Caring for sex workers

Michael L Rekart

Sex workers are adults who receive money or goods for sexual services, either regularly or occasionally, including female, male, and transgendered sex workers. Youth under 18 years who sell sex are sexually exploited and not included in the definition.

Caring for sex workers seeking health services requires knowledge, flexibility, open mindedness, and, above all, a non-judgmental attitude. Practitioners can be directly involved in curing communicable diseases, preventing chronic conditions, and helping patients through a sometimes difficult period. Sex workers are at higher risk of many conditions (box 1), but they may also have ongoing chronic disease issues. This article provides an evidence based review (see box 2 for details of data search) of the specific health needs of sex workers, aimed at non-specialist hospital doctors, general practitioners, and candidates for postgraduate examinations globally.

**What happens when sex workers access health care?**

Sex workers often hide their involvement in sex work and drug use due to fear of being judged and treated poorly. When they disclose their occupation, they often experience stigmatising behaviour from staff, disapproval, shaming, other patients staring, and questioning about their work in a sexualising and degrading manner.

Many health workers have limited training on sex work and do not know how to deal with sex related issues in general.

Sex workers often face structural barriers to accessing health care such as long waits, restrictive hours, unwelcoming spaces, fear of arrest, legal status requirements, inconvenient location, lack of transportation, inability to pay, lack of confidentiality, and no access to a social worker.

Resources permitting, many sex workers in low-resource settings will attend private services, citing quality, respect, and confidentiality. However, most will attend good quality, affordable public clinics if they are available.

**Box 1 | Health issues for sex workers**

- HIV infection—Evidence from systematic reviews and meta-analyses
- Sexually transmitted infections (gonorrhea, chlamydia, syphilis, herpes (HSV-2), trichomonas, human papillomavirus)—Evidence from analytical and observational studies
- Complications of sexually transmitted infections (pelvic inflammatory disease and ectopic pregnancy)—Evidence from analytical and observational studies
- Hepatitis A, B, and C—Evidence from observational studies
- Tuberculosis—Expert opinion
- Unmet contraceptive need, unplanned pregnancy, unsafe abortion, inadequate pregnancy care, newborn complications—Evidence from cross sectional surveys, case series, and qualitative studies
- Non-injected and injected drug use, alcohol dependence, tobacco use—Evidence from systematic reviews and meta-analyses, analytical and observational studies
- Physical violence, especially rape—Evidence from cohort studies, case series, cross sectional surveys
- Mental health disorders (depression, suicidality, post-traumatic stress disorder)—Evidence from cross sectional surveys, case series, observational studies

**What preventive health measures are available to sex workers?**

**Vaccination**

Close contact with clients of unknown vaccination status means that sex workers should be up to date for diphtheria-tetanus (DT), measles-mumps-rubella (MMR), meningococcal, influenza, hepatitis A, and hepatitis B vaccination. Human papillomavirus infection is causally related to cervical, anogenital, and oral neoplasms. Human papillomavirus vaccine protects against type-specific, pre-neoplastic genital lesions and genital warts in unexposed females and males. International vaccination schedules vary but, where feasible, sex workers should be offered this vaccine.
Box 2 | Sources and selection criteria
I searched PubMed, Embase, PsycINFO, Social Work Abstracts, Social Science Abstracts, and Web of Science using the terms “prostitution,” “risk reduction,” “sex work,” “sex worker,” “sex trade,” “prostitute,” “survival sex,” “transactional sex,” and “harm reduction.” Reference lists from selected articles and widely used textbooks on HIV and sexually transmitted infections were reviewed. I consulted the BMJ Group’s Clinical Evidence series and the Cochrane Collaboration.

With the key words above, I searched non-peer-reviewed work using Google; websites and publications of the United Nations (UN), Joint United Nations Programme on HIV/AIDS (UNAIDS), and World Health Organization (WHO); and information from select non-governmental organizations. I chose articles according to the following hierarchy: meta-analyses, randomised controlled trials, analytical studies, systematic reviews, observational studies, UN, UNAIDS, and WHO publications, commentaries, and editorials. Large studies were preferred. Using the Journal Citation Reports database, I prioritised high impact journals. Non-peer-reviewed work was searched for additional issues.

