Violence against women I

Violence against women: global scope and magnitude

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An increasing amount of research is beginning to offer a global overview of the extent of violence against women. In this paper we discuss the magnitude of some of the most common and most severe forms of violence against women: intimate partner violence; sexual abuse by non-intimate partners; trafficking, forced prostitution, exploitation of labour, and debt bondage of women and girls; physical and sexual violence against prostitutes; sex selective abortion, female infanticide, and the deliberate neglect of girls; and rape in war. There are many potential perpetrators, including spouses and partners, parents, other family members, neighbours, and men in positions of power or influence. Most forms of violence are not unique incidents but are ongoing, and can even continue for decades. Because of the sensitivity of the subject, violence is almost universally under-reported. Nevertheless, the prevalence of such violence suggests that globally, millions of women are experiencing violence or living with its consequences.

In the past few years, WHO, the American Medical Association, International Federation of Obstetricians and Gynaecologists, Royal College of Nursing, and other professional medical organisations have made statements about the public-health importance of violence against women.1 Several organisations have developed guidelines on how health workers can better identify, support, and refer victims of violence. These actions result from a growing recognition that violence represents a serious violation of women's human rights, is an important cause of injury, and is a risk factor for many physical and psychological health problems. Understanding genderbased violence and the appropriate case management of women with a current or previous history of violence are now recognised as core competencies for health workers. In the next six editions of *The Lancet*, different authors will discuss current challenges and debates on violence against women and public health. As an introduction, we present an overview of the different forms of violence against women to convey an idea of its global magnitude, and discuss characteristics that distinguish violence against women from other forms of violence.

Distinguishing violence against women from other forms of violence

The UN Declaration on the Elimination of Violence Against Women defines violence against women as:

 \dots any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women.²

Although broad in its scope, this statement defines violence as acts that cause or have the potential to cause harm, and emphasises that these acts are rooted in sex inequality. This focus on women does not deny the fact that men experience violence. Indeed, war, ethnic cleansing, and gang and street violence are significant causes of male morbidity and mortality.^{3,4} However, as violence against men often differs in its aetiology and response strategies, it warrants separate consideration.

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In practice, the term violence against women encompasses an array of abuses targeted at women and girls (figure 1), ranging from sex-selective abortion to the abuse of elder women. The term includes geographically or culturally specific forms of abuse such as female genital mutilation, dowry deaths, acid throwing, and honour killings (the murder of women who have allegedly brought shame to their family), as well as forms of violence that are prevalent worldwide such as domestic violence and rape. There are many potential perpetrators, including spouses and partners, parents, other family members, neighbours, teachers, employers, policemen, soldiers, and other state employees.

Violence against women is not only a manifestation of sex inequality, but also serves to maintain this unequal balance of power. In some cases, perpetrators consciously use violence as a mechanism for subordination. For example, violence by intimate partners is often used to demonstrate and enforce a man's position as head of the household or relationship. For other forms of violence, the subordination of women might not be the explicit motivation of the perpetrator, but is nevertheless a consequence of his actions. For example, a man who rapes a woman whom he judges to be sexually provocative might justify his act as being an appropriate punishment for her transgression of socially determined rules of female behaviour. Women themselves frequently do not challenge accepted norms of female behaviour because of the fear of being attacked or raped. Thus, women's unequal status helps to create their vulnerability to violence, which in turn fuels the violence perpetrated against them.

Global research on violence against women

Over the past 20 years, the evidence of the extent of violence perpetrated against women has increased and is beginning to offer a global overview of the magnitude of this abuse (figure 2). We will now discuss the magnitude of some of the most common and most severe forms of violence against women. When reviewing the findings it is important to note that because of the sensitivity of the subject, violence against women is almost universally under-reported.⁵⁻⁷ Thus, these findings might be more accurately thought of as representing the minimum levels of violence that occur.

