



IPPF Medical Bulletin

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Sexual violence

Claudia Garcia-Moreno

Sexual violence is a hidden issue in many women attending for healthcare. The definition in Panel 1 encompasses a wide range of acts, including forced/coerced sex in marriage and dating relationships, rape by strangers, sexual harassment (including demands for sexual favours in return for jobs or school grades), sexual abuse of children, and forced prostitution and sexual trafficking.¹ These forms of violence are common worldwide. While they can happen to men as well as women, to boys as well as girls, sexual violence most often affects women and girls. Rape and sexual abuse are also increasingly common in situations of armed conflict, most recently in Rwanda, Kosovo, Liberia and Congo, and among refugee and displaced populations.²

Panel 1: A DEFINITION OF SEXUAL VIOLENCE (from ref 1)

"Any act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic or otherwise, directed against a person's sexuality using coercion, by any person regardless of their relationship to the victim, in any setting, including but not limited to home and work."

In some countries there are additional forms of sexual violence such as child marriage and acts against bodily and sexual integrity of women such as female genital cutting or mutilation and obligatory inspections for virginity. Women may even be murdered by their relatives after they have been raped. In some settings the rapist may be absolved if he marries his victim.

While recognising the need to address all forms of sexual violence, this review will focus on the more widespread forms, particularly forced and coerced sex in the family, by intimate partners, and among adolescents.

Prevalence of sexual abuse

Data on sexual abuse are scarce and commonly incomplete. Much of the information comes from police and health services and figures from such sources are underestimates since only a small fraction of those experiencing sexual abuse reach these services. More reliable estimates have been obtained from specific surveys, particularly on sexual abuse in the context of intimate partner violence (also called domestic violence) and on the first sexual experience of adolescents.

Sexual violence by intimate partners and ex-partners

In certain countries nearly one in four women report sexual violence by an intimate partner.¹ Population-based studies indicate that sexual abuse is commonly a component of

intimate partner violence. Of battered women in the USA, 40–45% describe being forced by their male partners to have sex.⁴ More generally, 17.7% of women in Nicaragua reported attempted or completed forced sex in the last twelve months³ and 21.7% in their lifetime;⁴ in Canada, 8.7% of women in a large national sample reported attempted or completed forced sex by an intimate partner in their lifetime;⁵ in Mexico the figure was 23%;⁶ and in three provinces of South Africa, the prevalence of rape by an intimate partner or ex-partner was 4.5%, 7.2%, and 4.8%.⁷ Sexual violence often coexists with physical violence but not always; it is an issue in both developed and developing countries.

Child sexual abuse

The prevalence of child sexual abuse will depend on the definitions and age limits employed. Most studies ask adults about their childhood experiences of abuse, and the results are likely to be affected by recall bias. According to a meta-analysis of studies from around the world, the overall prevalence of child sexual abuse is 25% for females (5% involving intercourse, 13% contact abuse, 7% non-contact abuse), and 8% for males (2% intercourse, 3% contact and 3% non-contact).⁸ This analysis suggests that most of the abuse is experienced between 5 and 14 years of age. Sexual abuse in childhood is associated with subsequent high-risk behaviours (such as alcohol and drug use), early sex, and mental disorders;⁸ it is also a risk factor for sexual abuse in later life.

Forced first sex

Several studies from around the world indicate that the first sexual experience is commonly forced or unwanted – especially in females. For example, in South Africa 28% of women reported that their first sex had been forced, compared with 5% of men;⁹ and among 10–18-year-olds in nine Caribbean countries nearly half the females who had had intercourse, compared with one-third of the males, said that their first experience had been forced.¹⁰ In New Zealand the figures were 7% of females and 0.2% of males.¹¹

Sexual abuse in healthcare settings

While figures are hard to come by, sexual abuse of patients in healthcare settings has been identified as an issue in several countries.^{12,13} This is particularly important since healthcare settings are often the first point of call for women who have been abused: health institutions need to ensure that providers uphold ethical standards and that no abuse is tolerated.¹⁴