Regular screening for sexually transmitted infections, cancer, and tuberculosis
Sexually transmitted infections are often asymptomatic, and delayed treatment can lead to pelvic inflammatory disease and ectopic pregnancy. In randomised controlled trials regular screening of sex workers reduces the incidence of sexually transmitted infection and HIV infection, increases condom use, and prevents sexually transmitted infection complications.

In a Côte d’Ivoire prospective cohort study, monthly screening of female sex workers by means of interview, vaginal examination (bimanual, external, and speculum), and microscopy significantly reduced HIV, chlamydia, and gonorrhoea infections and increased consistent condom use. Voluntary screening for sexually transmitted infection received sex worker support in a global consultation and a Madagascar study. Cervical cancer screening using a Pap smear test, visual inspection with acetic acid, or human papillomavirus testing promotes early detection and treatment, reducing morbidity and mortality. Anal Pap smear testing is also feasible.

The WHO recommends that sex workers be offered periodic screening for asymptomatic sexually transmitted infections and 3-yearly cervical cancer screening. For HIV-infected sex workers, the WHO recommends annual cervical cancer screening and periodic tuberculosis screening.

HIV post-exposure prophylaxis
A Cochrane review supports post-exposure prophylaxis for occupational exposure to HIV,111 and guidelines for 28 days of two or three antiretroviral agents started within 72 hours are available. Because the probability of HIV transmission via unprotected sex and needle sharing is similar to occupational exposure, post-exposure prophylaxis should be offered to eligible sex workers experiencing an unplanned exposure (sexual or via injected drug use) to an HIV-infected person.113-116 For exposure to someone of unknown HIV status, the provider and sex worker should jointly decide, based on local HIV prevalence, exposure type, and factors such as trauma and co-existent sexually transmitted infections.113 Rape survivors should be prioritised for post-exposure prophylaxis because of the likelihood of genital injuries and to help overcome psychological trauma.114

Post-exposure prophylaxis after unplanned insertive sexual exposure has not been studied. Post-exposure prophylaxis after regular sexual exposure might lead to continuous antiretroviral prophylaxis that may be ineffective and toxic. Post-exposure prophylaxis is not indicated for oral sex.

HIV pre-exposure prophylaxis
Pre-exposure prophylaxis refers to preventing HIV acquisition via sexual services or injected drug use by using antiretrovirals ahead of time. Two large and scientifically-sound meta-analyses showed a decrease in HIV risk approaching 92% with good adherence to daily oral pre-exposure prophylaxis with tenofovir or tenofovir-emtricitabine combination, and 39% for coitaly timed tenofovir 1% vaginal gel. Studies were conducted in populations of sex workers, men who have sex with men, transgender women, heterosexuals, and injecting drug users. There was no relationship between transactional sex and HIV incidence or pre-exposure prophylaxis adherence. Sex workers are at high risk of HIV acquisition because of their vulnerability, lack of control over condom use, and low risk perception with intimate partners. The WHO and Centers for Disease Control (CDC) recommend that sex workers be offered daily oral pre-exposure prophylaxis with tenofovir-emtricitabine or tenofovir-lamivudine, which are equivalent. Limited data show no adverse effects of tenofovir-emtricitabine in pregnancy or during breastfeeding, but there are no data on the long term health effects in HIV uninfected individuals.

Pregnancy prevention
Female sex worker surveys in Tanzania and Madagascar estimated pregnancy rates from 17.8 to 53.0 per 100 person-years. Unfortunately, sex worker pregnancies are often unintended, and in some countries this leads to unsafe abortions. This often reflects a reliance on condoms alone to prevent pregnancy. Observational studies report inadequate knowledge, access, and use of non-condom contraception by sex workers despite the importance of preventing pregnancy. Sex workers should be offered a dual method of contraception, such as long acting intramuscular progesterone or

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oestrogen implant, oral contraceptives, intrauterine device, or diaphragm. A\textsuperscript{38 39 40 127 129 131}

Sex workers should be made aware of the emergency oral contraceptive (“morning after pill”) and that it is effective up to 72-120 hours after unprotected intercourse.\textsuperscript{126} In the event of pregnancy, sex workers require regular voluntary counselling and testing and sexually transmitted infection screening because many will continue to work and may be unaware of vertical transmission of HIV and sexually transmitted infections.\textsuperscript{136}

