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## Sex trafficking, sexual risk, STI and reproductive health among a national sample of FSWs in Thailand

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### Abstract

**Background**—The trafficking of women and girls for sexual exploitation is an internationally recognized form of gender-based violence, and is thought to confer unique sexual and reproductive health vulnerabilities. To date, little research has compared sexual risk or health outcomes among female sex workers (FSWs) based on experiences of sex trafficking. The current study sought to compare experiences of sexual risk and sexual and reproductive health outcomes among FSWs based on experiences of trafficking as an entry mechanism to FSW.

**Methods**—Data from a national sample of FSWs in Thailand (n=815) to was used to assess a) the prevalence of sex trafficking as an entry mechanism into FSW, and b) associations of sex trafficking with sexual risk and health outcomes.

**Results**—Approximately 10% of FSWs met criteria for trafficking as an entry mechanism to sex work. Compared with their non-trafficked counterparts, sex trafficked FSWs were more likely to have experienced sexual violence at initiation to sex work (ARR 2.29, 95% CI 1.11, 4.72), recent workplace violence or mistreatment (ARR 1.38, 95% CI 1.13, 1.67), recent condom failure (ARR 1.80, 95% CI 1.15, 2.80), condom non-use (ARR 3.35, 95% CI 1.49, 7.52), and abortion (ARR 2.83, 95% CI 1.48, 5.39).

**Discussion**—Both the prevalence of sex trafficking as an entry mechanism to FSW, coupled with the threats to sexual and reproductive health observed based on trafficking status, demonstrate the need for comprehensive efforts to identify and support this vulnerable population. Moreover, existing STI/HIV prevention programming may be stymied by the limited condom use capacity, and high levels of violence observed among those trafficked into FSW.

### Keywords

Sex trafficking; sexual risk; condom; STI; reproductive health; sex work

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## INTRODUCTION

Commercial sex work is widely recognized as a primary context for heterosexual transmission of HIV/AIDS in Asia and elsewhere.<sup>1, 2</sup> Within Southeast Asia, Thailand faces a disproportionate HIV burden; Thailand leads the region in total number of persons living with HIV and demonstrates a population prevalence of 1.7%.<sup>3</sup> The 100% Condom Use Campaign initiated in the 1990s within Thailand and across much of Southeast Asia is renowned for its success in promoting condom use among FSWs as well as reducing HIV.<sup>1, 4</sup> Despite these efforts, HIV persists with an estimated 5% of Thai FSWs infected.<sup>3</sup> Evidence of inconsistent condom use,<sup>5</sup> and persistent sexually transmitted infections (STIs)<sup>6–8</sup> among FSWs in Thailand and elsewhere within the region further indicate the need to clarify threats to FSW-initiated STI/HIV prevention to reduce both incident infection and secondary transmission.

Sex trafficking, i.e., the forced, coerced, fraudulent or deceitful entry in to sex work, entry by abduction, or entry into such work under age 18,<sup>9</sup> is increasingly considered an HIV risk factor among FSWs. While recent data from South Asia illustrate high HIV prevalence among sex trafficking victims,<sup>10–12</sup> far less is known concerning HIV risk among sex trafficked victims in Thailand. Such investigation is strongly indicated; evidence that an estimated 40% of Thai FSWs entered as minors or are currently under the age of 18<sup>7, 13</sup> suggests that trafficking may be a primary mechanism into FSW in this national context,<sup>14</sup> however the prevalence of sex trafficking in Thailand remains unclear.

Moreover, sex trafficking has been highlighted as an unaddressed challenge within Thailand with regard to HIV/AIDS<sup>15</sup> based on a confluence of social and biologic factors. Those entering sex work via trafficking are thought to face elevated HIV risk<sup>15, 16</sup> via compromised agency to refuse sex or negotiate condom use,<sup>7, 15–17</sup> restrictions on mobility and access to preventive health services,<sup>18</sup> limited knowledge of STI/HIV,<sup>15, 16</sup> and isolation and limited access to prevention messages (e.g., condom promotion campaigns).<sup>14, 16, 19</sup> Biological mechanisms may also confer vulnerability; greater areas of cervical ectopy pose risk for HIV and STI infection<sup>20</sup> among very young FSWs.<sup>7, 21–23</sup> Violent sexual initiation into sex work,<sup>24</sup> common upon entry for trafficked FSWs,<sup>11</sup> may further facilitate STI/HIV transmission. Despite these concerns, no research has compared the prevalence of these risk factors between trafficked and non-trafficked FSWs in Thailand, rendering the mechanisms by which sex trafficked FSWs may face elevated STI/HIV risk unclear. Investigation of these factors among general samples of FSWs is critical to determine the extent to which sex trafficking relates to unique forms of STI/HIV risk, and, if indicated, subsequently refine the extensive HIV prevention infrastructure targeting FSWs.