Although there are many different forms of violence against women, they nonetheless often share certain characteristics. For example, most forms of violence,

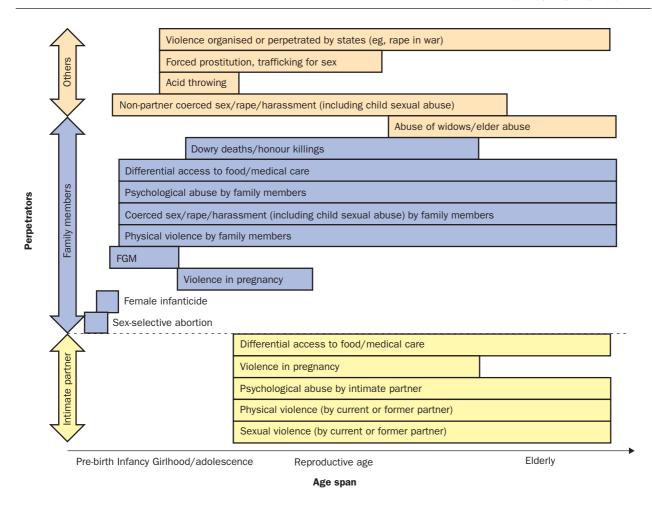


Figure 1: **Violence and abuse against women over time** FGM=female genital mutilation.

including intimate partner violence, child sexual abuse, and much non-partner sexual abuse do not occur as unique incidents, but are ongoing over time, even over decades. Often, the woman not only knows the perpetrator before the first incident, but might live with or interact regularly with him. Also particular to most forms of violence against women is the way in which society attributes blame to female victims. Women experiencing intimate partner violence, for example, are frequently accused of having provoked the violence by their disobedience, failure as a wife, or infidelity. Girls or women who have been sexually assaulted or raped are frequently said to have "asked for it" by the way they were dressed or behaved—even when the victim is a child.

Intimate partner violence

One of the most common forms of violence against women is that perpetrated by a husband or other intimate male partner. Intimate partner violence—often termed domestic violence—takes various forms, including physical violence ranging from slaps, punches, and kicks assaults with weapon and homicide a (figure 3); and sexual violence takes forms such as forced sex, or forced participation in degrading sexual acts. These are frequently accompanied by emotionally abusive behaviours such as prohibiting a woman from seeing her family and friends, ongoing belittlement or humiliation, or intimidation; economic restrictions such as preventing a woman from working, or confiscating her earnings; and other controlling behaviours.

The most accurate data on the prevalence of intimate partner violence comes from cross-sectional population surveys. Over the past 16 years, more than 50 population-based surveys on violence by intimate partners have been done in various parts of the world. In these studies, women are asked directly about their experiences of specific acts of violence—eg, "has a current or former partner ever hit you with his fist or with something else that could hurt you?".8 The findings of these surveys indicate that between 10% and 50% of women who have ever had partners have been hit or otherwise physically assaulted by an intimate male partner at some point in their lives. In a review of surveys, between 3% and 52% of women reported physical violence in the previous year.9

Research also suggests that many women are sexually assaulted by their partners. For example, in a cross-sectional household survey in one province in Zimbabwe, 26% of women who had ever been married reported being forced to have sex when they did not want to, with 20% reporting that this occurred in the year before the survey. When asked about the type of force used, 23% reported physical force, 20% reported that their partner shouted, 12% reported being forced while they were asleep, and 6% reported the use of threats.¹⁰

Findings on the prevalence of physical and sexual violence by intimate partners varies greatly between studies. This variation can be attributed not only to the differences in the levels of violence between settings, but

