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## Violence Victimization, Sexual Risk and STI Symptoms Among a National Sample of FSWs in Thailand

Michele R. Decker, MPH, ScD<sup>1</sup>, Heather L. McCauley, ScM<sup>1</sup>, Dusita Phuengsamran<sup>2</sup>, Surang Janyam<sup>3</sup>, George R. Seage III, ScD<sup>4</sup>, and Jay G. Silverman, PhD<sup>1</sup>

<sup>1</sup>Harvard School of Public Health, Department of Society, Human Development and Health (Boston, MA, USA) <sup>2</sup>Institute for Population and Social Research, Mahidol University (Bangkok, Thailand) <sup>3</sup>SWING (Bangkok, Thailand) <sup>4</sup>Harvard School of Public Health, Department of Epidemiology (Boston, MA, USA)

### Abstract

**Background/objectives**—Commercial sex work is widely recognized as a primary context for heterosexual transmission of HIV/AIDS in many regions, including Southeast Asia. While violence victimization is considered to compromise women's ability to protect against HIV and other sexually transmitted infections (STIs), with female sex workers (FSWs) uniquely affected, little research has investigated the role of violence as it relates to sexual risk and STI outcomes among FSWs. The current study sought to compare experiences of sexual risk and STI symptoms among FSWs based on their recent exposure to violence.

**Methods**—Data from a national sample of FSWs in Thailand (n=815) was used to assess a) the prevalence of experiencing recent physical or sexual violence within the context of sex work, and b) associations of such victimization with sexual risk (i.e., anal sex, condom non-use, condom failure, client condom refusal) and self-reported STI symptoms.

**Results**—Approximately 1 in 7 FSWs (14.6%) had experienced physical or sexual violence in the week prior to the survey. As compared with their non-victimized counterparts, FSWs exposed to recent violence were at greater risk for recent condom failure (19.6% vs. 12.3%, ARR 1.92, 95% CI 1.24, 2.95) and client condom refusal (85.7% vs. 69.0%, ARR 1.24, 95% CI 1.14, 1.35). In analyses adjusted for sexual risk, violence related to both STI symptoms collectively (ARR 1.11, 95% CI 1.02, 1.21) and genital lesions as an individual STI symptom (ARR 1.78, 95% CI 1.20, 2.66).

**Conclusion**—Physical and sexual violence against FSWs in Thailand appears to be a common experience, with victims of such violence demonstrating diminished capacity for STI/HIV harm reduction and greater prevalence of STI symptoms. Comprehensive efforts to reduce violence

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Corresponding Author: Michele R. Decker, MPH, ScD, Instructor & Research Associate, Harvard School of Public Health, 677 Huntington Avenue, Kresge 705, Boston, MA 02115, USA, mdecker@hsph.harvard.edu, Phone: 617-432-5461, FAX: 617-432-3123.

Author Contributions:

Study concept: Decker, Silverman, Seage

Acquisition of data: Phuengsamran, Janyam

Analysis and interpretation of data: Decker, Phuengsamran, Janyam, McCauley, Silverman

Drafting of manuscript: Decker, McCauley, Silverman

Critical revision of manuscript for important intellectual content: Seage, Phuengsamran, Janyam, Silverman

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towards this vulnerable population must be prioritized, as a means of protecting the human rights of FSWs, and as a key component of STI/HIV prevention and control.

### Keywords

Sex work; Violence; STI symptoms; Sexual Risk; Thailand

## BACKGROUND

Commercial sex work is widely recognized as a primary context for heterosexual transmission of HIV/AIDS across the globe, including the majority of Asia.<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 female sex workers (FSWs) as well as reducing HIV.<sup>2, 4</sup> Despite these efforts, STI/HIV persists among Thai FSWs.<sup>3, 5</sup> Moreover, the persistence of inconsistent condom use, condom failure, pervasive client condom refusal, client pressure and coercion into unprotected sex, and other dimensions of FSW difficulty in negotiating condom use in Thailand<sup>6, 7</sup> and elsewhere<sup>1, 8–11</sup> indicates the critical need to identify and understand continued threats to FSW-initiated HIV prevention in order to reduce both incident STI/HIV infection and secondary transmission.