Critical to investigations concerning the impact of trafficking on FSW health is the consideration of a broad range of health concerns beyond STI/HIV. Evidence of extensive mental health concerns,<sup>25</sup> and violence victimization<sup>18</sup> among trafficking victims in other national contexts, coupled with findings of a wide range of negative health outcomes among FSW samples<sup>13, 22, 26–32</sup> demonstrate the need for a more comprehensive conceptualization of FSW health. To date, few large scale investigations have evaluated health threats beyond STI/HIV and no investigation has evaluated the impact of sex trafficking on a broader range of sexual and reproductive health concerns; such data are critical to inform prioritization of public health efforts for this vulnerable population.

To begin to address these gaps, the current study utilizes a national sample of FSWs in Thailand to assess (1) the prevalence of sex trafficking as an entry mechanism into commercial sex work, (2) associations of sex trafficking with HIV/STI risk factors, and (3) associations of sex trafficking with sexual and reproductive health outcomes.

## METHODOLOGY

### Sample

The current study utilizes data collected between February and March of 2007 by the Institute for Population and Social Research (IPSR) at Mahidol University (Bangkok, Thailand), in collaboration with local non-governmental organizations (NGOs) in Bangkok, Chonburi, Chiang Mai and Songkhla, Thailand. The sample was constructed to approximate the proportional number of sex workers in each province as reported by the STI Division, Ministry of Public Health of Thailand. Local NGO staff within each province developed maps of sex work establishments to facilitate recruitment and understanding of the distribution of sex workers and the types of sex work venues. Sex work settings include *freelance sex work*, often conducted on the street and other public settings in which women face minimal formal regulation; *brothels* in which sex is the only service provided, and women typically reside on-site and are generally not allowed to refuse clients; and *karaoke bars*, *massage parlors*, and *beer bars*, each of which offer services beyond sex that women are responsible for encouraging and/or providing, and women face varying levels of regulation concerning working hours and required number of clients. Other settings include restaurants and go-go bars that similarly serve as transactional sex settings. Venues were then randomly selected from these maps and invited to participate in the study. Of 301 venues selected, 39 had closed or reported that they did not employ sex workers; of the remaining 262 venues, managers of 202 agreed to participate by allowing recruitment of FSWs, resulting in a venue participation rate of 77.1%. At each participating establishment, FSWs were approached for recruitment by the research team; sampling was proportional to establishment size such that establishments employing larger numbers of FSWs had greater numbers enrolled. Of the 1,025 participants recruited, 815 participated for a response rate of 79.5%. After verbal consent was obtained, survey was administered by a trained interviewer in Thai in a private location of the establishment. Immediately following survey data collection, all surveys were checked for completion and by field supervisors and entered into EpiData Version 2.0 (EpiData Association, Denmark, 2000–2009) to facilitate validity and consistency checks. All procedures pertaining to the initial data collection were approved by the Institute for Population and Social Research of Mahidol University Human Subjects Committee. The current investigation consists of secondary analysis of these anonymously collected data, and as such was deemed exempt from review by the Harvard School of Public Health Human Subjects Committee.

### Measures

All items were self-reported and pilot tested prior to the start of data collection. The primary exposure, trafficking status (i.e., sex trafficking as an entry mechanism to FSW), was assessed via two items; consistent with the UN definition of trafficking.<sup>9</sup> Participants were classified as sex trafficked if they either indicated entering sex work prior to age 18 or indicated being forced or deceived into sex work in response to being asked "What was the main reason you first did this sort of work?" Single items assessed recent anal sex (past month), recent condom failure (past week), recent history of condom non-use (any non-use in the past five sex acts), condom refusal from customer, unprotected sex in response to customer condom refusal, history of pregnancy, history of abortion, HIV testing, STI testing/checkup, and multiple sex work settings. Participants indicating that their first sexual experience was both non-consensual and with a paying customer were characterized as having had forceful initiation into sex work. Participants indicating that they had been "yelled at", "hit", "forced to perform sex acts you did not want to perform", "not paid", "paid less than agreed", "made to do other things you didn't want to" within the work setting in the seven days prior to the survey were classified as having experienced workplace violence or mistreatment. HIV knowledge was assessed via a seven-item scale, e.g., "Can a

condom protect you from HIV?"; responses were summed and classified into tertiles. With a concern that trafficked FSWs may face limited access testing services,<sup>18</sup> a syndromic STI assessment was conducted. Participants endorsing any of the five symptoms, specifically "lesions," "warts," "itchiness," lower abdominal pain," and "pain when urinating" in the past 4 months were classified as past-four month STI symptomatic. In recognition of the role of ulcerative STI symptoms in conferring further STI/HIV risk,<sup>33, 34</sup> a secondary STI variable was constructed to reflect participants indicating lesions or warts in the 4 months prior to the survey. Covariates assessed included demographics: current age, ethnicity, type of work establishment, province and duration in sex work.