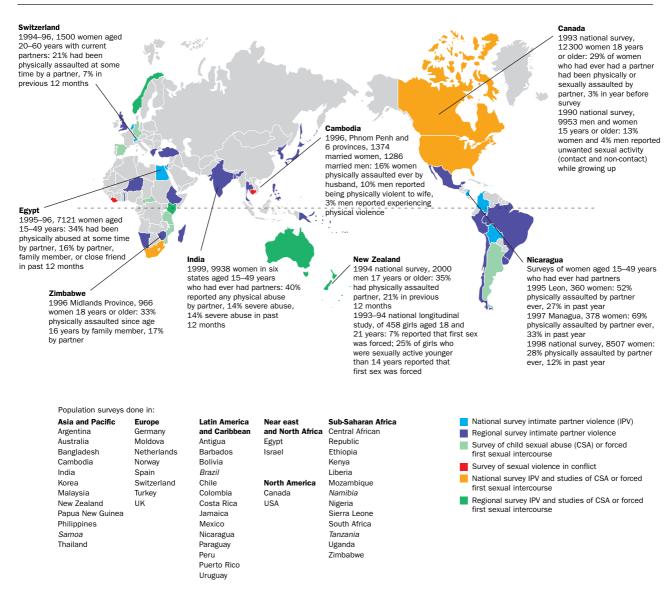


Figure 2: Global research on violence against women

Sources of data: Heise et al (1999).9 Text in italic show ongoing studies that are part of the WHO multicountry study on women's health and domestic violence.8

also to differences in research methods, definitions of violence, sampling techniques,11 interviewer training and skills,5 and cultural differences that affect respondents' willingness to reveal intimate experiences. For these reasons, it is not possible to make direct comparisons between cultures or countries, or to make judgments about in which society intimate partner violence is worst. However, the extent that prevalence varies between local communities can be explored within the same study. For example, a survey of married men in four districts of Uttah Pradesh noted that the extent to which men reported ever forcing their wife to have sex varied substantially between neighbouring districts (14–36%), as did the extent to which they reported having hit their wives in the past year (10-33%).12 In-depth research is needed to identify context-specific factors affecting such variation.

Rape and sexual coercion

Representative studies of violent and coerced sex by non-intimate partners are few. Most available data come from police and justice records, rape crisis centres, and retrospective studies of child sexual abuse. From the population studies that have been done, it is clear that although the common image of rape is a violent attack by a stranger, in reality, most forced sex is perpetrated by individuals known to the victim, such as intimate partners, male family members, acquaintances, and individuals in positions of authority. Sexual violence by men who are not intimate partners may involve physical force or, more usually, non-physical coercion to compel girls and women to have sex against their will. Nonphysical pressure often includes blackmail, trickery, and threats. Rape can occur while women are asleep, under the influence of alcohol, recreational drugs, or other drugs such as the date-rape drugs rohypnol and gamma hydroxybutyrate. Although sexual assaults by strangers are widely acknowledged as crimes, by contrast, rape in marriage, sexual coercion in schools, sex in return for a job, and forced marriage are tolerated or socially condoned in many countries. Rape of women by gangs of men are common in South Africa,13 Papua New Guinea,14 and some parts of the USA.15 These attacks have been associated with gang initiation, rites of passage, ethnic hatred, and racism, as well as with punishment.



Figure 3: Quilt made in Zimbabwe by WiLDAF (Women in Law and Development) to remember women murdered by men Watts, Zimbabwe.

Forced sexual initiation

Data on forced sexual initiation come from reproductive health studies exploring the context of sexual initiation both within and outside marriage. Well designed cross-sectional studies of forced first sex have been implemented in many countries, including Tanzania, South Africa, and New Zealand. In these studies, 28%, 40%, and 7% of women, respectively, reported that their first sexual intercourse was forced. Research also suggests that the younger a woman is at first intercourse, the more likely it is that force was used. In the New Zealand study, for example, 25% of girls reporting first sex before age 14 years stated that it had been forced.

Sexual abuse of girls

Child sexual abuse includes rape, sexual touching of a child, forcing a child to touch another individual sexually, exposure to or participation in pornography, and forcing a child to have sex with another person. Frequently, these sexual violations occur between an adult and a child (defined as statutory rape), or involve non-consensual sexual contact between a child and a peer. Abuse often persists over time, and perpetrators frequently use threats and other manipulative tactics to keep children from disclosing abuse to others. The most common perpetrator of child sexual abuse is a father or another male family member. Abuse by teachers, childcare workers, family friends, religious leaders, and neighbours has also been reported in many countries.