Violence is considered a likely threat to STI/HIV prevention among FSWs,<sup>12, 13</sup> with estimates of the prevalence of physical and sexual violence victimization among FSWs ranging from 40% to 75%.<sup>1, 12, 14–16</sup> While violence alone cannot cause STI/HIV, it is increasingly considered relevant to women's HIV risk among the general population.<sup>3, 17</sup> Experiences of violence and fear of abuse are posited to represent critical barriers to women's ability to enact HIV risk reduction behaviors,<sup>18</sup> and empirical data demonstrates that violence compromises condom negotiation<sup>19</sup> and confers STI/HIV risk.<sup>20, 21</sup>

To date, little is known about the impact of violence exposure on STI/HIV risk and subsequent infection among FSWs, nor have HIV prevention efforts been evaluated for efforts to address violence as a potential barrier to enacting protective sex behaviors. Despite qualitative evidence that violence against FSWs often leads to STI/HIV risk (e.g., higher-risk sex, compromised condom negotiation),<sup>12, 22–24</sup> limited quantitative data exist to assess the relationship of violence to sexual risk behaviors and subsequent infection among representative samples of FSWs. That which is known indicates that violence is associated with condom failure,<sup>14</sup> client pressure for unprotected sex,<sup>10</sup> and HIV infection<sup>16</sup> among FSWs in other regions outside of Southeast Asia. Further, no studies have been conducted into the role of violence in relation to a broad range of STI/HIV risks (i.e., unprotected sex, condom failure, client condom refusal, and anal sex) and STI outcomes which confer HIV vulnerability for FSWs.

Although extensive violence faced by FSWs has been documented, and the theoretical and empirical bases suggest that violence may confer significant STI/HIV risk, quantitative data concerning these intersections among FSWs, both within Southeast Asia and elsewhere, are lacking. The current study is designed to inform the state of knowledge by evaluating a) the prevalence of recent physical and sexual violence victimization, and b) associations of violence with sexual risk and STI symptoms among a large national sample of FSWs in Thailand.

## 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, for the purpose of describing sexual and reproductive health among FSWs in Thailand.<sup>25</sup> 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 (i.e. massage parlors, brothels, karaoke bars, etc) of sex work venues. Venues were then stratified based on type and size and randomly selected within strata. Managers from selected venues were identified and asked to permit recruitment of FSWs to participate in the study from these venues. 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%. Of the 1,025 participants approached, 815 agreed to participate, for a participation rate of 79.5%. Further details concerning sampling and survey methodology are available elsewhere.<sup>25</sup> One participant did not provide data concerning violence, hence, the final sample size for the current analyses is 814.

### Measures

After verbal consent was obtained, the survey was verbally administered by an interviewer trained in survey interviewing techniques and gender and sexuality sensitivity. Surveys were administered in Thai in a private location of the sex work establishment or outside within the close proximity of the establishment. All items were self-reported and pilot tested prior to the start of data collection. The primary exposure, physical or sexual violence victimization, was assessed via two items; participants indicating that they had been either “hit” or “forced to perform sex acts (they) did not want to perform” at work in the week prior to the survey were classified as having experienced physical or sexual violence. Single items assessed sexual risk behavior, including anal sex in the past month, condom failure in the past week, condom non-use for vaginal sex over the past five sex acts, and lifetime history of client condom refusal. A syndromic STI assessment was conducted as a proxy for STI. Participants endorsing any of five STI symptoms in the vaginal or anal areas, specifically “genital lesions,” “warts,” “itchiness,” “lower abdominal pain,” and “pain when urinating” in the past 4 months were classified as past-four month STI symptomatic. The syndromic STI assessment, while limited in specificity for STI diagnosis, is recommended for settings that lack diagnostic facilities.<sup>26</sup> In recognition of the role of ulcerative STI symptoms in conferring further STI/HIV risk,<sup>27, 28</sup> a secondary STI variable was constructed to reflect participants indicating genital lesions in the 4 months prior to the survey. 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. Data collection was carried out in conjunction with SWING (Service Workers IN Group Foundation), which facilitated participant referrals to any needed local health and violence-related support services. 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.

