

Sex-work harm reduction

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Sex work is an extremely dangerous profession. The use of harm-reduction principles can help to safeguard sex workers' lives in the same way that drug users have benefited from drug-use harm reduction. Sex workers are exposed to serious harms: drug use, disease, violence, discrimination, debt, criminalisation, and exploitation (child prostitution, trafficking for sex work, and exploitation of migrants). Successful and promising harm-reduction strategies are available: education, empowerment, prevention, care, occupational health and safety, decriminalisation of sex workers, and human-rights-based approaches. Successful interventions include peer education, training in condom-negotiating skills, safety tips for street-based sex workers, male and female condoms, the prevention-care synergy, occupational health and safety guidelines for brothels, self-help organisations, and community-based child protection networks. Straightforward and achievable steps are available to improve the day-to-day lives of sex workers while they continue to work. Conceptualising and debating sex-work harm reduction as a new paradigm can hasten this process.

Sex work and injection drug use are among the most perilous activities worldwide. Harm reduction has stimulated global debate about drug use, and the application of harm-reduction principles to interventions such as needle exchange has reduced HIV spread and improved the lives of drug users.¹ Since drug users might participate in sex work to pay for drugs, drug-user harm reduction includes condom promotion, and sex workers could use drugs to cope with psychological, emotional, and physical stress.²⁻⁵ Safe-sex campaigns and social marketing of condoms are based on harm-reduction principles. The process of harm reduction is not new to the study of sex work. Harm-reduction and risk-reduction strategies have been adopted by health authorities, sex worker organisations, and sex workers themselves. This Review aims to (1) examine studies of sex work, by concentrating on peer-reviewed publications, and classify harms and harm-reduction strategies into overall themes; and (2) focus on simple, available strategies to improve sex workers' lives. Male and trans-sexual sex workers face harms and can benefit from harm-reduction strategies; however, this Review will not focus on these topics or the specific issues of clients outside of the general theme of sex-work harm reduction.

Sex-work harm reduction has been proposed by the International Harm Reduction Development (IHRD) programme as a framework for discussion, action and research.⁶ Sex-work harm reduction has also been conceptualised in newsletters, booklets, reports and conference abstracts.⁷⁻¹²

Sex-work harms

Differences in social context need to be considered for sex-work harms to be meaningful. In some societies, sex work is legal or decriminalised; sex workers have access to health and social services; and they are not heavily stigmatised or economically destitute.¹³ Alternatively, sex work could be a survival tactic during severe societal disruption when no services are available and life necessities are scarce.¹⁴ Most societies exist between

these extremes and sex-work harms thus vary from place to place.² Poverty, war, globalisation, and neocolonialism are important causes of the international sex-work trade² but these issues are beyond the realm of harm reduction.

Drug use

Injection drug use is common in sex workers in many locations.^{2-5,15-17} Sex workers who inject drugs might use condoms less consistently and, for more money, they might agree to unprotected sex or anal sex.^{3,4,16,18,19} Individuals who share needles, syringes, and drug injection paraphernalia are at risk of HIV, hepatitis B and C, and syphilis.^{20,21} Female sex workers could be in relationships with male injectors who mix the drug and inject the women, increasing their HIV risk.²² Physical and sexual abuse by customers has been associated with drug use in sex workers.^{15,23} Injection drug use can cause

Search strategy and selection criteria

For peer-reviewed publications, I searched MEDLINE (from 1966) and EMBASE (from 1980) using the MeSH terms "prostitution" and "risk reduction". UN, UNAIDS, and WHO publications were searched online with "sex work", "sex worker", "sex trade", "prostitution", "prostitute", "survival sex", "transactional sex", "harm reduction", "risk reduction", "trafficking", "decriminalization", and "human rights". The same terms were used to search psychological, social sciences, and social work publications (from 2000) from PsychInfo, Social Work Abstracts, Social Science Abstracts, and the Web of Science. EMBASE, MEDLINE, and a comprehensive social scientific and psychological review on sex work (1990-2000) were also used. Reference lists from selected articles and widely used textbooks on sexually transmitted disease were also reviewed. With the same key words, I searched non-peer-reviewed work using an online search engine (Google), abstracts from International AIDS Conferences (1996-2004); UN, UNAIDS, and WHO websites and publications; and information from non-governmental organisations. Peer-reviewed work and UN publications were reviewed to establish overall themes. All harms and harm-reduction strategies were listed and grouped under general headings. Selected articles best represented specific themes according to the following hierarchy: analytical studies, descriptive studies, UN publications, and commentaries or editorials. Randomised, controlled, or large studies were preferred. The Journal Citation Reports database was used to select high-impact journals. Non-peer-reviewed work was searched for additional issues.