Current statistics of child sexual abuse come mainly from retrospective population-based studies. However, even in retrospective studies there are substantial barriers to disclosure that make the collection of representative data on the extent of childhood sexual abuse extremely difficult. For example, in three countries in an ongoing WHO multicountry study on women's health and domestic violence, the percentage of women who reported sexual abuse before age 15 years during face-to-face interviews almost doubled when researchers used an anonymous method of disclosure compared with direct questioning. Despite the potential for under-reporting, findings suggest that child sexual abuse is not uncommon for girls, and to a lesser degree boys, and that, regardless of the sex of the victim, most perpetrators are male, and known to the victim.9 A review by Finkelhor19 of studies from 20 countries, including ten national representative surveys, showed rates of childhood sexual abuse of 7-36% for girls, and 3–29% for boys, with most studies reporting 1.5 to 3 times more sexual violence against girls than boys. Again, the variation in prevalence may be attributed partly to methodological and context-specific factors.

Trafficking, forced prostitution, exploitation of labour, and debt bondage

During the past decade, a rapidly growing worldwide industry has developed in trafficking women and girls for forced labour and sexual exploitation (panel). War, displacement, and economic and social inequities between and within countries, and the demand for low-wage labour and sex work drive this illicit trade in women. 20,21 Often controlled by mafia, gangs, or highranking police and military figures, trafficking in women and girls is a highly profitable business. 22-25 Most definitions of trafficking, including that in the United Nations Palermo Convention, highlight the use of violence, coercion, deception, or debt-bondage; the exploitative relationship between trafficking agents and victims; and the misuse of power and control over women for profit. 26-28

There are no reliable statistics on the number of women and children who are trafficked. Rough estimates suggest that 700 000 to 2 million women and girls are trafficked across international borders every year. ²⁹ Importantly, this figure does not include the substantial number of women

Trafficking case study

I am 23 years old. I was working in a factory in Moldavia and it closed down. My brother moved to England and I wanted to be there with him. A friend told me about an agency: they were offering jobs in Italy. I thought it would be a good way to meet my brother. We travelled across the border into Serbia. As we entered the apartment they locked the door. I went to run out of the door, but one of the buyers caught me, he hit me hard across the face, the blood moved into my mouth fast. Then he pushed me onto the bed, he ripped my clothes as if they were paper and as I fought it became worse, he bit me hard on my breast. He told me to shut up, that he would kill me if I screamed again.

He forced me night after night. They had guns . . . they told me "you are going to Kosovo". We were forced to have sex with up to five men every night, the owner also used any of the girls whenever he wanted to. We were not allowed to go out and we were locked into one small room all day long. There were eight of us in the room there was . . . hardly anything to eat.

From: International Office of Migration, Counter Trafficking Unit, Pristina, Kosovo (1999). Information leaflet: You pay for a night—she pays with her life.

and girls who are bought and sold within their own countries, for which there are scant data. Reports of trafficking in women come from nearly every world region. The greatest number of victims are thought to come from Asia (about 250000 per year), the former Soviet Union (about 100000), and from central and eastern Europe (about 175000). An estimated 100000 trafficked women have come from Latin America and the Caribbean and more than 50000 from Africa. The former Soviet Union and central and eastern Europe may currently be the largest source countries for women trafficked into prostitution.

Women are often deceived into believing they have secured jobs as nannies, waitresses, or dancers, only to discover that they have been trafficked into bonded or forced prostitution and other forms of slavery-like situations, such as domestic servitude, sweatshop labour, and begging. 22,31,32 Many women are confined, beaten, and raped, and most have vital documents, such as their passports and visas, confiscated. Data from the International Organization for Migration office in Kosovo show that, of the 130 women who were assisted during the first 4 months of 2001 (most of whom were Moldovan), 72% were promised false opportunities abroad, 11% were kidnapped, and 91% received no payment for their services. 60% had no access to medical services despite the high-risk nature of their work.33

Violence against prostitutes

Physical and sexual violence towards prostitutes has seldom been the focus of public or academic interest. However, research is beginning to show that prostitutes often face physical and sexual violence from clients and other individuals such as pimps, club owners, and law enforcement workers. For example, in a UK survey of 240 prostitutes in Leeds, Glasgow, and Edinburgh 50% of prostitutes working outdoors and 26% of those working indoors reported some form of violence by clients in the past 6 months.34 Among prostitutes working outdoors, 81% had experienced violence by clients. Of these women, 33% had been beaten, 30% threatened with a weapon, 25% choked, 27% raped vaginally, and 9% slashed or stabbed. In a survey of 540 female prostitutes in Bangladesh, 49% had been raped and 59% beaten by police in the past year.35 These figures show the extent to which women in sex work are vulnerable to violence as a result of the conditions of their work and their marginalised status.

