey



A nurse assists a clinical officer during male circumcision.

Picture: Courtesy of FHI

Male circumcision for HIV prevention

An estimated 30 to 35 per cent of men worldwide — majority of them in developing countries — are circumcised for religious, cultural, medical or other reasons. In high HIV prevalence countries of southern and eastern Africa, the rate of circumcision is generally under 20 per cent.

Estimates show that 750 million men are circumcised worldwide. Male circumcision is routinely done at birth for medical benefits in the United States although it is less common in Northern Europe. Prevalence varies in Asia and Latin America. HIV prevalence rates are high in most sub-Saharan African countries, where male circumcision prevalence varies (see Table 1).

Male circumcision is the total or partial removal of the foreskin.¹ Its benefits have been documented over the years, with genital hygiene, for instance, observed to be easier in circumcised men. Medical conditions like balanitis — an infection due to adhesions developing between the foreskin and collection of secretions — can be managed through circumcision. Narrowing of the urethral opening known as phimosis (inability to retract the foreskin) can also be managed by circumcision.² Associations have been made between medical benefits of circumcision such as reducing the risk of sexually-transmitted

infections (STI) transmission, urinary tract infections.³

Rising HIV transmissions have led to increased interest in male circumcision as an HIV reduction strategy. The operation inhibits factors that make it easy for HIV to penetrate broken mucous membrane during sex, for instance. Secondly, there are CD4, T cells and macrophages that are susceptible to HIV infection, and which attract the virus to attach to these cells. Thus biological evidence shows that foreskin removal cuts HIV risk.

Other studies show that other HIV co-receptors are linked with CD4 and CCR5 present on the dendritic cells of the foreskin.⁴ Studies have also shown that STIs increase the risk of HIV transmission while circumcision indirectly reduces exposure to STIs.⁵ Available evidence shows that circumcision reduces the risk of some STIs but not the urethral ones.⁶



A counselling session on the need to use condoms even after a male partner undergoes MC.

WHO and UNAIDS published conclusions and recommendations in March 2007 concerning male circumcision and its implications for research on HIV policy and programming. Compared with conventional vaccines, which often protect against a single disease and wear off after some time necessitating a booster, circumcision has been shown to be protective against a

number of medical conditions and diseases and requires to be performed only once.⁷ Schoen argues that as early as the 1980s, anthropologists noted the perceived benefits of male circumcision in reducing HIV transmission, which were confirmed by subsequent research. Yet according to Schoen, organisations working in health and other professional medical bodies ignored such evidence.

Male-to-female HIV transmission seemed to be lower in cases where the viral load was lower coupled with the fact that the man was circumcised

Male circumcision as an HIV prevention strategy continues to elicit debate on the benefits, foreseeable risks, compelling scientific evidence to use it, the ethical issues of supporting an intervention that only protects men or the ethics of withholding the procedure when evidence suggests its effectiveness, the cultural, sexuality⁸ and legal implications. The need for studies on the cost-benefit of male circumcision in relation to the costs of scaling-up the approach, stigma, culture, gender-based violence etc have been expressed.⁹ Others caution against the false security derived from male circumcision. There are misconceptions in some communities that the practice offers protection from HIV even when one is indulging in risky behaviour like unprotected sex with multiple partners.

A Cochrane review of 2003, which was updated in 2004, identified 18 general population studies (four cohort studies, 11 cross-sectional and three case-control studies) but no completed Randomised Control Trials (RTC). An analysis of these studies demonstrated varied results with some showing a protective effect and others none. The review also showed that the practice may be effective in high-risk groups as opposed to populations where HIV infection is generalised. The review was updated in 2005 when two observational studies were added but its conclusions remained the same.¹⁰

In Rakai, Uganda, HIV transmission and acquisition was studied among discordant couples and results showed a crude protective effect of circumcision and a statistically non-significant effect of circumcision done after puberty although study participants for the post-puberty circumcision were fewer, thus affecting the precision of the results. Among 187 discordant couples studied there was no seroconversion per every 50 couples where the man was circumcised. Where the man was not circumcised, there were 40 seroconversions for every 137 couples. Male-to-female HIV transmission seemed to be lower in cases where the viral load was lower coupled with the fact that the man was circumcised.¹¹

The Cochrane review was updated again in 2009 to factor in the results of the South African, Kenyan¹² and the Ugandan studies¹³ to assess evidence that male circumcision prevented acquisition of HIV-1 and HIV-2 by men through heterosexual

A number of sub-Saharan African countries intending to introduce MC strategies are exploring the role of traditional providers in circumcision given that facility-based circumcision that UNAIDS is encouraging, is problematic for ailing health systems

intercourse. The findings from three completed RCTs showed 60 per cent protection against HIV transmission among circumcised men. The studies were discontinued when they started showing



Villagers celebrate circumcision in Madagascar.



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positive results because it was unethical to withhold benefits from circumcision among the control group.¹⁴

Analysis of secondary outcomes of Kenyan and Ugandan trials showed that male circumcision displayed significant protective effects. For the South African trial, the mean number of sexual contacts (number of sex acts) at the 12 month visit was 5.9 in the circumcision group versus 5 in the control group, which was statistically significant. The review concluded that medical male circumcision reduces the acquisition of HIV by heterosexual men by between 51 and 76 per cent over a two-year-period and recommends it for HIV prevention. It also suggests assessment of feasibility, desirability, and cost-effectiveness of implementing MC interventions.¹⁵

Male circumcision in HIV prevention is complex because it combines public health, sexuality, ethical, and gender and rights

issues. It can be viewed from different perspectives including anthropology, medicine, law, and public health. Plans to scale-up facility-based circumcision to about 80 per cent will increase pressure on health systems, with long waiting lists and inadequate health workforce mandated by regulation to perform surgical procedures.