## Analysis

Prevalence estimates were calculated for sex trafficking for the total sample and by demographics. Differences in trafficking status based on these factors were assessed via  $\chi^2$  test; significance for all analyses was set at  $p < 0.05$ . Prevalence estimates were calculated for all sexual risk behaviors, and sexual and reproductive health outcomes for the total sample and based on trafficking status. Differences in these factors based on trafficking exposure were assessed via  $\chi^2$  test. Log-binomial regression<sup>35</sup> models were constructed to estimate adjusted risk ratios (ARRs) and 95% confidence intervals (CIs) for the associations of sex trafficking with risk behaviors, violence victimization, and sexual and reproductive health outcomes, adjusting for current age, type of establishment in which the respondents worked, and recruitment province; respondents indicating no history of trafficking constituted the referent group. Current age and duration in sex work were found to be collinear, thus duration in sex work was not included in adjusted models. All statistical analyses were conducted using SAS Version 9.

## RESULTS

The prevalence of sex trafficking as the entry mechanism to sex work was 10.4% among FSWs in the current sample (Table 1). Among those trafficked, 15% were classified as such based on forced or deceived entry, and 89% were under age 18 at the time of entry (not mutually exclusive). Sex trafficked FSWs were younger in age ( $p < 0.001$ ) and had been in sex work for longer periods of time ( $p < 0.001$ ) as compared with non-trafficked FSWs. Sex work setting varied based on trafficking status, with trafficked FSWs more likely to work in freelance settings and less likely to work in beer bars (27.1% vs 17.1%, and 12.9% vs. 28%, respectively,  $p = 0.018$ ) with karaoke bars and brothels other common places of work. No differences in ethnicity or region were detected based on trafficking status.

### Sexual Risk

Trafficked FSWs demonstrated elevated prevalence of several forms of sexual risk. Trafficked FSWs were more likely to report anal sex in the month prior to the survey (8.2% vs. 2.6%,  $p = 0.006$ ); adjusted analyses indicated a non-significant trend towards elevated risk (ARR 2.26, 95% CI 0.96, 5.31). Trafficking was associated with recent condom failure (22.4% vs. 12.4%, ARR 1.80, 95% CI 1.15, 2.80) and recent condom non-use (8.2% vs. 3.1%, ARR 3.35, 95% CI 1.49, 7.52). Lifetime experience of client condom refusal was prevalent (71.5%), however no differences were detected based on trafficking status.

### Violence and Working Conditions

As compared with their non-trafficked counterparts, sex trafficked FSWs were over twice as likely to have experienced sexual violence at initiation to sex work (ARR 2.29, 95% CI 1.11, 4.72). While an estimated one third (36.6%) of the sample had experienced recent workplace mistreatment, those entering via sex trafficking were almost twice as likely to report such

experiences (ARR 1.38, 95% CI 1.13, 1.67). Having worked in multiple locations was also more common among trafficked FSWs (69.4% vs. 41.2%, ARR 1.44, 95% CI 1.24, 1.68).

### **STI/HIV Knowledge, Testing, and Access to Information**

Trafficked FSWs were slightly more likely to report low levels of HIV knowledge compared with their non-trafficked counterparts (38.8% vs. 27.4%); adjusted analyses indicated a non-significant trend towards elevated risk for limited HIV knowledge (ARR 1.13, 95% CI 0.92, 1.37). Approximately two thirds (67.3%) of the sample reported having ever been tested for STI and 83% had been tested for HIV; these outcomes were not found to vary based on sex trafficking.

### **Reproductive Health**

Trafficked FSWs were over three times more likely to have become pregnant since their entry into sex work (ARR 3.09, 95% CI 1.93, 4.95), with over one in five (20.2%) trafficked FSWs reporting this outcome as compared with 7.5% of non-trafficked FSWs. Such FSWs were also more likely to report abortion during their time in sex work, with 11.8% of trafficked FSWs reporting this as compared with 4.7% of non-trafficked women (ARR 2.83, 95% CI 1.48, 5.39).

### **Sexually Transmitted Infection (STI)**

STI symptoms in the four months prior to the survey were reported by almost two thirds of the current sample (65.5%); report of any STI symptom was not found to vary significantly based on sex trafficking status. A trend toward elevated risk for lesions or warts among trafficking victims was detected (17.9% vs. 11.8%, ARR 1.57, 95% CI 1.00, 2.45).