Risk factors for sexual abuse

Like other forms of abuse, sexual abuse involves complex interactions between the individual, family, community, and society. Factors that increase a woman's vulnerability to sexual violence include being young, consuming alcohol or drugs, having been abused sexually before, involvement in sex work, high number of sexual partners, and poverty.¹

Health consequences

Sexual violence is an important risk factor for various mental and physical disorders, both at the time of the abuse

and for years to come. It can be linked with homicide and injury, but a more frequent consequence is unwanted pregnancy (and commonly, therefore, unsafe abortion).¹ In the United States it was calculated that, on the assumption of a 5% pregnancy rate per rape, there would be over 32 000 pregnancies related to rape nationally each year.¹⁵ In Mexican rape crisis centres, pregnancy was reported in 15–18% of victims attending.¹⁶ Although most countries have legal provision for abortion in cases of rape the services are often not available, so that many women either resort to unsafe abortions or give birth to unwanted children. Sexual violence also increases the risk of sexually transmitted infections, including HIV/AIDS, and gynaecological disorders.¹ It is also associated with subsequent depression, substance abuse, anxiety and eating disorders, and post traumatic stress disorder.¹⁷ In a study in New Zealand, psychiatric symptoms were found in 20% of women who had been sexually abused in childhood, compared with a rate of 6% among non-abused women. Similar increases were found in women who had been sexually abused in adult life, and a slightly lower rate among those who had been physically abused (15%) in adult life.¹⁸ Panel 2 summarises the short-term and long-term health effects of sexual-relationship violence in adolescents.

Panel 2: SHORT-TERM AND LONG-TERM HEALTH EFFECTS OF SEXUAL VIOLENCE IN ADOLESCENCE

Short-term

Smoking
Substance misuse
Early age of first sex
Further sexual assault
Sexually transmitted infections
Pregnancy during adolescence
Violence
Depression
Suicidal ideation and attempts
Alcohol misuse
Increase in preterm delivery; poor pregnancy outcomes

Long-term

Mental ill-health
Increased sexual health risk behaviour and symptoms
Unwanted pregnancies
Sexually transmitted infections
Excess in physical disorders (eg, irritable bowel syndrome, gynaecological problems, heart disease, cancers)
Increase in infant mortality

(Source: Nurse J, WHO, in press).

What can health professionals do?

Sexual violence remains a taboo issue in many societies. Many women and men who have experienced sexual abuse are reluctant to speak of it because of shame, fear of not being believed, and the very real risk of being stigmatised or rejected. Health professionals have an important role to play in breaking the silence. As the first step, they must ensure that their own institutions do not commit abuses and that any perpetrators are disciplined and stopped.¹⁵ Women who report abuse need special care to ensure that their contact with the health service is not one of revictimisation. The health sector should offer high-quality services for these women including, for example, emergency contraception, treatment for sexually transmitted infections, documentation and gathering of evidence, and referral for counselling and other psychosocial support required in the long term.¹⁹ To ensure that it responds as well as possible,

the health sector needs to collaborate with women's organisations and crisis centres, as well as with the police and legal systems. Ultimately, the aim should be prevention, and this requires involvement of an even broader coalition including the media, schools, and communities.

More research is needed to understand the scale and nature of sexual abuse in different settings, as well as its meaning and impact on women's lives and health. We also need to develop systemic, coordinated, and well-evaluated interventions for prevention. Finally, the issue of sexual abuse should be integrated into the sexual and reproductive health agenda and services, so that providers are trained to support the many women who are distressed for this reason.

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The views expressed are not necessarily those of WHO.

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When will we have an effective vaccine against HIV?

William Lynn

The HIV/AIDS pandemic has led to at least 25 million deaths with an estimated 40 million persons currently living with HIV. 95% of HIV infection is within the developing world and, despite the success of anti-HIV drugs in improving the outcome for individual patients, an effective vaccine is the only real long-term solution. More than twenty years have passed since the human immunodeficiency virus (HIV) was identified as the cause of AIDS and there are many candidate vaccines, including several in human trials (Table 1); so why does an effective anti-HIV vaccine still seem far away?

