Public health

Child prostitution: global health burden, research needs, and interventions

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Child prostitution is a significant global problem that has yet to receive appropriate medical and public health attention. Worldwide, an estimated 1 million children are forced into prostitution every year and the total number of prostituted children could be as high as 10 million. Inadequate data exist on the health problems faced by prostituted children, who are at high risk of infectious disease, pregnancy, mental illness, substance abuse, and violence. Child prostitution, like other forms of child sexual abuse, is not only a cause of death and high morbidity in millions of children, but also a gross violation of their rights and dignity. In this article we estimate morbidity and mortality among prostituted children, and propose research strategies and interventions to mitigate such health consequences. Our estimates underscore the need for health professionals to collaborate with individuals and organisations that provide direct services to prostituted children. Health professionals can help efforts to prevent child prostitution through identifying contributing factors, recording the magnitude and health effects of the problem, and assisting children who have escaped prostitution. They can also help governments, UN agencies, and non-governmental organisations (NGOs) to implement policies, laws, and programmes to prevent child prostitution and mitigate its effects on children's health.

Child prostitution involves offering the sexual services of a child or inducing a child to perform sexual acts for any form of compensation, financial or otherwise. For the purposes of this article, a child is anyone younger than 18 years, as defined by the UN Convention on the Rights of the Child. Child prostitution differs from child sexual abuse, such as incest or molestation, because it involves commercial exploitation. However, it is similar to child sexual abuse in that children cannot consent to being prostituted because, in addition to child prostitution being illegal and a violation of human rights conventions, children do not have the requisite capacity to make such decisions.

Both girls and boys,[1] some as young as 10 years, are prostituted.[2] Most of these children are exploited by local men, although some are also prostituted by paedophiles and foreign tourists. Some of these children may have five to ten clients per day. The number of prostituted children (table 1) is thought to be increasing[3] and could be as high as 10 million.[4] Although these children are found in many settings, including on the street or in brothels, hotels, and bars, locating them can be difficult because they are often hidden and frequently moved.[5] Involvement of organised crime creates additional barriers to locating prostituted children.[5]

Contributing factors

Social, cultural, and economic factors contribute to child prostitution through gender bias, discrimination, poor education, and poverty.[5] For example, in some communities, prostitution is widely accepted, laws against child prostitution are not enforced, or both. In other communities, male clients believe that children are less likely to pass on HIV infection and sexually transmitted diseases (STDs).[5] Children of sex workers are at risk of being prostituted.[6] Homeless, runaway, or abandoned children are frequently pushed into prostitution and actively recruited by pimps and traffickers. Sometimes girls are enticed or kidnapped and then forced into prostitution. In some areas of developing countries, international sex tourism (travel solely for the purpose of having sex) is a significant cause of child prostitution. Finally, in rare cases, families give their children to religious or tribal elders as atonement for adult wrongdoings.[7]

Specific causes of child prostitution might differ between countries and communities. For example, in parts of Nigeria, children fleeing abuse at home are pushed into prostitution,[8] whereas child prostitution in Nepal is attributed to poverty.[9] In the USA, child prostitution is linked with childhood sexual abuse.[10] In some countries, such as Thailand, specific factors contributing to child prostitution differ between regions and often depend on ethnic origin such as being from Bangkok or northern tribal communities.[2]

Country (city)	Estimated numbers of children exploited through prostitution
Bangladesh (Dacca)	10 000
Brazil	100 000–500 000
Cambodia	5950
China	200 000
Colombia (Bogotá)	5000–7000
Dominican Republic	25 500
India	400 000–575 000
Indonesia	42 000
Nepal	28 000–40 000
Netherlands	1000
Pakistan	20 000–40 000
Paraguay	26 000
Philippines	40 000–100 000
Russia	20 000–30 000
Taiwan	40 000–60 000
Thailand	200 000
USA	300 000
Venezuela	40 000
Vietnam	8000–20 000
Zambia	70 000

Source: ECPAT-USA, 1999.