## **DISCUSSION**

Findings from this first national investigation of the prevalence of trafficking among Thai FSWs indicates that approximately one in ten Thai FSWs enter via trafficking mechanisms (i.e., under age 18 or via force, coercion or deception). As compared with their non-trafficked counterparts, sex trafficked FSWs faced greater levels of HIV risk spanning sexual risk, violence at initiation, and mistreatment in the workplace. Likely due these risks, trafficked FSWs demonstrated greater negative reproductive health outcomes and elevated risk of ulcerative STI. These findings advance the empirical basis for describing and understanding the health impact of trafficking as an entry mechanism to sex work, and indicate the critical need for attention from the public health community to the population of sex-trafficked FSWs. Given the recent attention to the health of sex trafficking victims represented by the UNGIFT,<sup>16</sup> current data provide empirical support for efforts to eliminate sex trafficking as a health and human rights violation, serve as a much-needed empirical basis for the tailoring of HIV prevention interventions to consider the specific vulnerabilities of those trafficked into sex work, and, importantly, highlight the broad range of sexual and reproductive health outcomes that appears to disproportionately affect this population.

Findings advance prior work illustrating elevated HIV infection among trafficking victims<sup>10–12</sup> by providing the first quantitative evidence that many mechanisms posited to explain the high HIV prevalence among FSWs appear to be more prevalent among sex trafficked FSWs relative to their non-trafficked counterparts in Thailand. Several forms of sexual risk, specifically recent condom failure and recent condom non-use, were more common among trafficked FSWs, suggesting elevated risk of exposure to STI/HIV. Though attenuated to a trend towards elevated risk in adjusted analyses, anal sex was more prevalent among trafficked FSWs, suggesting a clear mechanism for HIV acquisition. Notably, while not found differential based on trafficking status, well over half of the FSWs sampled



reported client condom refusal, with a smaller number reporting unprotected sex in response to condom refusal. These findings illustrate the persistence of HIV risk mechanisms beyond the control of FSWs among both trafficked and non-trafficked FSWs.

Corroborating prior concerns<sup>36, 37</sup> and evidence from investigations focused solely on sex trafficking victims<sup>10, 12, 18</sup> both violence victimization and working conditions varied based on trafficking status. Trafficked FSWs were over twice as likely to report sexual violence at initiation to sex work, indicating clear mechanisms for trauma, and suggesting that HIV prevention efforts targeting FSWs face limitations in protecting sex trafficked FSWs as they may become infected prior to accessing such educational efforts. Patterns of elevated violence victimization among trafficked FSWs were not limited to violence at entry; over half of trafficked FSWs reported recent workplace violence or mistreatment, suggesting that sex trafficking poses ongoing vulnerability, and potentially reduced decision-making or negotiation power, throughout the duration of sex work. Notably, over one third of non-trafficked FSWs reported recent workplace mistreatment, highlighting the vulnerability of FSWs to mistreatment regardless of mechanism of entry. Current findings that trafficked FSWs are over three times more likely to work in multiple locations supports hypotheses that these victims may be shuttled between workplaces,<sup>38</sup> possibly to avoid police detection, thus posing a potentially critical barrier to their ability to access help and health care.<sup>37</sup>

Current findings that sex trafficked FSWs demonstrated slightly lower levels of HIV knowledge relative to non-trafficked FSWs support prior concerns that this population may face deficiencies in this critical health information.<sup>15, 16</sup> Coupled with findings that sex trafficking was not associated with receipt of STI/HIV information targeted for sex workers, this trend towards differences in HIV knowledge may reflect limited HIV knowledge obtained prior to trafficking, perhaps due to young age at entry. Notably, no differences in STI or HIV testing were detected based on trafficking status in the current study. Only two thirds of the sample reported having ever received an STI test, and less than half were familiar with STI/HIV resources specific to FSWs, suggesting that education and access to these services represent unmet need among the population of Thai FSWs.

In addition to compromising condom use and other protective behaviors, sex trafficking also posed risk for sexual and reproductive health outcomes. Sex trafficked FSWs demonstrated a three-fold increased risk for pregnancy relative to non-trafficked FSWs. While the intendedness of these pregnancies cannot be determined, the three-fold elevated odds of abortion among trafficked FSWs relative to those non-trafficked suggests these pregnancies were unwanted, and suggests unmet contraceptive needs among this group. Recent STI symptoms were common, with over two thirds reporting any such symptom over the past four months. No differences were detected based on trafficking status. The observed trend towards elevated risk for lesions or warts for trafficked FSWs may reflect higher prevalence of ulcerative STI and suggests elevated risk for further transmission. Given current evidence of greater STI/HIV risk factors among trafficked FSWs, further research aided by clinical diagnostic testing is recommended to overcome limitations of syndromic STI assessment.