Rape in war

The wars in the former Yugoslavia and Rwanda focused international attention on the use of rape as a deliberate strategy to undermine community bonds, weaken resistance to aggression, and, in the former Yugoslavia, to perpetrate ethnic cleansing through impregnation. But, the rape of women in war is not a new phenomenon.36 Japanese troops raped civilian women systematically in Korea, China, and the Philippines during World War II.37 Rape has also been documented in the war of independence in Bangladesh; in civil wars such as those in Liberia, Uganda, and Rwanda; 38 and during social and political uprisings such as the recent anti-Chinese riots in Indonesia. There are no accurate data on rape during war. For example, estimates of the number of Muslim women raped by Serb soldiers during the 1992-95 conflict in Bosnia-Herzegovina vary from 20 000 to 50 000—ie, by as much as 1.2% of the total prewar female population.39

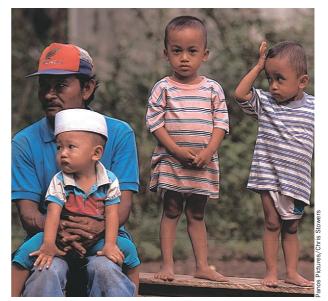


Figure 4: Indonesian family with many sons

Until very recently, violence against women was thought an insignificant form of collateral damage. It is was only this year that the International Criminal Tribunal in The Hague defined sexual offences as a crime against humanity and convicted three Bosnian Serb soldiers of raping and torturing Muslim women and girls who they enslaved, abused, and rented and sold to other soldiers.⁴⁰ Similarly, it is only relatively recently that sexual violence in refugee camps has been identified by relief agencies as an issue that needs formal attention and response.⁴¹

Sex-selective abortion, female infanticide, and deliberate neglect of girls

In countries such as China, Taiwan, South Korea, India, Pakistan, and some sub-Saharan African countries the ratio of men to women is higher than would be expected from the typical sex ratio at birth and the typical differential mortality (figure 4).42 High female mortality rates resulting from sex-selective abortion, female infanticide (the deliberate killing of female infants soon after birth), and systematic and often fatal neglect of the health and nutritional needs of girls cause this demographic inequality. It is estimated that worldwide between 60 and 100 million women and girls are "missing". 43,44 For example, in the latest Indian census in 1991, only 929 girls and women were counted for every 1000 boys and men. After adjustment for expected differences in fertility and life-expectancy, these census figures suggest that between 22 and 37 million Indian girls and women are "missing", with the greatest excess mortality in girls younger than 4 years.

The increasing availability of ultrasonograph examination has facilitated early termination of female fetuses. South Korea has the highest sex ratio at birth, at 117·2 boys for every 100 girls in 1990. Sex ratios increase with parity, and for third children, 185 boys are born for every 100 girls.⁴⁵ Despite the magnitude of this social and ethical problem, female infanticide has received little international attention from policymakers, public-health professionals, and the medical profession.

Conclusion

We have reviewed some of the most prevalent and severe forms of violence that are widely perpetrated against women. Our list is not exhaustive. We have not, for example, included several important forms of violence against women, including elder female abuse, dowry deaths, acid throwing, and female genital mutilation.