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skin infections, thrombosis, sepsis, endocarditis, overdoses, and other serious illnesses.²⁰

Sex workers could use non-injection drugs such as cocaine, crack, and crystal methamphetamine,^{5,16,17,19,24–27} leading to poor judgment, unsafe sex, immune suppression, cardiovascular and neurological disease, overdose, and addiction.^{16–20} In Guyanese sex workers, cocaine was significantly associated with inconsistent condom use.¹⁷ Alcohol, probably the most important drug in the sex-work industry,^{3,5,16,26–28} has been associated with violence, abuse, unsafe sex, HIV infection, and liver damage.^{5,16,20,29}

Disease

Sex workers have an increased risk of sexually transmitted infections (STIs), including HIV.^{2,16,17,30–36} Condom use varies among sex workers,^{2–4,15,16,28,32} and the decision to use condoms is often controlled by the customer or brothel owner.^{2,16,18,24,28,37} Descriptive and analytical studies show that sex workers commonly use condoms less often with regular partners, spouses, and non-paying customers.^{2,16,17,19,24,32,38–40}

STI complications are common in sex workers, including pelvic inflammatory disease and ectopic pregnancy.^{16,30,38} STIs are cofactors in HIV transmission,^{30,38,41} and frequent intercourse can cause genital trauma, greatly increasing HIV risk.^{16,42,43} Sex workers sometimes douche, or use drying or astringent substances that remove the lubricating vaginal fluid to increase a sense of tightness or induce “dry sex”. These practices have been associated with an increased risk of STIs or HIV infection.^{2,44–46} Sex workers could also acquire hepatitis A or herpes through anal-oral contact.⁴⁷

Violence

Violence^{2–5,15,16,18,23,27,48–50} against sex workers is an important issue in many communities. Violence includes physical, verbal, and sexual abuse; gang rape; traumatic intercourse; emotional trauma; robbery; confinement; and murder. Street-based sex workers have an increased risk of violence.⁴⁸ Violence results in morbidity, disability, emotional scarring, psychological stress, and low self-esteem. Significantly raised overall mortality and homicide mortality have been shown in active and former sex workers.⁴⁹ Violence by an intimate partner has also been associated with an increased risk of HIV infection.⁵¹

Discrimination

Sex workers are easy targets for discrimination, the overtly expressed corollary of stigmatisation.^{2,16,38,52–55} These individuals are devalued in many societies and often blamed for the breakdown of the traditional family, epidemics of STIs and HIV/AIDS, escalating crime, and the subversion of youth.^{3,16,28,52,53} Stigmatisation can lead to abuse, violence, criminalisation, denial of services, and low self-esteem, which affects sex workers’

health.^{2,3,16,38} Sex workers with HIV/AIDS could be doubly stigmatised.¹⁶

Debt

Young people sometimes enter sex work to support their families but soon acquire personal debts for transportation, accommodation, clothes, cosmetics, condoms, food, medical care, drugs, and fines.^{2–4,16,24,56–58} Risk-taking in sex workers has been statistically correlated with financial need.⁵⁹ Brothels can hold sex workers in debt bondage, allowing them to keep a small proportion of their earnings.^{16,24} As debts accumulate, the likelihood of individuals leaving sex work falls.³

Criminalisation

Prostitution, or some aspect of it such as soliciting, is illegal in many countries, but the law is an ineffective means of eliminating its negative aspects, often resulting in the criminalisation of sex workers.^{2,10,16,38,53,60} Even if prostitution is not illegal, sex workers can be treated as criminals.^{2,18,53} Criminalisation leads to violence; police harassment; increased HIV and STI risk; reduced access to services; psychological disease; drug use; poor self-esteem; loss of family and friends; work-related mortality; and restrictions on travel, employment, housing, and parenting.^{10,16,18,24,38,61–65}

Estimated yearly occurrence	
Adverse health effects in prostituted children*	
Infectious disease	
STDs	2 000 000
HIV infection	300 000
HPV infection	4 500 000
HBV infection	500 000
Pregnancy	
Maternal deaths	4752
Spontaneous abortions	900 000
Induced abortions	1 224 000
Abortion-related complications	367 200
Abortion-related deaths	710
Mental illness	
PTSD	6 700 000
Attempted suicide	1 640 000
Substance abuse	
All substances	9 000 000
Violence	
Physical assault	2 500 000
Rape	2 500 000
Murder	6900
Malnutrition	Unable to estimate
Adverse health effects in infants born to prostituted children†	
Infant deaths	190 080
Complication of STDs	237 000
HIV infection	249 480
Deaths from HIV infection	54 886
HBV infection	8316

STD=sexually transmitted disease. HPV=human papillomavirus. HBV=hepatitis B virus. PTSD=post-traumatic stress disorder. *Based on an estimated 9 million girls and 1 million boys prostituted per year. †Based on an estimated 2 376 000 infants born to prostituted children per year. Table reproduced from reference 67, with permission from Elsevier.