Table 1: **Number of children exploited through prostitution**

Lancet 2002; **359:** 1417–22

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Poverty and the profitability of prostitution are the main factors that sustain this industry. The sex industry worldwide generates an estimated US$20 billion or more yearly,[11] of which $5 billion is attributed to child prostitution.[12] Prostituted children are often responsible for providing financial support (income remittances) to their families. Strategies to remove children from prostitution must address this issue, lest the lost income simply results in other children being pushed into sex work. Finally, there are societal costs of child prostitution, including adverse health effects and restriction of education.

Human rights issues

Child prostitution is a gross violation of children's rights and dignity. UNICEF characterises it as "one of the gravest infringements of rights that children can endure."[13] In Asia, an estimated 1 million children in the sex trade are held in conditions that are indistinguishable from slavery.[14]

Children have a right to be protected from prostitution under the UN Convention on the Rights of the Child. The convention was adopted as an international human rights treaty in 1989, and has been ratified by all countries except the USA and Somalia. Governments are obliged to protect children from prostitution under Article 34 of the convention. Under Article 39, governments must take all appropriate measures to promote the recovery and social reintegration of children who have been exploited. In 2000, the UN adopted an optional protocol to the convention that extends the measures governments must take to protect children from prostitution. Child prostitution has also been described as one of the worst forms of child labour. However, since child prostitution is prohibited under the convention it should not be thought of as a form of labour.

Morbidity and mortality

Research

Although most reports on child prostitution acknowledge that it results in many serious health problems, there are very few reliable morbidity and mortality data. Health data for child prostitution are extremely restricted because some studies are not published; published studies are difficult to access and tend to report qualitative, rather than quantitative, health data; and funding for large quantitative studies is difficult to obtain. Information on prostituted children could be derived from the raw data of many studies in sex workers that include children, but the reports of these studies do not usually stratify data by age.

We used the few specific health data on prostituted children[6] and data from studies in sex workers and adolescents to estimate the global morbidity and mortality associated with child prostitution (table 2). We acknowledge that the morbidity and mortality of prostituted children may differ from that of adult prostitutes due to the legal status of prostitution in some countries and the greater potential negotiating power of adults to persuade men to use condoms. In addition, adult sex workers might have more access to health care than children.

Infectious disease

Prostituted children are at high risk of many infectious diseases and their sequelae. In many locations, prostituted children are at high risk of infection with HIV. For example, in a study by the Economic and Social Commission for Asia and the Pacific (ESCAP) [15] of 176 prostituted children in six countries, HIV infection rates ranged from 5% in Vietnam to 17% in Thailand. According to another report, 50–90% of children rescued from brothels in parts of southeast Asia are infected with HIV.[16] The risk of HIV infection in prostituted children will depend on several factors, including the local prevalence of HIV infection in sex workers, access to condoms, and attitudes of clients towards their use. In some communities, up to 86% of sex workers are infected with HIV.[17] Adolescent girls have a 1% risk of acquiring HIV infection during one act of unprotected sex with an infected partner.[18] In addition, prostituted children who are infected with an STD that causes genital ulcers, such as syphilis or chancroid, have a four times increased risk of HIV infection.[19] Lack of clinical services for children with STDs increases their risk of acquiring HIV since they will be untreated or will self-medicate.[15] Finally, prostituted children who are infected with HIV have a very high risk of developing active tuberculosis.

Prostituted children are at high risk of acquiring STDs other than HIV, transmitting these diseases to their infants and clients, and developing drug-resistant forms of STDs. In prostituted children in the ESCAP study, STD rates were far higher in Cambodia (36%), China (78%), and Thailand (38%)[15] than the 5% yearly incidence of these diseases in adolescents worldwide.

Rates of STDs in adult sex workers are also high in some countries (table 3). As with HIV infection, prostituted

	Estimated yearly occcurence
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 2: **Estimated yearly occurrence of adverse health effects of child prostitution**

	Gonorrhoea	Chlamydia infection	Trichomoniasis	Syphilis
Philippines	16%	12%	18%	4%
Cote d'Ivoire	29%	5%	25%	25%
Mali	11%	5%	4%	3%
Senegal	25%	13%	46%	29%

Source: Family Health International. STDs: global burden and challenges for control. Research Triangle Park, USA: Family Health International, 1999.