Research into violence against women is increasing, but there are no widely agreed definitions of the different forms of such violence that could be used to standardise Furthermore, findings. context-specific variations in the willingness of respondents to disclose experiences of violence and differences in the populations in which the studies are done make cross-country and cross-study comparison difficult. The figures presented here are minimum estimates, and still they suggest that globally, millions of women are experiencing violence or living with its consequences. This prevalence raises many questions that will be analysed in subsequent articles in this series: what are the health consequences of these high rates of violence against women? What are the main causes? What role can the health sector have in primary, secondary, and tertiary prevention? Is it possible to do research with women living with violent partners without endangering these women? Does the health sector also victimise women? Ultimately, the sheer scale of violence against women forces the question of what it will take to translate increasing recognition of the global prevalence of this abuse into meaningful, sustained, and widespread action.

References

- 1 WHO. Violence against women. Geneva: WHO/FRH/WHD, 1998.
- 2 United Nations. Declaration on the elimination of violence against women. New York: United Nations General Assembly, 1993.
- 3 WHO Ad Hoc Committee on Health Research Relating to Future Intervention Options. Investing in health research and development TDR/Gen/96·1. Geneva: WHO, 1996.
- 4 Zwi AB. Numbering the dead: counting the casualties of war. In: Bradby H, ed. Defining violence: understanding the causes and effects of violence. Aldershot: Avebury Press, 1996: 99–124.
- 5 Ellsberg M, Heise L, Pena R, Agurto S, Winkvist A. Researching violence against women, methodological considerations from three Nicaraguan studies. *Studies Fam Planning* 2001; 32: 1–16.
- 6 Koss MP. The under-detection of rape: methodological choices influence incidence estimates. J Soc Issues 1992; 48: 61–75.
- 7 McNally RJ, Metzger LJ, Lasko NB, Clancy SA, Pitman RK. Directed forgetting of trauma cues in adult survivors of childhood sexual abuse with and without posttraumatic stress disorder § Abnorm Psychol 1998; 107: 596–601.
- 8 WHO. WHO multi-country study on women's health and domestic violence progress report. Geneva: WHO/WHD, 2001.
- 9 Heise L, Ellsberg M, Gottemoeller M. Ending violence against women: population reports volume 27, number 4. Baltimore: Johns Hopkins University, School of Public Health, 1999.
- 10 Watts C, Keogh E, Ndlovu M, Kwaramba R. Withholding of sex and forced sex: dimensions of violence against Zimbabwean women. *Reprod Health Matters* 1998; 6: 57–65.
- 11 O'Muircheartaigh C, Campanelli P. The relative impact of interviewer effects and sample design on survey precision. *J R Stat Soc A* 1998; **161:** 63–77.
- 12 Narayana G. Family violence, sex and reproductive health behaviour among men in Uttar Pradesh, India 1996. Unpublished report cited in Heise et al, 1999.
- 13 Jewkes R, Abrahams N. The epidemiology of rape and sexual coercion in South Africa: an overview. *Soc Sci Med* (in press).
- 14 Jenkins C. Women and the risk of AIDS: study of sexual and reproductive knowledge and behavior in Papua New Guinea. Washington: International Center for Research on Women, 1993.
- 15 Bourgois P. In search of masculinity—violence, respect and sexuality among Puerto Rican crack dealers. *Br J Crim* 1996; **36**: 412–27.
- 16 Matasha E, Ntembelea T, Mayaud P, et al. Sexual and reproductive health among primary and secondary school pupils in Mwanza, Tanzania: need for intervention. *Aids Care* 1998; 10: 571–82.
- 17 Buga GAB, Amoko DHA, Ncayiana D. Sexual behaviour, contraceptive practices and reproductive health among school adolescents in rural Transkei. S Afr Med J 1996 86: 523–27.