**Male circumcision**

Three randomised controlled trials have shown that circumcision for heterosexual men reduces acquisition of HIV and other sexually transmitted infections and penile cancer.\textsuperscript{38 137 142} A systematic review and subsequent observational studies in men who have sex with men show that circumcision protects the insertive but not the receptive partner from sexually transmitted infections and HIV.\textsuperscript{141 143 146} Male circumcision may protect heterosexual women from non-HIV sexually transmitted infections.\textsuperscript{137 147 148}

**Safe sex promotion and needle-syringe programmes**

An extensive Cochrane review of male condoms for reducing heterosexual HIV sexual transmission yielded a 0.17 risk ratio.\textsuperscript{149} Analytical studies have shown that female condoms prevent pregnancy and sexually transmitted infections, and there is in vitro evidence and biological plausibility for prevention of HIV infection.\textsuperscript{2 150 151} Prospective observational cohort studies show that promoting male condoms to sex workers decreases sexually transmitted infections and HIV infection\textsuperscript{2 83 97 98 107 152} and adding female condoms provides additional protection.\textsuperscript{97 150 151}

For anal sex among men who have sex with men and transgender people, a WHO systematic review concluded that male condoms reduced HIV transmission by 64\% and transmission of sexually transmitted infections by 42\%.\textsuperscript{152-155} However, slippage and breakage are increased.\textsuperscript{146} Studies of female condoms for anal sex among men who have sex with men showed slippage, pain, and rectal bleeding,\textsuperscript{157} and there are no transmission studies of HIV or sexually transmitted infection.

Studies have found that use of water soluble lubricants with male condoms is acceptable to sex workers and reduces breakage, pain, and trauma,\textsuperscript{2 3 83 97 155 156} but non-water based lubricants increase male condom failure.\textsuperscript{83 152 158 159} Lubricants without condoms increase sexually transmitted infection risk.\textsuperscript{152 159 160} Vaginal and rectal microbicide research in sex workers is under way, but tenofovir vaginal gel has low tolerability when applied rectally.\textsuperscript{98 152} This author recommends against microbicides.

Drug injecting sex workers should have access to needle-syringe programmes to prevent HIV and bloodborne virus transmission.\textsuperscript{24}

**What are the treatment needs of sex workers?**

**Universal antiretroviral therapy**

The WHO currently recommends antiretroviral drugs for HIV infected adults and adolescents with a CD4 count $\geq 500/\text{L}$.\textsuperscript{161} Some of these regimens include nucleoside reverse transcriptase inhibitors, protease inhibitors, and integrase inhibitors.\textsuperscript{162} This article focuses on the use of antiretroviral drugs for sex workers.\textsuperscript{163} These regimens are effective and safe for the long-term treatment of HIV infection.\textsuperscript{164} However, the monitoring and support of sex workers taking antiretroviral therapy is challenging.\textsuperscript{165}

**Antiretroviral therapy for sex workers**

Sex workers have unique barriers to accessing antiretroviral therapy, including social stigma, fear of disclosure, and lack of knowledge of the benefits of treatment.\textsuperscript{166} To overcome these barriers, sex workers need access to comprehensive care, including antiretroviral therapy, that is culturally appropriate, stigma-free, and confidential.\textsuperscript{167} This requires a comprehensive approach that includes education, outreach, and support services.

**Box 3 | Care for sexual assault survivors**

- Provide private, confidential, and supportive first line assessment urgently
- Take a history and offer to do a full physical examination
- Offer HIV post-exposure prophylaxis if the rape occurred within 72 hours, if the patient’s HIV status is uninfected or unknown, and if he or she is not using HIV pre-exposure prophylaxis
- Offer emergency oral contraceptive if the rape occurred within 120 hours even if the patient is using dual or hormonal contraception
- Offer single dose oral sexually transmitted infection prophylaxis for chlamydia, gonorrhoea, and trichomonas—such as 2 g azithromycin + 800 mg cefixime + 2 g metronidazole
- Encourage immediate and follow-up syphilis testing (cefixime + azithromycin may cure incubating syphilis, but neither is first line therapy so screen and retest)
- Offer vaccination for hepatitis B or hepatitis A and B if the patient is not known to be immune
- Offer referral to a supportive social worker, psychologist, or legal resource
- Keep a confidential record of the visit, with the patient’s consent
- Offer to support sex workers who decide to report the rape to the authorities
- Provide ongoing support and follow-up care as needed for at least three months
- Watch for post-traumatic stress disorder and arrange appropriate therapy