Table 3: **Prevalence of sexually transmitted diseases in adult sex workers**

children are at higher risk of STDs than adult sex workers in locations where they have less power to negotiate use of condoms by their clients. Without use of condoms, the risk of transmission of STDs is high; during one act of unprotected sex with an infected partner, an adolescent girl has a 30% risk of acquiring genital herpes simplex virus and a 50% risk of acquiring gonorrhoea.[18] A serious long-term health implication of untreated STDs in prostituted female children is pelvic inflammatory disease, which can result in infertility, ectopic pregnancy, chronic pelvic pain, and an increased risk of hysterectomy.

Prostituted children may receive prophylaxis for STDs or may self-medicate, placing them at risk for developing drug-resistant strains of microbes. For example, in brothel-based sex workers in Indonesia, 89% of *Neisseria gonorrhoeae* infections were resistant to penicillin and 98% to tetracycline.[20]

Caring for prostituted children is necessary not only for their health, but also to reduce transmission of STDs within communities. In Japan, 55% of men with chlamydia urethritis and 65% of men with gonorrhoea presenting at an STD clinic had been infected by sex workers.[21] Likewise, sex workers were identified as a key factor in the huge HIV epidemic in Thailand. In addition, the clients of sex workers further the transmission of infections in communities through infecting their partners.

Infection with the hepatitis B virus (HBV), hepatitis C virus (HCV), or both is a serious health risk for prostituted children. For example, in Brazil, 18 (2·7%) of 645 sex workers were infected with HBV and 12 (2·5%) of 464 were infected with HCV.[22] As with STDs, prostituted children can also infect their clients and third-party contacts with HBV and HCV.

Cervical cancer has been causally linked with infection with human papillomavirus. Women's risk of developing cervical cancer is associated with a high number of sexual partners and young age at first intercourse. Prostituted girls, therefore, have an increased risk of cervical cancer; they also have a high risk of being diagnosed at an advanced stage of disease, for which successful treatment is less likely.

As a result of poor living conditions, prostituted children may be at increased risk of other infectious diseases, such as tuberculosis, hepatitis A, skin infections, and parasitic infestations.

Pregnancy

> "Given the identified risks for child bearing at a young maternal age (ie, poor nutrition, substance abuse, and lack of prenatal care), it is difficult to find a risk group to which these young women do not belong".[6]
>
> From a study in pregnant prostituted adolescents in the USA.

Sexually active adolescents who do not use contraception have a 90% chance of becoming pregnant within 1 year. Since many prostituted girls do not have access to contraceptives, many will become pregnant. These girls are also at high risk of pregnancy-related complications, including death. Although there are no specific data on pregnancy-related morbidity and mortality in prostituted children or adult sex workers, maternal morbidity in girls younger than 18 years is two to five times greater than in women aged 18–25 years, and pregnancy-related deaths resulting from obstructed labour, infections, haemorrhage, abortion, and anaemia, are the leading cause of death for girls aged 15–19 years worldwide.

Many prostituted children who become pregnant seek abortions: in the ESCAP study,[15] of 12 girls who became pregnant in Vietnam, eight had abortions. Between 1·0 and 4·4 million abortions are done on adolescents every year, many of which are unsafe. These abortions place prostituted children at high risk of death and injury. Of an estimated 20 million unsafe abortions done every year, 80 000 result in maternal deaths—nearly 13% of all maternal deaths. In addition, between 10% and 50% of all women who undergo unsafe abortions require medical care for complications.