Humoral immunity

To understand why HIV has posed major challenges to vaccine development we need to look at determinants of the immune response to this virus.¹ For many other viral infections, effective protective immunity can be achieved by stimulating circulating neutralising antibodies. This was the initial strategy with HIV, and the obvious target for neutralising antibodies was the HIV outer coat protein GP120. GP120 binds to CD4 cells and the virus gains entry to the cell via an interaction with the chemokine receptors CXCR4 (lymphocytes) or CCR5 (macrophages);² thus, blockage of GP120 by antibody might in theory prevent infection. But unfortunately, in vivo, GP120 forms a heavily glycosylated trimer that makes the active CD4-binding site inaccessible to many anti-GP120 antibodies.³ Furthermore, the important chemokine binding site is exposed only briefly after CD4 binding has triggered a conformational

change. Finally this conformational change following receptor engagement prevents many antibodies from neutralising GP120.⁴ Thus, many anti-GP120 antibodies fail to neutralise primary HIV isolates despite their ability to neutralise some laboratory strains with different glycosylation patterns. Certain of the vaccines based on presentations of GP120 have achieved modest protection in animal models, and results from the first large-scale phase III human trial have now been reported (www.vaxgen.com). Disappointingly, this vaccine appears not to protect against HIV (www.iavi.org). Persons with chronic HIV infection develop a broad range of antibodies against HIV antigens, but study of their antibody responses has identified only five monoclonal antibodies capable of neutralising primary HIV isolates.¹ None of the existing vaccine candidates can generate the sustained high neutralising antibody activity necessary to provide protective immunity. Moreover, the high mutation rate of HIV means that, even where an effective neutralising antibody has been induced, mutant viruses can escape vaccine control.

Cell-mediated immunity

If humoral immune responses alone are not the answer, what about vaccines that induce cytotoxic cell-mediated immune responses – often referred to as T-cell vaccines (Table 1)? In HIV-infected persons, strong CD8-mediated immune responses are associated with good control of the virus and with slow disease progression.² Cytotoxic T cells act only against cell-associated virus, so they cannot prevent a phase of viral replication, even if it is shortlasting. Strong cell-mediated immune responses have, however, been detected in certain individuals who despite extensive exposure to HIV seem to have escaped infection. This offers the hope that protective immunity may be achievable

TABLE 1 Some of the current HIV vaccine approaches in human trials

Vaccine	Description	Progress
DNA/adeno Sponsored by NIAID	Naked DNA priming HIV clade B HIV genes in adenovirus vector	Phase 1
Nef/tat fusion/GP120 Sponsored by NIAID	Fusion protein of <i>nef/tat</i> /GP120 HIV clade B	Phase 1
Lipo-4T lipopeptide Sponsored by ANRS	Lipopeptide preparation containing <i>gag, pol, nef</i> gene products HIV clade B	Phase 1
VRC-HIV DNA009 Sponsored by VRC/NIAID	Naked DNA vaccination – <i>env, gag, pol, nef</i> genes HIV clades A, B, C	Phase 1
DNA/MVA Sponsored by IAVI, MRC	Naked DNA priming HIV clade A HIV <i>gag</i> gene + 25 CTL epitopes in modified vaccinia vector (MVA)	Phase 1/2
AIDSVAX/ALVAC Sponsored by VaxGen	HIV genes <i>env, gag, pol</i> + CTL epitopes in a canarypox vector +/-GP120 boosting HIV clade B	Phase 2
AIDSVAC Sponsored by VaxGen	GP120 HIV clades B, E	Phase 3 in USA, no significant protection
AIDSVAC Sponsored by VaxGen	GP120 HIV clades B, E	Phase 3 in Thailand, no significant protection

Adapted from International Aids Vaccine Initiative website (www.iavi.org).

NIAID=National Institute of Allergy and Infectious Diseases; ANRS=National Agency for AIDS Research (France); VRC=Vaccine Research Centre;

IAVI=International Aids Vaccine Initiative; MRC=Medical Research Council UK; CTL=cytotoxic lymphocyte.

without need for antibody production.⁵ Thus, a vaccine capable of inducing strong cytotoxic lymphocyte immune responses could potentially prevent or at least limit the effects of HIV infection.