**Questions for future research**

- What is the impact of decriminalisation or legalisation on sex worker health?
- Ongoing trials among female sex workers will identify whether sex-worker-related factors could alter the effectiveness of pre-exposure prophylaxis—such as sex frequency, lubrication, trauma, and concurrent sexually transmitted infections.
- Ongoing research will assess the effectiveness of vaginal and rectal microbicides.
- Do female condoms reduce HIV and sexually transmitted infection transmission during anal sex?
- Do female condoms reduce heterosexual HIV transmission?
- Do sex workers require pneumococcal vaccination?
- Is human papillomavirus vaccine safe and effective when it is given in a two dose schedule?
- Should post-exposure prophylaxis be used for unexpected insertive sexual exposure?
- Does male circumcision reduce HIV acquisition for male sex workers and transgender sex workers engaging in penile-vaginal and penile-anal sex?
- Is sexually transmitted infection syndromic management effective for anorectal syndromes?
- Is empiric treatment for sexually transmitted infection useful after unprotected sex with a symptomatic partner?
- For people who fail opioid substitution therapy, will supervised self administration of injectable diacetylmorphine or hydromorphone be effective?

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all HIV positive sex workers regardless of CD4 count or clinical status because their occupation necessarily involves HIV sero-discordant liaisons. By offering antiretroviral therapy to all HIV infected sex workers whenever they are ready, millions of HIV infections can likely be averted, and the potential reduction in morbidity and mortality is enormous. Early antiretroviral therapy also benefits individuals by suppressing viral replication, normalising T cells, and reducing non-HIV comorbidities, AIDS progression, and death. Two large randomized, controlled prospective cohort studies in Africa showed highly significant reductions in death, serious illness and progression to AIDS in patients starting ARVs at >500 CD4 cells/mm³ versus patients started at <200-350 cells/mm³ or when they were diagnosed with an AIDS-defining illness. Enhanced treatment of sexually transmitted infection

Studies show that treating sexually transmitted infections in sex workers decreases morbidity, prevents transmission of HIV and sexually transmitted infection, and reduces complications of sexually transmitted infection. Treatment of sexually transmitted infection among sex workers should be prompt, evidence based, and acceptable. Single dose oral regimens are preferable.

In resource poor settings, syndromic management of sexually transmitted infections identifies common syndromes based on history and guides treatment based on local epidemiology. However, effectiveness is poor for vaginal discharge and unknown for analrectal syndromes. Sex workers’ physicians can do better by performing external and internal vaginal and rectal examinations. Candidiasis is diagnosed by vulvovaginal redness, and cervicitis produces visible cervical mucopus and easy bleeding. Painful anal discharge is usually caused by herpes simplex virus 2, and painless discharge by gonorrhoea or chlamydia. Treatment after genital examination can be more targeted and safer. Periodic presumptive treatment is one to six monthly antibiotic prophylaxis for curable sexually transmitted infections based on risk and prevalence. A meta-analysis of research with female sex workers showed benefit, but periodic presumptive treatment is unacceptable to many sex workers who fear stigmatisation, antibiotic resistance, and difficulty maintaining condom use.

Access to safe abortion

There are 22 million unsafe abortions annually accounting for 47 000 deaths and five million disabilities. In a large survey of Kenyan female sex workers, 86.1% reported an unplanned pregnancy ending in unsafe abortion, and 50.9% reported two. In low resource settings, hospital based surgical abortions are often unavailable, but oral mifepristone and/or misoprostol are commonly used for safe medical abortion. The WHO supports use of these oral synthetic prostaglandins, and low doses are safe and effective throughout pregnancy. Where practitioners do not feel competent to prescribe and monitor medical abortion, they should provide information on abortion options to female sex workers and prompt referral to trained abortion providers. They should also be aware that many pregnant women in low resource settings can and will access misoprostol without a prescription.

Caring for survivors of sexual assault

Rape is the physically forced or otherwise coerced penetration of the vulva or anus with a penis, other body part, or object. Sex workers’ doctors need to be aware of local protocols to provide expedited care for sexual assault survivors (box 3) because they are frequent targets of coerced sex and rape.