Table 1: Estimated yearly occurrence of adverse health effects of child prostitution

Exploitation

Child prostitution, human trafficking for sex work, and the abuse of migrant sex workers are important examples of exploitation.^{16,24} UNICEF has estimated that 1 million children enter the sex trade every year.⁶⁶ Children can be sold or led into prostitution by their families.^{3,16,67} Customers frequently prefer young girls, especially virgins, believing that there is less risk of diseases such as HIV/AIDS or that sex with virgins will enhance their sexual potency, cure disease, or extend their lifespan.^{16,24,67,68} Children brought into prostitution have little power to negotiate condom use^{16,67} and the immature vagina and cervix are more susceptible to STIs.³⁰ Child prostitutes are at high risk of HIV and STIs, violence, sexual abuse, rape, substance use, mental illness, tuberculosis, hepatitis, malnutrition, suicide, and death (table 1).^{16,23,34,67,69} Pregnant adolescent sex workers are at increased risk of pregnancy complications, maternal morbidity and mortality, and the complications from safe and unsafe abortions.⁶⁷

The UN defines human trafficking as “recruitment, transportation, transfer, harboring or receipt of persons, by coercion for the purpose of exploitation including prostitution”.⁷⁰ Although trafficking and sex work raise different issues, trafficking for sex work is associated with HIV infection, STIs, discrimination, illegal immigration status, reduced access to medical and legal assistance, violence, and drug use.^{16,71–75} Once trafficked, girls might be reluctant to return home.⁷² Human trafficking is the fastest growing international trafficking business.^{70,76}

A migrant is an individual who is engaged in a remunerated activity in a state where he or she is not a national. Migrants can be at risk of discrimination, violence, HIV and STIs, criminalisation, poor medical care, and drug use.^{4,16,40,52,57,58,77–81} Female economic migrants are targeted by sex work recruiters.^{82,52} Migrant sex workers have become a bridge population in the global spread of HIV/AIDS,^{82,83,84} and their mobility causes problems for the establishment of support networks and ongoing medical care.^{30,48,80,85} An Australian study showed a higher risk of STIs and lower condom use for international sex workers than for local sex workers.⁸⁶

Strategies for sex-work harm reduction (table 2)

For centuries, sex workers have faced the harms of sex work. They have developed strategies for understanding their options, modifying their risks, and coping with their situations. Social science publications, especially the autobiographical writings of sex workers, show the logic and power they use in their day-to-day lives.^{2,5,18,54,55,57,80,87,88}

Sex workers' coping strategies are based on personal knowledge, tradition and culture, experience, and future plans. Although intended to reduce risk, some strategies could worsen the situation or have no effect (panel 1). Harm-reduction initiatives for sex workers should build

	Initiatives	Harms reduced
Education	Peer education, outreach programmes, accessible and appropriate materials, sex worker involvement	Drug use, disease, violence, debt, exploitation
Empowerment	Self-esteem, individual control, safe sex, solidarity, personal safety, negotiating skills, refusal to clients, service access, acceptance by society	Drug use, disease, violence, debt, discrimination, exploitation
Prevention	Male and female condoms, lubricant, vaccines, behavioural change, voluntary HIV counselling and testing, participation in research	Drug use, disease
Care	Accessible, acceptable, high-quality, integrated care; prevention-care synergy; prophylaxis; STIs, HIV/AIDS, and psychological care; social support	Drug use, disease, violence, exploitation
Occupational health and safety	Control exposures and hazards, treatment for injuries and diseases, employer duties, worker rights	Drug use, disease, violence, debt, exploitation
Decriminalisation of sex workers	Sex worker organisations, sex work projects, non-governmental organisations	Criminalisation, discrimination, violence
Rights-based approach	Education, telephone hotlines, training targeted and user-friendly services, government action, media, PREVENT,* refugee package, community development	Exploitation (ie, child prostitution, human trafficking, exploitation of mobile populations)

*PREVENT=psychological counselling, reproductive health services, education, vaccinations, early detection, nutrition, treatment.

Table 2: Interventions for sex-work harm reduction

on their own strategies, value their distinctive differences, not conflict with their culture and traditions, and increase their options for self-determination, autonomy, and control.^{2,18,54,57,59,87,88} The social, behavioural, and professional heterogeneity of sex worker subgroups often needs different individual and structural interventions.^{93,94} WHO's Sex Work Toolkit⁸² delineates the key principles and issues for HIV prevention, care, and empowerment, and the best practices against the inherent challenges in interventions for sex-work harm reductions (panel 2).

Education

Education for sex workers can improve healthy behaviour by delivering the basic facts about disease,

Panel 1: Personal coping strategies of sex workers

- Keep working and personal lives separate⁸⁸
- Prioritise positive roles, such as motherhood⁸⁷
- Dissociate emotionally and physically from work and clients (eg, douching, condom use, drug use)^{5,19}
- Use degrees of intimacy to distinguish between work and non-work sex (eg, no kissing at work, no condom use with regular partners)^{18,37,87,88}
- Undertake self-programming, internal dialogue, and meticulous management of time and space²
- Maintain a positive and professional attitude towards work²
- Acknowledge that they are sex workers, making condom use easier to negotiate with clients⁵⁵
- Practise good genital hygiene^{18,40}
- Undertake self-assessment for STIs, and assess STI risk in clients¹⁸
- Use antibiotics before and after sex^{85,89,90}
- Use two or three condoms at the same time,⁹¹ extra lubricant,⁹² or both
- Switch to non-vaginal sex practices²