Mental illness

Child prostitution often results in serious long-term psychological harm, including anxiety, depression, and behavioural disorders. For example, in a study in 12 sex workers in Cambodia, all the women and girls had been victimised and felt helpless, damaged, degraded, betrayed, and shamed. Many of the young women reported depression, hopelessness, inability to sleep, nightmares, poor appetite, and a sense of resignation.[23]

Prostituted children are also at high risk of suicide and post-traumatic stress disorder. In the USA, 25 (41%) of 61 pregnant prostituted adolescents reported that they had seriously considered or attempted suicide within the past year.[6] 67% of 475 sex workers in five countries met the diagnostic criteria for post-traumatic stress disorder.[24] Such mental health problems are serious challenges to effective treatment and reintegration of these children into society.

Substance abuse

Based on rates of substance abuse by sex workers of nearly 100% in some locations,[25] a high percentage of prostituted children probably abuse various substances from tobacco and alcohol to inhalants and opiates, incurring health risks such as overdose; permanent kidney, liver, and brain damage; infection with HIV, HBV, HCV, and other bloodborne infections; and cancer.

Violence

Prostituted children are at risk of injuries, including rape, as a result of violence from pimps, clients, police, and intimate partners. Girls who are forced into prostitution may be physically and emotionally abused into submission. Other girls are beaten to induce miscarriages. Results from a study of 475 prostitutes in five countries underscore their risk of violence-related injuries. 73% of participants reported being physically assaulted while working as a sex worker, and 62% reported having been raped since entering prostitution.[24] Children can be killed by such violence. In the USA, 27 sex workers, of whom at least two were children, have been murdered since 1997.[26] In a study based in London, UK, two of 320 sex workers had been murdered, a death rate six times the expected rate for women of similar age who are not sex workers.[27]

Malnutrition

Although malnutrition has been reported in prostituted children, especially those living on the street, no specific data on malnutrition in sex workers were available for estimating its effect. However, considering the poor living conditions of many of these children, they are probably at risk of malnutrition and related disorders.

Health of infants born to prostituted children

Almost no data exist on the health of infants born to prostituted children or adult sex workers. Only one report, from the USA, provides mortality data for infants born to prostituted girls. Four (8%) of 55 infants born during the study died, and 38 (67%) were referred to child protection agencies.[6] The situation is unlikely to be better in other

countries. Interviews by one of the authors (BMW) with adult sex workers and prostituted children in Pakistan and Rwanda revealed that few mothers received prenatal care or had their infants immunised against common infectious diseases. Infants born to prostituted girls are at risk of HIV, HBV, and HCV infections. An estimated 600 000 children worldwide are infected with HIV every year, most through transmission from their mothers. Interventions can reduce the risk of mother-to-child HIV transmission, but there is no prenatal intervention to reduce HCV transmission through the same mechanism. In addition, fetuses or infants may be harmed if the mother is infected with an STD. For example, congenital syphilis is a primary cause of neonatal death and morbidity in some countries.

Needs assessment and research

Comprehensive quantitative studies on child prostitution are urgently needed at community, national, and global levels to assess the magnitude of child prostitution, identify the conditions under which children are forced into prostitution, identify the health problems of these children, and determine the long-term health needs of children who are no longer prostituted. Data from these studies could be used to develop interventions to prevent child prostitution; mitigate the health problems of prostituted children; and develop effective approaches to remove children from prostitution, assist them in their recovery, and reintegrate them into society. Research could also assist in identification and quantification of the health risks incurred by children who are trafficked for prostitution. Finally, we need to understand how to prevent exploitation of children by clients and why some clients target children, despite existing laws.

Since health problems of prostituted children vary within and between countries, community-based needs assessments and research must be the foundation for identification of causes, health problems, and interventions to prevent and mitigate child prostitution. Local issues that should be assessed include the causes of child prostitution; substance abuse; availability and use of condoms and contraceptives; access to pregnancy-related, STD, and other health services; nutrition; violence-related injuries; rape; and mental health. The prevalence of other health problems in the community, such as tuberculosis and malaria, can help determine which screening tests and other health services are provided. A manual to assess these problems is being developed by one of the authors (BMW). Data from community-based studies across a country can be aggregated at a national level. These data can be used to monitor the number of prostituted children, develop national policies and programmes to prevent child prostitution, and permit government agencies and NGOs to monitor the effectiveness of these policies and programmes.