- 18 Dickson N, Paul C, Berbison P, Sliva P. First sexual intercourse: age, coercion and later regrets reported by a birth cohort. BMJ 1998; 316: 29–33.
- 19 Finkelhor D. The international epidemiology of child sexual abuse. Child Abuse Neglect 1994; 18: 409–17.
- 20 Skrobanek S, Boonpakdi N, Janthakeero C. The traffic in women: human realities of the international sex trade. London: Zed Books, 1997
- 21 Wijers M, Lap-Chew L, eds. Trafficking in women: forced labour and slavery-like practices in marriage, domestic labour and prostitution. Utrecht: STV, 1997.
- 22 Asia Watch, A modern form of slavery. New York: Human Rights Watch, 1993.
- 23 Caouette T, Saito S. To Japan and back: Thai women recount their experiences. Geneva: International Organization for Migration, 1999.
- 24 O'Neill RA. International trafficking to the United States: a contemporary manifestation of slavery and organized crime—an intelligence monograph. Washington: DCI Exceptional Intelligence Analyst Program, 1999.
- 25 Phongpaichit P, Piriyarangsan S, Treerat N. Guns, girls, gambling, ganja: Thailand's illegal economy and public policy. Chaing Mai: Silkwork Books, 1999.
- 26 Global Alliance Against Trafficking in Women (GAATW). Human rights and trafficking in persons: a handbook. Bangkok: GAATW, 2001.
- 27 Salt J, Hogarth J. Migrant trafficking and human smuggling in Europe: a review of the evidence. In: Laczko F, Thompson D, eds. Migrant trafficking and human smuggling in Europe: a review of the evidence with case studies from Hungary, Poland and Ukraine. Geneva: IOM, 2000.
- 28 United Nations General Assembly. Protocol to prevent, suppress and punish trafficking in persons, especially women and children, supplementing the UN Convention against Transnational Organized Crime (UN doc A/45/49, vol 1). Palermo: UN, 2001.
- 29 O'Neill RA. International trafficking to the United States: a contemporary manifestation of slavery and organized crime—an intelligence monograph. Washington: DCI Exceptional Intelligence Analyst Program, 1999.
- 30 International Organization for Migration (IOM). New IOM figures on the global scale of trafficking: Trafficking in Migrants Quaterly Bulletin. Geneva: IOM, 2001.
- 31 Miko FT. US State Department, Foreign Affairs, Defense and Trade Division, congressional research service report 98–649C—Trafficking in women and children: the US and international response, 2000. (Available from: http://www.usinfo.state.gov/topical/global/traffic/crs0510.htm [accessed Dec 6, 2001]).
- 32 United Nations Economic and Social Commission for Asia and the Pacific. Sexually abused and sexually exploited children and youth in the Greater Mekong subregion: a qualitative assessment of their health needs and available services. New York: United Nations, 2000.
- 33 IOM Kosovo, Counter Trafficking Unit. Return and reintegration project, situation report. Pristina: IOM, 2001.
- 34 Church S, Henderson M, Barnard M, Hart G. Violence by clients towards female prostitutes in different work settings: questionnaire survey. BMJ 2001; 322: 524–25.
- 35 Jenkins C. Street sex workers in Dhaka: their clients and enemies. In: Striving to combat violence—the international psychological conference on violence against women and children: University of Dhaka, 1999.
- 36 Jennings PJ, Swiss S. Health and human rights: women and sexual violence. *Lancet* 2001; **351:** 302–04.
- 37 Durham H, Loff B. Japan's 'comfort women'. Lancet 2001; 357: 302.
- 38 Swiss S, Giller J. Rape as a crime of war, a medical perspective. § Am Med Assoc 1993; 270: 612–15.
- 39 UNICEF. Women in transition: the MONEE project CEE/CIS/Baltics regional monitoring report no 6. Florence: UNICEF, 1999.
- 40 Hargreaves S. Rape as a war crime: putting policy into practice. *Lancet* 2001; **357:** 737.
- 41 United Nations High Commission for Refugees (UNHCR). Reproductive health in refugee situations, an inter-agency field manual. Geneva: UNHCR, 1999.
- 42 Cohen A. Excess female mortality in India: the case of Himachal Pradesh. *Am J Pub Health* 2000; **90:** 1369–71.
- 43 Coale AH. Excess female mortality and the balance of the sexes in the population. *Popul Dev Rev*1991; 17: 517–23.
- 44 Sen A. Missing women. *BMJ* 1992; **304:** 587–88.
- 45 East-West Center Program on Population. Evidence mounts for sexselective abortions in Asia: Asia-Pacific population and policy report no 34. Honolulu: East-West Center, 1995.