Panel 2: Principles and issues for effective HIV interventions in diverse sex work settings

Key principles

- Adopt non-judgmental attitude
- Ensure that interventions do no harm
- Respect sex workers' rights to privacy, confidentiality, and anonymity
- Respect sex workers' human rights and accord them basic dignity
- Respect sex workers' views, knowledge, and life experiences
- Include sex workers, and, if appropriate, other community members in all stages of the development and implementation of interventions
- Recognise that sex workers are usually highly motivated to improve their health and wellbeing, and that sex workers are part of the solution
- Build capacities and leadership among sex workers to facilitate effective participation and community ownership
- Recognise the role of clients and third parties in HIV transmission—ie, targeting the whole sex work setting, including clients and third parties, rather than only sex workers
- Recognise and adapt to the diversity of sex work settings and of participating individuals

Key issues

- Assessment: follow ethical guidelines and good research practice
- Planning: build local support, identify potential partners
- Prevention outcomes: safer sex and increased condom use, increased sex worker participation and control over working and social conditions, reduced STI burden
- STI treatment: at a minimum, provide management of symptomatic STIs and either screening for asymptomatic STIs or presumptive treatment for STIs if accurate screening is not feasible
- HIV testing and counselling: training to provide a sensitive, non-judgmental service; strict confidentiality; pre-test and post-test counselling and informed consent; referral to psychological support and clinical care if possible
- HIV care: counselling and peer support; if possible, establish self-help groups and improve access to treatment, care, support, home care, and antiretroviral treatment
- Harm reduction for sex workers: discourage injection, needle-sharing, and overall use of drugs
- Management: mentoring and support to adopt organisational transparency and open communication, community participation, clear policies, flexible and adaptable structure
- Training: schedule training so that sex workers can attend, develop policies on incentives and payment for attendance, write reports for future use
- Monitoring and assessment: use feedback information from stakeholder groups to change, develop, and expand projects; use assessment results to lobby for funding, replication, expansion, or social or policy changes

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dispelling myths, and offering healthy lifestyle and work options.⁸² Education can effectively reduce drug use, disease, violence, debt, and exploitation.^{2,16,32,86,95–100}

Peer education has resulted in substantial increases in STI and HIV knowledge, condom use, and safer sex practices, and reduced incidence of HIV and STIs.^{2,16,96–101} Peer educators need training, support, protection, and standards of conduct. Experienced sex workers can counsel other, often younger, sex workers about how to live safely. Peer education of sex workers in Chad was shown to be the most cost-effective option for the prevention of HIV/AIDS at under US\$100 per infection

prevented.¹⁰² Outreach programmes delivered by educators, social workers, nurses, and respected community members have also had success.^{2,16,95,103}

Many groups associated with sex work can benefit from education.^{16,60,95,96,100,104} Successful materials are simple, clear, consistent, non-judgmental, attractive, and culturally sensitive.^{16,71,95} Positive reinforcement can deal with prevailing practices, values, and beliefs.¹⁰⁵ Challenges include mobility, brothel manager control, criminalisation, language, culture, and traditions.^{16,71,78,95,97,106}

Empowerment

Sex work harms can be mitigated by empowerment—ie, provision of the means and opportunity for self-assertion.^{2,16,37,95,107} Personal empowerment is the awareness and strengthening of personal skills and options to control and improve sex workers' lives. Community empowerment strengthens the community's ability to participate in positive changes. Social empowerment enables sex workers to fight for their rights and acceptance in society.^{16,95}

The aim of empowerment is to reduce vulnerability. Sex workers could be vulnerable because of poor self-esteem, lack of education and skills, negative societal attitudes, poverty, family responsibilities, poor health, mobility, and cultural and legal restrictions.^{2,16,40,57,85,108–111} This vulnerability can result in difficulties for sex workers accessing and using condoms, negotiating safe sex, refusing clients, seeking redress, organising, parenting, using contraception, having abortions, and accessing public services.^{9,16,85,95,111–116} The sex-worker community could be vulnerable because of invisibility and internal competition.^{3,18,54}

Successful initiatives have resulted in enhanced self-esteem; improved negotiating skills; ability to refuse clients; access and use of condoms; training to recognise, avoid, and escape violence; STI and HIV preventive services; safe houses; drop-in centres; and STI treatment through pharmacies.^{2,9,16,95,107,115,117} Civil society organisations have promoted practical safety tips to empower street-based sex workers (panel 3).