Taken together, these findings support the need to integrate assessment of trafficking as an FSW entry mechanism (i.e., entry via force, fraud, coercion or below age 18) within STI/HIV surveillance, research and programmatic efforts for FSWs to enhance our ability to describe these patterns, and, importantly, provide services that appropriately acknowledge the apparent persistence of differences in STI/HIV risk among FSWs experiences based on trafficking status. Clinicians serving FSWs for STI/HIV prevention and treatment, as well as general health concerns, should be aware of the possibility of trafficking among such patients; potential indicators of trafficking may include very young age, fear of violence, and constraints on freedom of movement or accessing services. Providers should familiarize

themselves with local support resources for trafficking victims and be prepared to make referrals as needed. More broadly, findings highlight the need to support programmatic and policy efforts to eliminate sex trafficking as a health and human rights violation. Currently, Thailand is ranked by the US Department of State Office to Monitor and Combat Trafficking in Persons as a Tier 2 nation; thus while the government does not fully comply with minimum standards for trafficking elimination, it is making significant efforts to do so.<sup>39</sup>

Finally, critical to STI/HIV prevention efforts targeting the commercial sex context is the inclusion of male FSW clients. Evidence that well over half of the FSWs sampled reported client condom refusal, coupled with findings of elevated risk for condom failure and condom non-use among those trafficked, illustrate mechanisms for risk that may extend beyond the full control of FSWs, indicating the need to broaden prevention efforts to include male clients of FSWs. Male client-oriented approaches to HIV risk reduction likely represent a critical component of preventing the further transmission of HIV via commercial sex, and may also reduce the demand that drives the market for commercial sex from trafficked FSWs thus making trafficking of women and girls less lucrative. Thailand's recent efforts to prosecute child sex tourists<sup>39</sup> represent one critical component of anti-trafficking, demand reduction efforts. Further research is urgently needed to inform development of both HIV intervention efforts targeting male clients as well as primary prevention efforts to reduce this behavior.

Despite the advances represented by the current investigation, findings should be considered in light of several limitations. Most notably, despite consistent evidence of migrants and ethnic minorities among FSWs in Thailand,<sup>15, 40–43</sup> the current sample was comprised of a relatively small portion of ethnic minority women. All survey procedures were conducted in Thai, which likely limited linguistic accessibility for non-Thai speakers. Thus, conclusions concerning the portion of non Thai nationals and ethnic minorities among Thailand's FSW population should be made with caution. Moreover, this approach likely underestimates the prevalence of trafficking among FSWs as non-Thai speakers (e.g., those from Cambodia, Laos, Burma, as well as hill tribe communities within and surrounding Thailand) may be particularly vulnerable to trafficking as an entry mechanism to FSW.<sup>15, 41, 42</sup> Given the high levels of violence and coercive sexual risk noted among migrant and undocumented FSWs, particularly those from Burma,<sup>15, 40, 41, 43</sup> further investigation will benefit from efforts to include this sub-population. The sampling strategy utilized, i.e., reliance on cooperation from establishment owners, may have also limited the participation of undocumented and/or more recently trafficked FSWs; the longer durations of involvement in sex work and older ages at the time of participation among those trafficked suggest that recently trafficked FSWs may have been undersampled. The cross-sectional nature of the data limits conclusions about causality, however as the exposure of interest (i.e., sex trafficking as an entry mechanism to sex work) occurred prior to many of the outcomes assessed, ordering of this exposure relative to recent outcomes may be assumed. The syndromic approach to STI assessment, though recommended for settings which lack diagnostic facilities,<sup>44</sup> is limited in its specificity, thus interpretation of findings is best limited to symptoms rather than diagnosis. Further research aided by clinical diagnostic testing is needed to clarify and confirm the present findings.

Findings from this first investigation of the prevalence of sex trafficking among Thai FSWs, and HIV risk and related health outcomes provide clear indication that sex trafficking as a mechanism of entry to sex work confers both immediate and long-standing risk for health threats and human rights abuses within the context of sex work. These data support concerns that current HIV prevention programming targeted towards FSWs in Thailand and elsewhere (i.e., the 100% Condom Use Campaign) may be stymied by limited negotiation power

among trafficked FSWs, evidenced by greater levels of violence and inability to successfully use condoms among this group. Thus, sex trafficking may be a critical factor in the persistence of the Southeast Asian HIV epidemic. Moreover, current data illustrate the need to expand the concern for the health of this population beyond HIV to a fuller spectrum of health concerns spanning sexual and reproductive health as well as violence victimization. The critical need to strengthen efforts to prevent sex trafficking, support interventions to promote the health of victims, and to intervene to protect the health and human rights of victims of this form of gender-based violence cannot be overstated.