## Analysis

Prevalence estimates were calculated for physical or sexual violence among the total sample and by demographic factors. Differences in violence history 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 factors and STI symptoms for the total sample and based on violence exposure via  $\chi^2$  test. To evaluate differences in sexual risk based on exposure to violence, log-binomial regression<sup>29</sup> models were used to estimate adjusted risk ratios (ARRs) and 95% confidence intervals (CIs); models were adjusted for demographic characteristics found related to violence exposure in bivariate analyses (i.e., current age, type of establishment in which the respondent works, and recruitment province), with respondents indicating no recent violence serving as 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. Finally, both violence exposure and sexual risk factors were evaluated for their relative contributions to recent STI symptoms, i.e., genital lesions or any STI symptom. Differences in STI outcomes based on these factors were assessed via  $\chi^2$  test; multivariate log-binomial regression models were constructed to estimate adjusted risk ratios (ARRs) and 95% confidence intervals (CIs) for the associations of violence victimization and sexual risk behavior with each STI outcome, adjusting for current age, type of establishment, and recruitment province. All statistical analyses were conducted using SAS Version 9.

## RESULTS

Violence was prevalent among the current sample of FSWs in Thailand, with an estimated one in seven (14.6%) reporting being the target of physical or sexual violence in the context of sex work in the week prior to the survey (Table 1). Younger FSWs (under age 18 years) appeared to be at greatest risk for such experiences, with 25.0% affected as compared with 17.7% among those aged 18–25 and 12.1% among those 26 years and over ( $p = 0.050$ ). Violence against FSWs varied regionally, with those in Bangkok and Chonburi most likely to be affected (20.7% and 16.5%, respectively;  $p < 0.001$ ). The highest victimization prevalence was identified among FSWs reporting freelance work (29.7%), with lower prevalence estimates (9.8–13.0%) identified within other settings ( $p < 0.001$ ).

FSWs exposed to recent violence were more likely to report sexual risk and STI symptoms as compared with their counterparts not facing such violence (Table 2). Recent anal sex was more common among those exposed to violence as compared to those unexposed (6.7% vs. 2.6%,  $p < 0.05$ ), however these differences appeared to be explained in part by demographic characteristics (ARR 2.11, 95% CI 0.92, 4.82). Violence was associated with recent condom failure (19.6% of those victimized as compared with 12.3% of those not reporting recent violence;  $p < 0.05$ ); this difference persisted after considering demographic factors (ARR 1.92, 95% CI 1.24, 2.95). Client condom refusal was common overall within the sample, and was similarly more prevalent among those reporting recent physical or sexual violence in the context of sex work (85.6% vs. 69.0% respectively; ARR 1.24, 95% CI 1.14, 1.35). Both STI symptoms overall and lesions were more common among those FSWs who experienced violence as compared with those not reporting this abuse [(84.9% vs. 62.3%; ARR 1.31, 95% CI 1.18, 1.45) and (21.9% vs. 9.6%; ARR 2.30, 95% CI 1.51, 3.52), respectively].

Several sexual risk factors demonstrated bivariate associations with STI outcomes (Table 3). Both recent lesions and recent STI symptoms were more common among FSWs indicating recent condom failure (20.0% vs. 10.3%,  $p < 0.05$ ; 79.0% vs. 62.6%,  $p < 0.05$ , respectively). STI symptoms were also more common among those reporting client condom refusal (68.6% vs. 57.6%,  $p < 0.05$ ). In the final multivariate models designed to evaluate the relative contributions of sexual risk and violence to STI outcomes, recent violence victimization

remained significantly associated with both lesions (ARR 1.78, 95% CI 1.20, 2.66) and STI symptoms (ARR 1.11, 95% CI 1.02, 1.21). Additional factors demonstrating independent associations with lesions included recent condom non-use (ARR 2.15, 95% CI 1.06, 4.36) and recent condom failure (ARR 1.57, 95% CI 1.03, 2.38). Recent condom failure and client condom refusal demonstrated trends towards increased risk for STI symptoms (ARR 1.09, 95% CI 1.00, 1.16; and ARR 1.11, 95% CI 1.00, 1.16, respectively).