There are structural examples of how policy and law can empower sex workers. In Santo Domingo, Dominican Republic, sex establishment support for condom use and HIV or STI prevention was a significant predictor of consistent condom use (odds ratio 2.16; 95% CI 1.18–3.97).³⁷ Thailand's 100% condom campaign increased condom use in commercial sex from 14% to 94% by making condoms freely available, sanctioning against non-compliant brothels, and advising men through the media to use condoms with prostitutes.¹¹⁹ A report of significant decline in condom use by brothel-based female sex workers in Thailand underscores the need for interventions to be sustained.¹²⁰

Community development has been successful in the promotion of safe sex, identification of injustice,

provision of child care, support for HIV-infected workers, enhancement of self-esteem, co-operation with police and controllers, provision of legal and financial training, initiation of alternative income-generation schemes, and support for migrants and human rights.^{16,95,107,114,115,121,122} In Johannesburg, South Africa, hotel-based sex workers have united to reduce risk and to educate newcomers.⁵⁴ When dealing with authorities, the community development model could be more effective and safer than actions by individual sex workers.^{16,107,114,121}

Prevention

Male condoms reduce HIV and STI transmission in sex workers^{32,41,98,119} and prevent STI complications such as pelvic inflammatory disease.¹²³ A reliable and accessible supply of good-quality condoms is essential.^{16,99,124} Condom promotion, distribution, and social marketing result in increased condom use and reduced STI and HIV infection rates, especially in female sex workers.⁹⁹ Local culture, language, and traditions should also be considered.¹²⁵

Female condoms have successfully prevented pregnancy and reduced STI transmission in analytical studies,^{126–128} and there is in-vitro evidence and biological plausibility for HIV prevention.¹²⁷ Female condoms empower women by enabling them to negotiate safe sex, by promoting healthy behaviour, and by increasing self-effectiveness and sexual confidence.¹²⁹ A simulation model in South Africa concluded that a well-designed female condom programme for sex workers would be highly cost effective.¹³⁰ Female condoms do not need an erect penis, are reusable, and can be inserted ahead of time and left in after sex. Since they are made of polyurethane, female condoms can be used with water-based or oil-based lubricants. Female condoms are accepted by sex workers^{127,131} but major difficulties include cost and poor availability.

Data have shown significantly reduced breakage rates without added slippage when more than one male condom was used.⁹¹ When both male and female condoms were available to brothel-based sex workers in Thailand, unprotected sex fell by 17% ($p=0.16$) and STI incidence by 24% ($p=0.18$).¹²⁶ Lubrication is especially important for female condoms.^{127,92} Dental dams and condoms that are cut lengthwise are plausible barriers during cunnilingus, but controlled trials are scarce. The availability of an effective and safe microbicide will be an important advance in sex-worker safety.^{132,133}

Sex workers could benefit from the early use of an HIV vaccine.¹³⁴ Vaccine-feasibility studies in Thai and Kenyan sex workers have shown ongoing high rates of HIV incidence, substantial interest, and good compliance.^{135,136} Hepatitis B vaccination programmes for sex workers can be effective, especially in the outreach setting and when the interval between the second and third dose is shortened.^{47,85,111,137} However, coverage rates could be low

Panel 3: Safety tips for sex workers

Appearance	Wear shoes that you can run in Avoid scarves, necklaces, and bags that can be used to hold or choke you Wear clothing that can be left on during sex in case you have to run away
Negotiations	Stick to a price list and time limit Pick your own parking spot or hotel Have a supply of condoms and lubricant Get money up front Use the same stroll
The car	Approach from the driver's side Arrange service and location while outside car Circle the car looking for other passengers Take down the licence plate (or pretend to) Do not fasten the seatbelt Wave goodbye to someone and shout the time of your return (or pretend to)
Oral sex	Learn to put on condom with your mouth At ejaculation, keep pressure on condom with your lips to prevent leakage Gargle with mouthwash or liquor afterwards, but do not brush your teeth
Vaginal sex	Use birth control Keep genital area well lubricated with water-soluble lubricant Do not douche or use vaginal-drying substances Position yourself on top, facing customer Keep hand on base of penis to keep it hard and to avoid spillage After ejaculation, remove penis from vagina immediately
Anal sex	Try to negotiate out of it Charge too much for the customer to afford Use extra lubricant Use female condoms
Self-defence	Do not carry weapons Use your voice and speed (eg, scream, hit car horn) Attack body areas that are easily injured (eg, throat, eyes, testicles) Run away against traffic, towards lights and people Work with friends Tell workmates about bad customers

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because of little perceived risk and inappropriate delivery systems.¹³⁸

Meta-analysis has shown that behaviour change interventions effectively reduce HIV transmission for sex workers.⁹⁹ Douching, dry sex, kissing, and unprotected oral-genital contact should be discouraged.^{44,45,139} Nonoxynol-9-containing products offer no additional protection to latex condoms and could predispose to HIV acquisition.^{140,141}

Voluntary HIV counselling and testing has been associated with increased condom use, reduced number of partners, and decreased HIV and in sex workers and clients.⁹⁹ This effect results from behaviour change

subsequent to education, support, and the knowledge of one's HIV status. Care programmes and participation in research can have a similar effect.^{99,142} Integration of STI and HIV services into family planning has been espoused,^{16,124,143} but there is little published evidence of effectiveness.¹⁴⁴ Additional success factors include links to community agencies, financial incentives, and support for childcare, transportation, and meals.¹⁴⁵