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## References

1. Ruxrungtham K, Brown T, Phanuphak P. HIV/AIDS in Asia. *The Lancet*. 2004; 364(9428):69–82.
2. UNAIDS. 2004 Report on the global AIDS epidemic. Geneva: UNAIDS; 2004.
3. UNAIDS. 2008 Report on the Global AIDS Epidemic. Geneva: UNAIDS; 2008.
4. Rojanapithayakorn W. The 100% Condom Use Programme in Asia. *Reproductive Health Matters*. 2006; 14(28):41–52. [PubMed: 17101421]
5. Buckingham RW, Moraros J, Bird Y, Meister E, Webb NC. Factors associated with condom use among brothel-based female sex workers in Thailand. *AIDS Care*. 2005; 17(5):640–647. [PubMed: 16036250]
6. Kilmarx PH, Palanuvej T, Limpakarnjanarat K, Chitvarakorn A, St Louis ME, Mastro TD. Seroprevalence of HIV among female sex workers in Bangkok: evidence of ongoing infection risk after the "100% condom program" was implemented. *J Acquir Immune Defic Syndr*. 1999; 21(4): 313–316. [PubMed: 10428110]
7. Limpakarnjanarat K, Mastro T, Saisorn S, et al. HIV-1 and other sexually transmitted infections in a cohort of female sex workers in Chiang Rai, Thailand. *Sex Transm Infect*. 1999 Feb 1; 75(1):30–35. 1999. [PubMed: 10448339]
8. Chandeying V, Garland SM, Tabrizi SN. Prevalence and typing of human papilloma virus (HPV) among female sex workers and outpatient women in southern Thailand. *Sex Health*. 2006; 3(1):11–14. [PubMed: 16607969]
9. United Nations. Protocol to Prevent, Suppress, and Punish Trafficking in Persons, Especially Women and Children, Supplementing the United Nations Convention Against Transnational Organized Crime. Geneva: United Nations; 2000.
10. Silverman JG, et al. HIV Prevalence and Predictors Among Rescued Sex-Trafficked Women and Girls in Mumbai, India. *JAIDS*. 2006; 43(5):588–593. [PubMed: 17019369]
11. Sarkar K, et al. Sex-trafficking, Violence, Negotiating Skill, and HIV Infection in Brothel-based Sex Workers of Eastern India, Adjoining Nepal, Bhutan, and Bangladesh. *J Health Popul Nutr*. 2008; 26(2):223–231. [PubMed: 18686555]
12. Silverman JG, Decker MR, et al. HIV Prevalence and Predictors of Infection in Sex-Trafficked Nepalese Girls and Women. *JAMA*. 2007; 298(5):536–542. [PubMed: 17666674]
13. Wawer MJ, Podhisita C, Kanungsukkasem U, Pramualratana A, McNamara R. Origins and working conditions of female sex workers in urban Thailand: Consequences of social context for HIV transmission. *Social Science & Medicine*. 1996; 42(3):453–462. [PubMed: 8658239]
14. Beyrer C, Stachowiak J. Health consequences of the Trafficking of Women and Girls in Southeast Asia. *Brown Rev World Affairs*. 2003; 10(1):105–119.
15. World Bank Thailand Office. Thailand's Response to AIDS: Building on Success, Confronting the Future. Bangkok: The World Bank; 2000.