## DISCUSSION

Findings demonstrate extensive violence against Thai FSWs in the context of sex work, with an estimated one in seven (14.6%) exposed to physical or sexual violence in the week prior to the survey. Moreover, such victimization was significantly associated with sexual risk (i.e., recent condom failure and client refusal of condoms) and STI symptoms, supporting consideration of the role of violence in increasing sexual risk and as a potential mechanism for the contraction and continued transmission of HIV/STI. Findings advance prior qualitative evidence of violence against FSWs leading to STI/HIV risk,<sup>12, 22–24</sup> and build on quantitative findings from other regions indicating that violence relates to condom failure, coerced unprotected sex, and HIV infection.<sup>10, 14, 16</sup> Coupled with these prior findings, current evidence strongly indicates that violence against FSWs is both common and, beyond immediate injuries, represents a critical threat to the sexual health of this vulnerable population, possibly undermining efforts to reduce STI/HIV within the context of commercial sex work.

While violence itself cannot cause STI, current evidence that violence is independently associated with increased risk for STI symptoms even after adjusting for sexual risk suggests that violence may well play a mechanistic role in such infection. For example, forced sex acts, as well as unwanted and coerced sex, may cause physical trauma (i.e., tearing or lacerations)<sup>30, 31</sup> and hence facilitate STI acquisition. Experiences of abuse may also constitute a marker for qualitative differences in sexual risk not fully captured within the current investigation. For example, compromised condom negotiation based on fear of abuse, and other forms of coerced condom non-use not currently assessed may facilitate STI acquisition.<sup>32</sup> Despite the relatively low levels of recent condom non-use within this sample, condom failure was common, and coerced or compromised negotiation may contribute to unsuccessful condom use. Further research should include a more comprehensive assessment of sexual risk behaviors, including those which reflect power-imbalances and coercion in this context. Findings may also reflect differences in STI risk among the male clients of FSWs. In light of elevated sexual risk behavior and STI/HIV diagnosis demonstrated among male perpetrators of violence against female partners,<sup>33–36</sup> male clients that perpetrate violence against FSWs may similarly demonstrate greater likelihood of STI infection and subsequent transmission to FSWs.

Both the high prevalence of lifetime client condom refusal (71.5%), and the elevated sexual risk observed among FSWs exposed to violence, add to the growing body of research illustrating client-related constraints on the ability of FSWs to ensure successful condom use as a means to protect against STI/HIV.<sup>7, 11, 37</sup> This further evidence that condom use is often not within the control of FSWs strongly indicates the need for continued and expanded research and programmatic efforts targeting male FSW clients in efforts to prevent both STI/HIV as well as violence within this context.

The high prevalence of past-week violence against FSWs currently observed strongly indicates the urgent need for programmatic efforts to address and prevent violence against FSWs in Thailand and other settings. The HIV prevention infrastructure targeting FSWs, including the 100% Condom Use Campaign, widely endorses FSW empowerment and



collectivization,<sup>3, 4</sup> with these elements generally described as also providing a mechanism to reduce and respond to violence against FSWs.<sup>13, 38</sup> Given the prevalence of violence victimization currently observed (1 in 7 within the past week), coupled with its strong associations with STI risk, reduction of violence against FSWs must be considered a major goal within STI/HIV prevention efforts. To date, FSW empowerment and collectivization efforts have not been evaluated to determine their capacity to reduce violence and buffer its negative impact on sexual health. Programmatic efforts designed to reduce violence against women in the general population have also not been tested among FSWs.<sup>39</sup> Further research to evaluate the ability of the existing HIV prevention and violence prevention infrastructure to adequately respond to and prevent violence against FSWs must be prioritized.