Since data from community and national studies may not be available for some time, global studies of child prostitution are needed as soon as possible to estimate the worldwide number of prostituted children and develop better estimates of morbidity and mortality. Research in prostituted children must follow ethical procedures. In some studies in sex workers, children were included without clarification of whether the study procedure differed for child and adult participants. Researchers must be aware that children are protected from prostitution under the UN convention. Institutional review boards must ensure that all research that includes prostituted children protects them from research risks. If children are included in studies of sex workers, they may require more protection from research risks than other groups of children. In specific studies of prostituted children, researchers should also provide information to the children on health and social services available to them in the community.

Interventions

Preventing child prostitution

Although many individuals and organisations are working to prevent child prostitution, additional interventions are needed to address the health consequences at community, national, and international levels. Many interventions are aimed at addressing the demand for prostituted children, such as the criminalisation of sex tourism. Although many countries have laws to prosecute people who travel overseas for sex with minors, these laws are seldom enforced. More research-based interventions are needed to address the individual, familial, social, and cultural factors that push children into prostitution.

At the community level, health professionals should collaborate with other local individuals and organisations to study the factors that lead to child prostitution and enable appropriate local interventions to be developed and implemented. At the national level, health professionals should assist government agencies and NGOs that advocate for strong policies to prevent child prostitution and for funding for research and services. At the international level, health professionals and organisations should develop and support policies that encourage governments to intensify their efforts to prevent child prostitution. These policies, such as making international loans or foreign aid contingent on progress toward eliminating child prostitution, should be done without creating economic conditions that harm prostituted or other children. As at the national level, health professionals must also be strong advocates for funding for research and services. Projects to prevent child prostitution should be assessed and successful ones should receive better publicity. For example, in 1992, a national campaign to prevent child prostitution was developed in Thailand. The primary strategies of the campaign included providing 9 years of basic education, vocational training as an alternative to school, recreational and social services for children, awareness-raising activities to change attitudes about child prostitution, and a surveillance system to prevent children from being coerced into prostitution. In Thailand it is accepted that the longer a child is in school, the lower his or her risk of entering the sex market. This campaign was successful in helping children stay in school or complete vocational training. Prevention strategies must also include greater efforts to understand why some adults sexually exploit children and identify effective psychological treatment for these individuals.

Mitigating adverse health effects of prostituted children

Health services for child prostitutes have been proposed in the plan of action from the First World Congress on Commercial Sexual Exploitation of Children,[28] and in the model nation plan by End Child Prostitution, Child Pornography, and Trafficking of Children for Sexual Purposes (ECPAT).[29] Moreover, under the recently passed optional protocol on child prostitution of the UN Convention on the Rights of the Child, signatory nations are obliged to take measures to assist prostituted children, "including their full social reintegration and their full physical and psychological recovery".[30] One of the few concrete efforts to assist health professionals to provide services to prostituted children is the ESCAP *Course on Psychosocial and Medical Services for Sexually Abused and Sexually Exploited Children and Youth*. Such a course should be developed for every country, on the basis of national

The "PREVENT" strategy to mitigate the health risks of child prostitution

A model strategy that health professionals can implement at the community level:

Psychological counselling: for mental illness, emotional harm, and substance abuse.

Reproductive health services: for information on and access to condoms and contraceptives, for prenatal care, and for access to safe abortions.

Education: on strategies to avoid abuse and violence, on how to prevent intimate partner violence, on how to get clients to use condoms, and on social and vocational programmes to assist prostituted children to move to safer environments.

Vaccinations: hepatitis B immunisation for prostituted children, and routine childhood immunisations for infants born to prostituted children.

Early detection: pap smears for cervical cancer, and screening for HIV, other sexually transmitted diseases, tuberculosis, malaria, and other locally endemic diseases.

Nutrition: to prevent and treat nutritional disorders and promote good nutrition.

