

# Global HIV Prevention Policy: Educational Initiatives in Progressive Prevention Modalities

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In December 2006, the Joint United Nations Programme on HIV/AIDS (UNAIDS) and the World Health Organization (WHO) published an update to their *Report on the Global AIDS Epidemic* stating that approximately 4.3 million people have been infected with HIV in 2006 alone. This annual incidence rate had increased by 400,000 since their last report in 2004 (1). In response to these astounding numbers, UNAIDS and WHO instituted global prevention policies aimed at decreasing the incidence of HIV infection. Traditionally they have focused specifically on patient education and resource accessibility. However, in March 2007, UNAIDS issued a technical consultation detailing the recommendations and implications of male circumcision (MC) as a possible HIV prevention modality (2). This sudden innovation in current prevention policy was motivated by the recent release of three randomised controlled trials demonstrating a minimum 51 percent decrease of HIV infection in circumcised males (3). Implementing a global MC program could prevent 5.7 million infections and 3 million deaths over the next 20 years (2). While these figures look promising, the viability of such a prevention program outside of a trial environment has been put in question, specifically regarding the potential underestimation of human behavioural factors, sociological norms and their net impact. Even when offered this program, individuals may hold prior misconceptions of MC or deviate from preventative behaviour practices. Participant compliance with current preventative methods would be essential to ensure the efficacy of such a program; MC

the mortality rate and incited a reprioritising of global treatment availability, from a prophylactic perspective, the impact of this treatment on HIV incidence lacks quantitative validation (3,4). Thus, HIV incidence remains unaffected without definitive prevention methods. Previous studies have

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determined immunological cells present in male foreskin to be targets for HIV; removal of the foreskin through MC, and thus of these specialised cells, diminishes the capability of the virus to infect (5).

Although experts have acknowledged this biological explanation for decreased susceptibility to infection for many years, there were no studies proving a direct correlation. However, in 2005, the first study providing tangible evidence of MC as an HIV prevention modality reported a 61 percent efficacy in preventing HIV infection (6). Two subsequent studies published in February 2007 confirmed this result at 53 percent and 51 percent efficacies (7,8). For this reason, MC has emerged at the forefront of HIV prevention as a possible pre-emptive strategy to alter the epidemiological course of

the virus. As new prevention modalities are implemented and HIV incidence decreases, global HIV prevalence might experience its first decline ever: a monumental step against the epidemic.

In many developing countries MC prevalence is already above 80 percent. This correlates to a markedly low HIV prevalence; conversely, countries with MC prevalence lower than 20 percent exhibit high HIV prevalence (5). It is not uncommon to find religious or cultural influences promoting

MC practices within high MC prevalence countries. For example, among the 49 developing countries that exhibit high MC prevalence, on average nearly 70 percent of the population is Muslim, while only 16 percent is Christian (9). This separation of MC prevalence is due to differing religious traditions, as Muslims commonly practice circumcision. Similarly, a widespread shift in cultural norms can alter MC prevalence. For instance, Botswana has customarily practiced MC, but MC prevalence has dropped below 20 percent due to Western world influence. This shift in MC practice has not, however, changed the overall acceptability: "over 80 percent of uncircumcised men



alone will not curb the incidence of HIV infection. Rather, a global MC program must be coupled with an informative participant education strategy. This will allow quantification of correlations between all preventative methods, and will lead to the institutionalisation of global HIV/AIDS public health policies within the affected countries.

Extensive research surrounding HIV/AIDS has provided the global community with a vast array of treatment and prevention options. Yet, despite a growing field of fluent experts contributing exhaustive countermeasures, no actual cure or vaccination for HIV exists to date. Though recent advances in antiretroviral therapy have lowered

[in Botswana] said they would like to be circumcised if it were performed safely and affordably" (10,11). The high demand for MC observed in Botswana is consistent across many other countries long-afflicted by endemic HIV, and is further propagated by the results of the recent MC trials. Consequently, cultural acceptability is not a strong hindrance to program implementation.

Unfortunately, the supporting trials cannot analyse all factors associated with HIV prevention. MC program effectiveness can be greatly altered by misconceptions surrounding its supplementary status in the preventative treatment canon (3). This is especially evident – and dangerous – when these misconceptions manifest themselves as a social norm, instilling a false sense of protection, thereby negating reasons for avoiding high risk behaviour. This change in behaviour, based upon perception of susceptibility, is known as "risk compensation" (12). Inconsistent condom use, increased sexual partners, and other high risk behaviours are among the many issues that can occur due to risk compensation, which consequently reduces MC efficacy (2, 10). Risk compensation, or at least the ability to detect it, was reduced in MC trials as participants were educated on avoiding risky behaviour and provided with free condoms (13). While a MC program would ideally be accompanied by comprehensive informed consent consultations and education on prevention methods, the extent to which the procedure prevents HIV infection can still be misinterpreted.

Despite the problem of risk compensation, human behavioural factors can still be improved to effectively decrease infection incidence. As observed in Zambian youth aged 15-24, there is a direct correlation between higher education and decreased high risk behaviours, which ultimately impacts HIV prevalence (14). A similar study was performed in rural Uganda which tracked risk behaviour changes after antiretroviral treatment and subsequent prevention counselling. Though some of this study population was already infected with HIV, the outcome was the same: treatment, counselling, and consistent testing lowered the incidence of high risk behaviour (15). Conversely, lack of awareness, inconsistent education, or propagation of misleading information greatly hinders HIV prevention efforts (16). For example, rural areas typically exhibit higher rates of risk compensation compared to urban populations because of the decreased exposure to prevention awareness and inaccessibility of educational resources (14, 16).

This problem of HIV education is not localised to rural areas and in fact even exists in the most developed countries. In Western Europe, the incidence of HIV diagnosis has nearly doubled in the past eight years: a statistic reinforced by a recent United Kingdom study demonstrating an increase in people unable to identify a single mode of HIV transmission (1). The United States ranked number eight in global HIV prevalence and, like Canada, hosts an HIV

positive population where one in every four is unaware of their infection; in Western Europe it is one in three (1). This unsuspecting population leads to an exponential propagation of HIV transmission through alteration of risk compensation. It is clear that the epidemic does not adhere to geographical, political, or economic boundaries.

Regardless of circumstances, this misinterpretation of risk is a direct result of an educational disparity apparent in every country, and thus impacts the global population. High risk behaviour stems from a lack of knowledge or perceived elimination of associated risks. The outcome is an overexposed population causing marked increases in the incidence and prevalence of HIV, which have been observed with consistency over the past 25 years of the HIV epidemic. In spite of the great demand for preventative measures, any premature deployment of a MC program will

inevitably fail at decreasing HIV infection rates as uneducated participants will likely fall victim to risk compensation. While MC as an HIV prevention modality is not a definitive solution, it is a pivotal benchmark providing a quantitative measurement of progress.

When united with comprehensive educational initiatives and worldwide uniformity, a global MC program will provide a formidable addition to current prevention strategies. It is through the institutionalisation of an inclusive global HIV prevention policy that each

affected country will begin to see decreases in infection and, as a result, contribute to a global HIV solution.



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