Care

Sex workers need accessible, acceptable, and good-quality medical care. Prevention and care are most successful if delivered together, which is referred to as the prevention-care synergy.^{16,71,107} Integrated services are important because sex workers could be exposed to many health risks, and follow-up is difficult.^{16,85,146} Referral to specialised services such as those for safe abortion and drug treatment is essential.^{85,146} Meta-analysis shows that STI treatment is highly effective in the reduction of disease transmission.^{98,99,147}

Accessibility, acceptability, and quality care for sex workers are challenging issues in both developed and developing countries because of mobility, discrimination, criminalisation, poverty, vulnerability, illegal status, lack of health insurance, and unfamiliarity with the local language and culture.^{2,16,114} Sex workers should participate in decision-making about service location and opening hours of operation.^{107,114} Innovative access strategies include mobile delivery, hotel-room and home-based

clinics, roadside clinics at police checkpoints, drop-in centres, and general clinics in sex-work areas.^{16,103,112,148,149}

Acceptability often depends on staff attitudes,^{2,16,112} which can be improved through sensitivity training.^{16,107,112} Childcare and the opportunity to rest, bathe, and talk with other sex workers enhance acceptability.^{95,107,112} Waiting times and clinic distance are also important. Sex workers will choose clinics that are welcoming with appropriate testing and treatment.^{16,95,107} In Managua, Nicaragua, vouchers redeemable at private, public, or non-governmental organisation clinics were positively received by sex workers and clinics.¹⁰ Communication can be addressed by cultural mediators and information in different languages.^{16,57,107,150}

Care and support for sex workers with HIV/AIDS is important. The UNAIDS (Joint UN Programme on HIV/AIDS) basic package for HIV and AIDS includes: voluntary HIV counselling and testing, psychological support, palliative care, treatment (for pneumonia, oral thrush, vaginal candidiasis, and pulmonary tuberculosis), prophylaxis with co-trimoxazole, and facilitating community activities that reduce the HIV effect.^{71,124} Antiretroviral prophylaxis during pregnancy, chest radiographs, Mantoux PPD skin tests for tuberculosis, and Pap smears should be available to sex workers.^{124,151,152} Since HIV viral load relates to HIV transmission, HIV-infected sex workers should be offered highly active retroviral therapy (HAART) when possible,¹⁵³ or be given viable options for leaving sex work.

Panel 4: Australian health and safety guidelines for brothels and the sex work industry

Employer duties

- Assess and control risks: screen, examine, and refuse clients; provide panic buttons, good lighting, safe equipment, and good hygiene; ensure safe handling of cleaning substances and ensure safe-sex practices
- Consult with employees, identify hazards, comply with fire laws, adhere to electrical safety
- Allow employees to access support organisations, join unions, have staff amenities, and receive health services

Working conditions

- Track hours and days worked; allow adequate breaks, vacation, and leave; provide safe and comfortable clothing
- Ensure no coercion and no inducement to practise unsafe sex; proper and consistent use of barriers
- Keep risks to a minimum for pregnant employees; ensure no smoking, or smoking only outside
- Handle waste, and prepare food and drink safely (handwashing, refrigeration, cleaning)

Protection and prevention

- Provision of accessible, properly stored, good-quality condoms, dams, and gloves, with their safe disposal
- Provide water-based lubricants, clean towels and linens; clean up body fluid spills
- Provide training to avoid condom breakage and slippage, and inform what to do if condom breaks
- Ensure regular, voluntary staff-health monitoring and employer-paid education; ergonomically designed furniture and supplies
- Identify high-risk procedures and areas, and develop control strategies to combat violence
- Provide regular maintenance of spas, sex aids, and (lightweight) bondage and discipline equipment

Care and support

- First-aid kits and trained personnel, alcohol and drug treatment programmes, safety for escorts
- Provide workers' compensation: accident reporting, injury management, return-to-work programmes, employer-paid insurance, access to occupational-health clinics and services

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Sex workers and clients sometimes use antibiotics before or after sexual contact to prevent STIs and HIV.^{3,67,85,89,90} Pre-exposure antibiotic prophylaxis warrants investigation,⁸⁵ especially for individuals heavily exposed for short periods such as seafarers on shore leave and part-time sex workers. However, prophylactic antibiotic use by sex workers has been linked to unsafe sex and presumptive periodic treatment of STIs in female sex workers has shown only transient success.^{90,154} Sexually assaulted sex workers should be offered postexposure prophylaxis.

Occupational health and safety

Occupational health and safety refers to workplace issues that can affect employees. These principles are rarely applied to sex work, despite many occupational exposures, hazards, injuries, and diseases, including: harassment, violence, musculoskeletal injuries, bladder problems, stress, depression, alcohol and drug use, respiratory infections, latex allergy, the removal of children, and death.^{2,48,75,155–157} Occupational health and safety standards are justifiable only if participation in sex work is voluntary and does not allow the participation of children.¹⁵⁸ Health and safety guidelines for brothels and the sex industry have been developed in Australia (panel 4).