16. UNGIFT. An Introduction to Human Trafficking: Vulnerability, Impact and Action. Vienna: United Nations Office on Drugs and Crime; 2008.
17. Huda S. Sex trafficking in South Asia. *International Journal of Gynecology & Obstetrics*. 2006; 94(3):374–381. [PubMed: 16846602]
18. Zimmerman C, Hossain M, Yun K, et al. The Health of Trafficked Women: A Survey of Women Entering Posttrafficking Services in Europe. *American Journal of Public Health*. 2008; 98(1):55–59. [PubMed: 18048781]
19. Ainsworth M, Beyrer C, Soucat A. AIDS and public policy: the lessons and challenges of 'success' in Thailand. *Health Policy*. 2003; 64(1):13–37. [PubMed: 12644326]
20. Lee V, Tobin JM, Foley E. Relationship of Cervical Ectopy to Chlamydia Infection in Young Women. *J Fam Plann Reprod Health Care*. 2006; 32(2):104–106. [PubMed: 16824301]
21. Sarkar K, et al. Epidemiology of HIV infection among brothel-based sex workers in Kolkata, India. *J Health Popul Nutr*. 2005; 23(3):231. [PubMed: 16262019]
22. Sarkar K, Bal B, Mukherjee R, et al. Young age is a risk factor for HIV among female sex workers--An experience from India. *Journal of Infection*. 2006; 53(4):255–259. [PubMed: 16386307]
23. Ford K, Reed BD, Wirawan DN, Muliawan P, Sutarga M, Gregoire L. The Bali STD/AIDS Study: human papillomavirus infection among female sex workers. *Int J STD AIDS*. 2003 Oct 1; 14(10):681–687. 2003. [PubMed: 14596772]
24. Beyrer C, Celentano DD, Suprasert S, et al. Widely varying HIV prevalence and risk behaviours among the ethnic minority peoples of northern Thailand. *AIDS Care*. 1997; 9(4):427–439. [PubMed: 9337887]
25. Chudakov B, Ilan K, Belmaker RH, Cwikel J. The Motivation and Mental Health of Sex Workers. *Journal of Sex & Marital Therapy*. 2002; 28(4):305–315. [PubMed: 12082669]
26. Prybylski D, Alto WA. Knowledge, attitudes and practices concerning HIV/AIDS among sex workers in Phnom Penh, Cambodia. *AIDS Care*. 1999; 11:459–472. [PubMed: 10533540]
27. Evans C, Lambert H. Health-seeking strategies and sexual health among female sex workers in urban India: Implications for research and service provision. *Social Science & Medicine*. 1997; 44(12):1791–1803. [PubMed: 9194241]
28. Farley M, Barkan H. Prostitution, violence and posttraumatic stress disorder. *Women and Health*. 1998; 27(3):37–49.
29. Jeal N, Salisbury C. A health needs assessment of street-based prostitutes: cross-sectional survey. 2004; Vol 26:147–151.
30. Ngo, AD.; Ratliff, EA.; McCurdy, SA.; Ross, MW.; Markham, C.; Pham, HTB. Health-seeking behaviour for sexually transmitted infections and HIV testing among female sex workers in Vietnam. Vol. Vol 19. Routledge: 2007. p. 878–887.
31. Thuy NTT, et al. HIV Infection and risk factors among female sex workers in southern Vietnam. *AIDS*. 1998; 12(4):425–432. [PubMed: 9520173]
32. Wong WCW, Holroyd EA, Gray A, Ling DC. Female Street Sex Workers in Hong Kong: Moving beyond Sexual Health. *Journal of Women's Health* (15409996). 2006; 15(4):390–399.
33. Karumudi UR, Augenbraun M. Syphilis and HIV: a dangerous duo. *Expert Rev Anti Infect Ther*. 2005; 3(5):825–831. [PubMed: 16207174]
34. Myer L, et al. Nested Case-Control Study of Cervical Mucosal Lesions, Ectopy, and Incident HIV Infection Among Women in Cape Town, South Africa. *Sex Trans Dis*. 2006; 33(11):683–687.
35. Spiegelman D, Hertzmark E. Easy SAS calculations for risk or prevalence ratios and differences. *Am J Epidemiol*. 2005 Aug 1; 162(3):199–200. [PubMed: 15987728]
36. Cwikel J, Ilan K, Chudakov B. Women brothel workers and occupational health risks. 2003; Vol 57:809–815.
37. Cwikel J, Chudakov B, Paikin M, Agmon K, Belmaker RH. Trafficked female sex workers awaiting deportation: comparison with brothel workers. *Archives of Women's Mental Health*. 2004; 7(4):243–249.
38. Nair, PM., et al. A Report on Trafficking of Women and Childrean in India: 2002–2003. New Delhi: UNIFEM/ISS/NHRC 1; 2004.

39. US Department of State. Trafficking In Persons Report. Washintgon, DC: 2009.
40. Asia Watch. A modern form of slavery, trafficking of Burmese women and girls into brothels in Thailand. Bangkok: Human Rights Watch; 1993.
41. Beyrer C. Shan women and girls and the sex industry in Southeast Asia political causes and human rights implications. *Soc Sci Med*. 2001 Aug; 53(4):543–550. [PubMed: 11459403]
42. Beyrer C, Stachowiak J. Health consequences of the Trafficking of Women and Girls in Southeast Asia. *Brown Rev World Affairs*. 2003; 10(1):105–119.
43. Leiter K, Suwanvanichkij V, Tamm I, Iacopino V, Beyrer C. Human rights abuses and vulnerability to HIV/AIDS: the experiences of Burmese women in Thailand. *Health Hum Rights*. 2006; 9(2):88–111. [PubMed: 17265756]
44. Mayaud P, Mabey D. Approaches to the control of sexually transmitted infections in developing countries: old problems and modern challenges. *Sex Transm Infect*. 2004; 80(3):174–182. [PubMed: 15169997]

**What this paper adds**

The trafficking of women and girls for sexual exploitation as female sex workers (FSWs) is an internationally recognized form of gender-based violence. The high HIV prevalence documented among sex trafficking victims is thought underpinned by vulnerabilities unique to the experience of sex trafficking (e.g., compromised ability to refuse sex or insist on condom use, violent sexual initiation, limited knowledge of HIV transmission, and greater levels of sexual risk). To date, little research has investigated these factors based on sex trafficking as an entry mechanism to FSW; moreover the range of sexual and reproductive health outcomes evaluated in such investigations has been exceedingly narrow.