Treatment: early and comprehensive treatment of infectious and other diseases in prostituted children, and preventive health services for infants born to prostituted children.

morbidity and mortality data, and national or regional training courses should be available to health professionals. In addition, the courses should teach health professionals how to assess the health of prostituted children in their communities. Until all children can be protected from prostitution, diagnostic, therapeutic, and preventive health services must be available to them. These services should be based on a community assessment of the health problems of prostituted children, and health-care workers must be trained to provide appropriate services to these children (panel).

Rescuing and reintegrating prostituted children

Local, national, and international strategies should be developed and implemented to rescue prostituted children. Once these children have been rescued, they need sustainable medical and psychological support and opportunities for schooling or vocational training. Programmes to rescue children and provide them with sustainable services should be assessed and details of successful programmes should be shared. For example, in Cambodia, 232 children were rescued during police raids of 40 brothels. Most children returned to their villages, but 30 participated in a 1-year programme that provided housing, literacy training, vocational skills, and psychosocial therapy.

A call to action

Children have the right to be protected from prostitution and, if they have been prostituted, to receive necessary health services. These rights will never be fully realised until there is the political will to enforce laws and fund services. Health professionals have critical roles in developing this political will.

A coordinated international campaign is needed to prevent child prostitution, provide services to children who are prostituted until they can be removed from prostitution, and implement effective recovery and reintegration programmes. We propose that health professionals collaborate with NGOs, governments, and UN agencies to establish an International Campaign to Prevent Child Prostitution, akin to the successful International Campaign to Ban Landmines. For this campaign to be successful, it will require global coordination, implementation at national, regional, and community levels, and the leadership of many health professionals. The prostitution of children and the related health consequences have been accepted for too long. The time has come to make them unacceptable.

Contributors

B Willis conceived the article, reviewed literature, wrote the article, and led the article's development. B Levy guided content, reviewed literature, and edited the article.

Conflict of interest statement

None declared.

Acknowledgments

We thank Alan R Hinman for his assistance in the development of this paper. This article was coauthored by B Willis in his private capacity. No official support or endorsement by CDC is intended or should be inferred.

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Uses of error

Early and late

Itilitis Rosner

When I was the youngest doctor on the medical team, I did all the home visits. A 20-year-old girl complained of tiredness and a very high temperature the previous day. I could find nothing abnormal when examining her. Convinced that she was telling tales, I refused to give her sick leave. The following day she was hyperthermic and the laboratory confirmed malaria.

A week later, I answered the call of a 25-year-old woman who complained of asthaenia and nausea. Again, I could find nothing on clinical examination. 2 days later, she called again with the same complaints, but when I saw her, she had yellow sclerae, an enlarged liver, dark urine, and pale faeces. Hepatitis was confirmed by laboratory tests. I can only add that in both cases, both patients had an almost theatrical attitude towards their sufferings.

45 years later, a good friend of mine consulted me for gastric discomfort, weight loss, lack of appetite, insomnia and asthaenia. He was 70 years old, and had undergone surgery for a perforated duodenal ulcer more than 40 years previously. We both knew that his symptoms could not be attributed to a recurrence of his duodenal ulcer. Gastric cancer seemed probable. A full blood count confirmed anaemia, and he had occult faecal blood. However, radiology and endoscopy were negative. I referred him to a reputed surgeon, who accepted my opinion. "Then, you will operate on him?"

"No, I cannot make an exploratory laparatomy based only on your flair and mine! Such an attitude would have been legitimate at the beginning of our careers, but today, when we have endoscopy, a possibly unjustified surgery would be an unacceptable error. Please treat him symptomatically and send him to me again if things are not better 3 months from now."

So I did. The symptomatic treatment alleviated the pain but the weight loss didn't stop. After 3 months, I sent him back to the surgeon. Repeat endoscopsy showed a gastric neoplasm, confirmed by biopsy. During the gastrectomy, a small liver metastasis was removed. My friend died 2 years later with multiple metastases. Would he have survived longer without the 3 months lost?

If a clinical diagnosis is not confirmed by investigations, it doesn't mean that the diagnosis is wrong. Radiologists and endoscopists make errors, and ours was not asking them to repeat their procedure.

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