Where prostitution is legal, progress of occupational health and safety could be hampered by owner or manager disinterest and the so-called one-hazard approach, focusing exclusively on STIs and HIV/AIDS. Employers argue that sex workers are independent contractors or casual employees responsible for their own health insurance, social security, pension, and benefits. However, workplace safety can be improved, if sound policies and standards are in place and if sex workers are allowed to organise and lobby.^{37,114,156,162} Environmental and structural support for condom use and STI prevention has been shown as an important predictor of consistent condom use in female sex workers.⁴⁰ Forced brothel closures and treatment of sex workers as political scapegoats make the workplace more dangerous.¹⁶³

Decriminalisation of sex workers

Decriminalisation refers to the removal of criminal laws. The UN, UNAIDS, and WHO support decriminalisation of adult sex work if no victimisation is involved;^{16,63} however, no consensus exists among sex workers, non-governmental organisations, and advocates.¹⁶⁴ Drug-use harm reduction focuses on decriminalisation of drug users rather than the illicit drug industry. Sex workers should not be treated as criminals. Sex-worker organisations, non-governmental organisations, and research projects have been effective in decriminalising sex workers, by protecting their legal rights, lobbying for rational legislation, and working at the grass roots to protect them.^{95,107}

Police are often blamed for criminalising prostitutes, but education, training, and lobbying can improve relations so that sex workers view the police as supportive and protective.^{16,61,107} The courts should assess sex worker testimonies objectively and sex workers need the opportunity to seek redress for rights violations.¹⁶⁵ Courts can interpret the law to improve the lives of sex workers. In 2000, the High Court of Bangladesh declared that sex work was not illegal and that sex workers had the right to earn a living.⁹⁵ The Court censured state agencies for closing brothels.

Incarceration and a criminal record can interfere with housing, social assistance, travel, employment, education, food aid, and parenting.^{61,165} Illegal immigration status drives sex workers underground, which results in poor access to health services, discrimination, violence, STI or HIV acquisition, and exploitation.^{2,16,58,61,75,79,114} Decriminalisation of migrant sex workers would help them access services, seek redress for rights violations, and protect themselves and their customers from disease.

The health-care system can treat sex workers like criminals, which affects access to services and health education and leads to raised rates of HIV, STIs, hepatitis, disability, and death.^{61,62,165} Mandatory HIV testing is an example.⁶⁵ Educational and training efforts can be successful.^{61,107,165} The media can shape public attitudes to support either criminalisation or compassion.^{3,107,166} Society disapproval of sex workers could promote low self-esteem, risk-taking, drug dependency, and hopelessness. Literacy, education, empowerment, and unity can reverse this downward spiral.¹⁰⁷

Human-rights-based approaches

UNAIDS has adopted a human-rights-based approach to HIV/AIDS.^{167,168} Extension of this approach to sex work and STIs would allow a supportive environment enabling sex workers to participate in, contribute to, and enjoy economic, social, cultural, and political development.^{168,169} Child prostitution, human trafficking for sex work, and exploitation of migrant and mobile sex workers are serious abuses of human rights.

Peer education, outreach programmes, and appropriate educational materials have effectively improved the lives of women trafficked for sex work, child prostitutes, and migrant sex workers.^{16,95,104,150,170,171} *Siren's story*,^{8,171} which depicts a Filipina sex worker in Australia who manages her private and working life successfully, is a popular booklet containing information on health, management of money, and negotiation for safe sex. The media can also raise public awareness. *Meninas da noite* (Little girls of the night),¹⁷² a collection of investigative reports by Gilberto Dimenstein, exposes child trafficking for sexual exploitation in the Amazon region and northwest Brazil.¹⁷³ Dimenstein exposes sexual abuses of girls as young as 9 years and as small as 15 kg.

Panel 5: Harm-reduction strategies best suited to government action

- Enact and enforce sex tourism laws
- Establish national databases of child sexual offenders
- Share information across jurisdictions and foster international collaboration
- Provide legal migration opportunities
- Increase and enforce penalties for exploitation
- Provide legal visa options for victims of trafficking
- Enact and enforce child pornography laws, including on the internet
- Monitor employment agencies
- Facilitate photoshop reporting of pornographic pictures, especially of children
- Provide witness protection for victims willing to testify against their exploiters
- Outlaw methods used to circumvent the illegality of trafficking (eg, fake marriages, temporary wives, serial sponsorship, and the bride trade)
- Require government agencies to report on the status of human trafficking and child prostitution
- Link international aid with progress against child prostitution, human trafficking, and exploitation
- Support a UN-sponsored international campaign to prevent child prostitution