The current study provides the first empirical data that many of the mechanisms posited responsible for elevated HIV prevalence identified among sex trafficking victims are indeed more common among FSWs trafficked into sex work as compared with FSWs without such a history. Thus, assessment and consideration of trafficking status is critical for surveillance, research and programmatic efforts to promote sexual and reproductive health among FSWs, as well as those intended to reduce the transmission of STI/HIV.

**Table 1**

Sample Demographics and Prevalence of Trafficking as an Entry Mechanism to FSW among FSWs in Thailand (n=815)

	Sample n=815 %*	Trafficked n=85 %*	Not Trafficked n=730 %*	p value**
	--	10.4	89.6	
Mechanism of trafficked entry***				--
Forced or deceived	--	15.5	--	
Under age 18	--	89.4	--	
Current age				<0.001
14 to 23 years	30.6	60.0	27.1	
24 to 30 years	36.3	21.2	38.1	
31 or older	33.1	18.8	34.8	
mean (sd)	28.3 (7.4)	24.4 (7.9)	28.7 (7.2)	
Ethnicity				0.198
Thai	94.7	91.8	95.1	
Non-Thai	5.3	8.2	4.9	
Duration in FSW				<0.001
< 1 year	30.5	10.6	32.8	
1 year	18.2	7.1	19.5	
2 years	10.8	9.4	11.0	
3+ years	40.5	72.9	36.7	
mean (sd)	3.5 (5.0)	7.8 (7.4)	2.9 (4.4)	
Location				0.144
Bangkok	30.2	32.9	29.9	
Chonburi	32.0	23.5	33.0	
Chiang Mai	18.4	25.9	17.5	
Songkhla	19.4	17.7	19.6	
Type of setting				0.018
Karaoke	17.4	21.2	17.0	
Massage Parlour	11.4	8.2	11.8	
Beer Bar	26.4	12.9	28.0	
Freelance	18.2	27.1	17.1	
Brothel	16.3	21.2	15.8	
Other	10.3	9.4	10.4	

\* column %

\*\* chi-square p value

\*\*\* not mutually exclusive

Table 2

Associations of Sex Trafficking Status with Sexual Risk, Violence Victimization, and Health Outcomes among FSWs in Thailand (n=815)

	Sample n=815 %*	Trafficked n=85 %*	Not Trafficked n=730 %*	p value**	ARR*** (95% CI)
<b>Sexual Risk</b>					
Vaginal sex partners in past month is 30 or more (i.e., 1 partner daily on average)	26.8	34.1	25.9	0.107	1.16 (0.87, 1.54)
Recent anal sex	3.2	8.2	2.6	0.006	2.26 (0.96, 5.31)
Recent condom failure	13.4	22.4	12.4	0.016	1.80 (1.15, 2.80)
Recent condom non-use	3.6	8.2	3.1	0.016	3.35 (1.49, 7.52)
Condom refusal by customer	71.5	70.6	71.6	0.841	1.01 (0.90, 1.14)
Had unprotected sex when customer refused condom	5.7	10.0	5.2	0.128	1.34 (0.56, 3.22)
<b>Violence and Working conditions</b>					
Sexual violence at initiation to sex work	4.4	11.8	3.6	<0.001	2.29 (1.11, 4.72)
Experienced workplace violence/mistreatment, past week	36.6	51.8	34.8	0.002	1.38 (1.13, 1.67)
Has worked in multiple places	44.2	69.4	41.2	<0.001	1.44 (1.24, 1.68)
<b>STI/HIV knowledge, testing, and access to information</b>					
HIV knowledge				0.081	
Low	28.6	38.8	27.4		1.13 (0.92, 1.37)
Medium	36.4	32.9	36.9		1.00 (0.82, 1.23)
High	35.0	28.2	35.8		-ref-
Received STI test/checkup	67.3	65.9	67.5	0.772	1.03 (0.91, 1.17)
Received HIV test	83.3	81.2	83.5	0.581	0.96 (0.87, 1.05)
Received STI/HIV information targeted for sex workers	41.5	49.4	40.5	0.116	1.05 (0.90, 1.24)
<b>Reproductive Health Outcomes</b>					
Pregnancy	8.8	20.2	7.5	<0.001	3.09 (1.93, 4.95)
Abortion	5.4	11.8	4.7	0.006	2.83 (1.48, 5.39)
<b>Sexually Transmitted Infection (STI) Outcomes</b>					
STI symptoms in the past 4 months (any)	65.5	65.9	65.5	0.941	1.08 (0.94, 1.23)
Lesions or warts in the past 4 months	12.4	17.9	11.8	0.111	1.57 (1.00, 2.45)



\* column %  
\*\* chi-square p value  
\*\*\* adjusted for current age, type of establishment and recruitment province