Mental wellbeing

Mental health is strongly influenced by environmental factors and social circumstances including stigmatisation. Thus, sex workers are particularly vulnerable to mental health problems that may complicate prevention, treatment, and continuing care. Many surveys and observational studies of sex workers report depression, self harm or suicide, anxiety, and post-traumatic stress disorder. In one multi-country survey, 68% of 854 sex workers met the diagnostic criteria for post-traumatic stress disorder. The WHO’s mhGAP (Mental Health Gap Action Programme) Intervention Guide provides step-by-step assessment and management flowcharts for care, psycho-education, adjunct treatments, and pharmaceutical interventions including antidepressants, antipsychotics, and benzodiazepines.

Transgender health

Transgender sex workers face special challenges from hormone and silicone use, gender reassignment surgery, and transphobia. Most transgender...
**EDUCATION CLINICAL REVIEW**

**ADDITIONAL EDUCATIONAL RESOURCES**

- Resources for patients seeking information, support, referral, and empowerment
  - Global Network of Sex Work Projects (NSWP), [www.nswp.org](http://www.nswp.org)
  - Sex Workers Outreach Project (SWOP), [www.swopusa.org](http://www.swopusa.org)
  - Desiree Alliance, [www.desireealliance.org](http://www.desireealliance.org)
  - CATIE, [www.catie.ca](http://www.catie.ca)
  - UKNSWP—UK Network of Sex Work Projects, [www.uknswp.org](http://www.uknswp.org)
  - Global Network of Sex Work Projects, [www.gr.apc.org](http://www.gr.apc.org)
  - Paolo Longo Research Initiative, [www.piri.org](http://www.piri.org)
  - Asia Pacific Network of Sex Workers, [www.sexwork.asia](http://www.sexwork.asia)
  - Project Safe, [www.projectsafephil.org](http://www.projectsafephil.org)
  - St James Infirmary, [http://stjamesinfirmary.org/](http://stjamesinfirmary.org/)

**Resources for healthcare professionals**

- WHO. Mental Health Gap Action Programme (mhGAP) Intervention Guide. 2010. [www.who.int/mental_health/mhgap](http://www.who.int/mental_health/mhgap)
- St James Infirmary.
- Project Safe.
- Asia Pacific Network of Sex Workers.
- Project Safe Philadelphia.
- St James Infirmary.
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- St James Infirmary.
- Asia Pacific Network of Sex Workers.

**CASE REVIEW**

**Tumour biomarkers: diagnostic, prognostic, and predictive**

1. Tumour (or cancer) biomarkers are biological molecules that suggest the presence of cancer in a patient. Biomarkers may also be used to characterise known tumours. They are either produced by the tumour itself or by the body in response to the tumour.

2. Diagnostic biomarkers helped identify and support the diagnosis, prognostic biomarkers helped estimate prognosis, and predictive biomarkers suggested a possible treatment.

3. The diagnostic biomarkers, ER and E-cadherin, helped determine that the solitary brain lesion was malignant (E-cadherin) and had metastasised from the breast (ER positive).

4. Prognostic biomarkers, such as ERs and PRs, indicate the likely outcome of disease. They can provide a more accurate prognosis and may help select patients for treatment, although they do not necessarily predict the response to it. Despite this patient’s prognosis being poor because of the late clinical stage (IV), ER and PR positivity improves the chance of survival.

5. Predictive biomarkers are used solely to assess whether a certain treatment, such as a chemotherapy agent, may be of potential benefit to a specific patient. Positivity for ER and Her2 suggests that tamoxifen (ER antagonist) and trastuzumab (monoclonal antibody that interferes with Her2 receptors) may be effective in this tumour type.

**SPOT DIAGNOSIS**

**Plain radiograph in a neonate with abdominal distension**

This plain radiograph shows pneumoperitoneum with four characteristic radiographic findings of pneumoperitoneum. It shows decreased density of the liver shadow, also known as the hyperlucent liver sign, and the cupola sign, in which the central leaf of the central tendon of the diaphragm is highlighted by gas. The radiograph also shows the double wall sign, or Rigler’s sign, which indicates the presence of gas on both sides of the bowel wall. The falciform ligament sign, visible as a linear density, is also seen.

See thebmj.com for extended answer and discussion, with annotated image.

**STATISTICAL QUESTION**

**Multistage sampling**

Statements a, b, and c are all true.

**ANSWERS TO ENDGAMES, p 35**

For long answers go to the Education channel on thebmj.com