Telephone hotlines provide confidential access to information for potential or actual victims of exploitation and for family members and friends.^{170,174} Education and training are important for agencies, individuals, and officials that interact with victims including youth-serving agencies, health-care workers, police, politicians, taxi drivers, hotel staff, and tour guides.^{67,95,104,174} Sex work customers can be educated through the media, information at airports and travel clinics, and John School (educational classes for sex-work customers, focusing on STIs, HIV, and sex workers' rights), where former victims educate offenders to reduce recidivism.¹⁰⁴

User-friendly drop-in clinics, open-door counselling centres, camps, and shelters have been successful.^{121,170,171} Services at high mobility sites such as transit stations and border crossings and in high-risk zones such as markets,

harbours, truck stops, and bus and train stations can reach migrant sex workers.^{150,175} A global moratorium should be undertaken on mandatory HIV testing, which increases the risk of discrimination, violence, exploitation, and disease, and promotes a false sense of security among clients, controllers, and governments.^{14,176}

Non-governmental and sex-work organisations and their projects are at the forefront of the fight against exploitation.^{107,121,171,173} CARAM Asia (Coordination of Action Research on AIDS and Mobility) produces educational information, advocates local and national issues, and develops interventions throughout the migration process.¹⁷¹ TAMPEP (Transnational AIDS/STI Prevention among Migrant Prostitutes in Europe Project) supports women, transvestites, and transexuals from eastern Europe, Latin America, Africa, and southeast Asia working as sex workers in Europe.¹⁷¹ The Maiti Project in Nepal provides safe spaces for returned trafficked women and educates the so-called sending communities to prevent other girls from being trafficked.¹⁷⁰ In rural Cambodia, 52 villages have established a community-based child protection network that educates the community about trafficking and intervenes for children at risk.¹⁷⁷ The health needs of children coerced into prostitution is summarised as PREVENT—psychological counselling, reproductive health services, education, vaccinations, early detection, nutrition, and treatment.⁶⁷

Sex work is a common survival tactic for refugees and displaced people to earn money for food.¹⁴ Women and children refugees are highly vulnerable to sexual violence, rape, and trafficking. Refugee sex workers need condoms, protection, access to household bleach and needle exchange, and basic HIV/AIDS and STI information in the language of the refugee and host community.¹⁴ Radio is an important medium for communication. Governments are in the best position to implement specific strategies (panel 5).

Conclusions

The figure shows a conceptual framework for sex-work harm reduction. Poor determinants of health¹⁷⁸ are often predisposing factors for individuals entering sex work. Sex workers' personal vulnerability might then act synergistically with a risky environment, exposing them to harms that lead to a reduced quality of life.¹⁷⁹ Vulnerability, a risky environment, sex work harms, and diminished quality of life often amplify each other in an ongoing cycle. An objective of harm reduction might be to enable sex workers to move into a more positive cycle of empowerment, supportive environment, harm prevention and mitigation, and improved quality of life. This cycle could enable sex workers to eventually leave prostitution.

This summary of peer-reviewed, scientific work substantiates the many serious harms of sex work and presents simple, safe, and inexpensive strategies to avoid

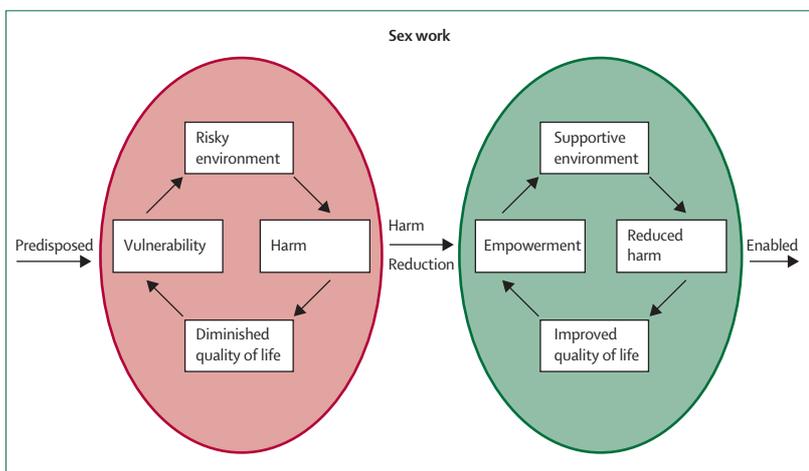


Figure: Conceptual framework of sex-work harm reduction

risk, mitigate harm, and save lives. Sex-work harm reduction should be viewed as a new paradigm to improve the lives of sex workers through debate, discussion, and action, in the same way that drug users' lives have been improved by drug-use harm reduction.

The sex-work industry should not be condoned, especially if it participates in victimisation. However, the global focus on the sex work industry could result in individual sex workers becoming the unintended targets of elimination and control efforts. Civil society, especially sex work organisations, is deeply involved in improving the day-to-day lives of sex workers, and the scientific community can take an active role by using evidence-based research to pilot innovative initiatives, assess existing strategies, and develop a database of proven interventions. The participation of sex workers in this effort will ensure its success.

Conflict of interest statement

I declare that I have no conflict of interest.

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