Lesotho and Namibia are considering reviewing their human resources policies to allow nurses to conduct surgical

The thickening of the skin around the fraenum of the penis, and the residual cuff of the coronal mucosa that takes sometime to form is what makes male circumcision effective

circumcision. A number of sub-Saharan African countries intending to introduce MC



Three Zambian boys taken to George Health Centre in Lusaka for MC.

Picture: Courtesy of Photoshare

strategies are exploring the role of traditional providers in circumcision given that facility-based circumcision that UNAIDS is encouraging, is problematic for ailing health systems. In Lesotho, for example, 8,000 circumcisions are done by traditional circumcisers annually. The question: Can non-medical personnel be trained in MC? If not, would traditional circumcisers stop practicing because a policy says male circumcision should be done at health

Country	HIV prevalence	Male circumcision	Brief progress on MC scale-up implementation (MC) prevalence
Botswana	25%	11.2%	MC strategy developed and approved by government. Plans included in Global Fund proposal. Phased scale-up planned to reach 80 per cent among 0-49-year-old HIV-negative men by 2014. A curriculum developed, two pilot trainings conducted for 17 medical officers and 15 nurses/social workers.
Kenya	7% (Nyanza province 15.3%)	80%	MC policy in place, aims to reach 80 per cent by 2013 among 15 to 49-year-olds and newborns. About 300 health workers have been trained.
Lesotho	23.2%	48%	MC policy development underway. Drafted strategy. Need resource mobilisation. Regulations do not allow task shifting for nurses therefore regulations on task shifting being reviewed and exploring use of traditional providers of MC.
Malawi	12%	21%	MC policy development under way, situational analysis being undertaken.
Mozambique	16%	60%	No information on MC available yet.
Namibia	18%	21%	MC draft policy submitted to parliament including shifting surgical tasks to nurses. Situation analysis on traditional circumcisers' practices needed.
Rwanda	2.8%	15%	MC service assessment study conducted. Community component protocol developed, policy to be developed after situation analysis.
South Africa	18.1%	35%	Situation analysis is in progress and draft policy is under review.
Swaziland	26%	8%	Situation analysis partly done, policy awaiting Cabinet approval.
Tanzania	5.7%	70%	HIV prevalence studies ongoing, policy to be informed by studies.
Uganda	6.4%	25%	Situation analysis on MC has been completed together with a mapping of service providers of MC. A statistical modelling to estimate cost of medical MC is planned.
Zambia	14.3%	13.1%	Situation analysis on health facility readiness to provide MC has been completed. A cabinet memo that includes MC as one of the HIV prevention strategies has been approved. A draft policy has been developed.
Zimbabwe	15.6%	10%	Situation analysis on MC has been completed and disseminated. A mathematical modelling to estimate cost of medical MC was held in 2007.

Source: WHO/UNAIDS website for male circumcision



An MC outreach organised by Nyanza Reproductive Health Society.

facilities? What lessons can be learned from programmes such as safe motherhood that are still struggling to stop traditional birth attendants from conducting deliveries despite existing policies reinforcing skilled birth attendant deliveries?

With changing technologies can male circumcision be done safely by health professionals? Is it worth exploring? And what can we learn from Malawi where the need to reduce HIV infection due to the use of one knife or razorblade during boys' initiation rites increased facility-based circumcision when the ritual aspect continued to be done in the community? Can this be examples where male circumcision strategies embraced social construction of coming of age, sexuality and masculinity? And how will programmes deal with potential stigmatisation of men who choose not to be circumcised or HIV positive men who feel the need to be circumcised for fear of being stigmatised when the practice is scaled-up?

Complications pose another concern, with some studies reporting them among 85 per cent of circumcised men in non-medical settings in Turkey compared to two per cent in surgeons' procedures.¹⁶ In Kenya and Nigeria, complications were more at 11 per

cent in medical settings than those observed in the study conducted in Turkey.¹⁷ The thickening of the skin around the fraenum of the penis, and the residual cuff of the coronal mucosa that takes sometime to form is what makes male circumcision effective.¹⁸ Yet there are indications that some newly circumcised men resume unprotected sex before the skin thickens to act as a barrier against HIV infection.

But just how cost-effective is male circumcision in HIV prevention? Modelling studies have been done in Kenya, South Africa, Uganda and Southern Africa in general to examine the impact of scaling-up of male circumcision to reduce HIV prevalence and incidence.¹⁹ Such a study in Botswana estimated HIV prevalence among adults at 25.7 per cent in 2007. Scaling-up of MC could possibly pose a risk among some newly (or previously) circumcised males who might indulge in risky behaviours exposing them to HIV.²⁰

Some African countries with high HIV prevalence rates have adopted male circumcision as an HIV prevention strategy.²¹ The table above shows a brief summary of those countries, and their progress in implementing MC as of July 2009.

The future of male circumcision as an HIV prevention strategy

While recent scientific evidence about the role of male circumcision in reducing HIV in countries with generalised epidemics is compelling, it is important to recognise that the procedure is just one of the HIV prevention strategies.²² For the best protection of men and their sexual partners, accurate information about male circumcision should be readily accessible, provided in an equitable, non-discriminatory and safe manner. Programmes on male circumcision should address the benefits and protective effects of the practice and its risks. Lastly, MC should be integrated within comprehensive HIV prevention programming, under a legal, regulatory and policy framework that is acceptable to key stakeholders and is considerate of the cultural, ethical, gender and rights issues associated with it. ■

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