Unfortunately there are also obstacles to the T-cell vaccine approach. Firstly, there are several different clades of HIV and these have to be recognised by cytotoxic lymphocytes in association with MHC molecules. This means that, in practice, any vaccine based on cell-mediated immunity has to induce immune responses to a broad range of viral epitopes to ensure cross-clade protection. Secondly, HIV can escape cell-mediated control, presumably through mutation;^{6,7} this has been demonstrated during infection with a single viral strain, but case reports of superinfection with other HIV strains suggest that vaccine escape mutants could threaten the effectiveness of any vaccine programme.⁸

The most immunogenic T-cell vaccines employ a priming strategy - for example, with DNA immunisation - followed by challenge with protein subunit vaccines to induce a broad immune response to various HIV gene products including gag, pol, env and nef. These have been successful in inducing anti-HIV responses, but a drawback is that repeated boosting is needed to sustain the necessary high level of cytotoxic lymphocytes. For clinical purposes this is impractical. Without a further leap forward in the technology, such vaccines are unlikely to provide a long-term protective immune response against HIV challenge.¹ However, there is room for optimism in that vaccines of this sort may prove capable of protecting against low inocula of HIV, and that by stimulating anti-HIV cytotoxic lymphocyte responses they may retard disease progression in persons who become infected despite vaccination. A vaccine with these benefits would have a substantial impact on the HIV disease burden in many countries with high rates of HIV infection and is clearly a goal worth pursuing.

Live virus vaccines

How could sustained and potentially protective anti-HIV responses be induced? The most effective vaccines in non-human primate retroviral models have been based on live attenuated viruses. For example, deletion of the *nef* gene reduces (but does not abolish) the pathogenicity of simian immunodeficiency virus strains and infection with this modified virus protects rhesus monkeys against subsequent

challenge with wild-type virus.⁹ This approach is unlikely to be applied to human beings in the near future because of the safety issues.

Conclusion

Repeated vaccination is impractical, but optimisation of the prime-boost approach to immunisation, perhaps combined with different subunit vaccines, might generate better and longer-lasting immune responses.¹⁰ A truly protective HIV vaccine will have to await further advances in our understanding of anti-HIV immunity and in vaccine technology. Until then the best hope is that one of the current T-cell vaccine approaches (Table 1) will prove effective enough to modify the course of HIV infection in high-risk countries or groups.

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Book review

Reproductive Health and Human Rights

Nearly ten years have passed since the International Conference on Population and Development in Cairo. At this conference, 179 countries formally agreed that population and development were linked and recognised that individuals' needs and rights in sexual and reproductive health and the empowering of women were crucially important in advancing development and reducing poverty. The conference recommended an integrated rights-based approach to population issues. Unfortunately, the programme of action has been greatly undermined by the refusal of certain key development agencies to fund controversial aspects such as projects for safe abortion and promotion of condoms. In *Reproductive Health and Human Rights*,¹ Rebecca Cook, an expert in human rights law, Bernard Dickens, an authority in medical health law and ethics, and Mahmoud Fathalla, a renowned figure in reproductive health, note that "reproductive health is often compromised not because of lack of medical knowledge, but because of infringements of women's human rights. Powerlessness of women is a serious health hazard." Much of the book is

devoted to fifteen case studies illustrating dilemmas encountered in impoverished settings. Each describes the medical, ethical, legal, and human rights aspects before turning to the practical approaches according to clinical duty and the obligations of healthcare systems. The subjects range from sexual assault and emergency contraception to counselling and caring for an HIV-positive woman. One case study, set in a country with a high rate of population growth, relates to involuntary female sterilisation in a government-run hospital serving an impoverished community. It indicates how Dr T, a hospital doctor faced with carrying out the edict, can invoke his ethical duty of respect for the patient's autonomy and what he can do if threatened with disciplinary action. This theoretical example echoes recent events in Peru, where a coercive sterilisation policy was reversed only after an international legal battle. The book serves well to illustrate how medicine, ethics, and law can interact to improve reproductive and sexual health.

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