Several limitations of the current study design are important to consider, most notably the inability to establish a temporal relationship between violence and sexual risk or STI. The ability to make causal inferences is hindered by both the cross-sectional nature of the investigation as well as the varied time scales used for the exposure and outcomes of interest. While the past-week assessment of violence victimization likely limits recall error, any prior experiences of violence (i.e., those prior to the past week) may similarly pose ongoing risk for sexual risk and STI outcomes, thus the current assessment may bias estimates towards the null, rendering them conservative. As current investigation reflects secondary analysis of data collected to describe sexual and reproductive health concerns, with greater detail regarding violence exposure beyond the scope of the initial study, violence indicators available for the current study were limited. Future research to clarify the present findings will benefit from greater detail concerning the context for recent violence as well as its severity and perpetrators (e.g., pimps, customers, police). Such investigation may also consider other experiences of gender-based violence across the lifespan (e.g., child sexual abuse, intimate partner violence). Migrants and ethnic minorities are thought to be over-represented among FSWs in Thailand<sup>40</sup>; the relatively small portion of ethnic minorities in the current sample suggests potential sampling bias leading to limited coverage of such groups.. Given the high levels of both violence and sexual risk noted among migrant FSWs, particularly those from Burma,<sup>40, 41</sup> further investigation will benefit from efforts to include this sub-population. The syndromic assessment for STI, while recommended for settings that lack diagnostic facilities,<sup>26</sup> is limited in specificity, rendering interpretation of findings limited regarding actual infection. Future research should include enhanced STI/HIV assessment (e.g., integrated STI/HIV testing). Finally, further qualitative and quantitative work are needed to understand the nature of the associations identified, including the extent to which violence itself may be considered a direct barrier to women's ability to negotiate safe sex and reduce STI/HIV risk, whether violence may represent a direct cause of risk and infection (e.g., via genital trauma), and the extent to which identified associations may reflect other mechanistic pathways.

A high level of physical and sexual violence victimization was identified among FSWs in the current sample, with 1 in 7 victimized in the week prior to the survey, and increased vulnerability to sexual risk exposures and STI symptoms associated with such victimization. Findings add to the growing body of work demonstrating violence-related threats to women's risk for STI/HIV, both generally<sup>19, 21</sup> and specific to FSWs.<sup>10, 12-14, 16, 22, 24</sup> Violence may represent a critical threat to FSW-initiated STI/HIV prevention efforts, likely undermining the ability of the existing STI/HIV prevention infrastructure to impede further transmission. Implications of the current study are particularly relevant given the role of transactional sex in facilitating the continued spread of STI/HIV both within Asia and globally.<sup>1, 2</sup> Programmatic efforts to reduce violence against FSWs must be prioritized in Thailand and elsewhere, both as a means of protecting the health and well-being of FSWs, as well as reducing the continued spread of STI/HIV.

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### Key Messages

1. Physical and sexual violence were common among this national sample of FSWs in Thailand; approximately 1 in 7 experienced violence in the week prior to the survey.
2. Experiencing recent violence was associated with sexual risk and STI symptoms among FSWs.
3. Efforts targeting FSWs to reduce STI/HIV risk must address violence based both on the high prevalence of such experiences, as well as observed associations with reduced capacity for STI/HIV prevention.

**Table 1**

Sample Characteristics and Prevalence of Recent Physical or Sexual Violence among Thai FSWs (n=814)

	Sample *	Physical or sexual violence victimization % **	No physical or sexual violence victimization % **	P value ***
Total		14.6		
Current Age				0.050
14–17	1.5	25.0	75.0	
18–25	41.7	17.7	82.3	
26 or older	56.9	12.1	87.9	
Length of time in sex work				0.853
Less than one year	30.5	13.7	86.3	
Up to 1 year	18.0	13.6	86.4	
Up to 2 years	10.8	17.1	82.9	
3 or more years	40.5	15.2	84.8	
Ethnicity				0.311
Thai	94.7	14.9	85.1	
Non-Thai	5.3	9.3	90.7	
Region				<0.001
Bangkok	30.2	20.7	79.3	
Chonburi	32.1	16.5	83.5	
Chiang Mai	18.3	8.7	91.3	
Songkhla	19.4	7.6	92.4	
Sex work setting				<0.001
Karaoke	17.4	11.3	88.7	
Massage Parlor	11.3	13.0	87.0	
Beer Bar	26.4	10.2	89.8	
Freelance	18.2	29.7	70.3	
Brothel	16.3	9.8	90.2	
Other	10.3	14.3	85.7	

\* column percent

\*\* row percent

\*\*\* chi-square p value

**Table 2**

Associations of Violence Victimization with Sexual Risk and Sexually Transmitted Infection Outcomes among Thai FSWs (n=814)

	Sample % <sup>*</sup>	Among FSWs Exposed to Violence % <sup>**</sup>	Among FSWs Not Exposed to Violence % <sup>**</sup>	Adjusted Risk Ratio (95% CI) <sup>***</sup>
<b>Sexual Risk</b>				
Recent anal sex <sup>§</sup>	3.2	6.7	2.6	2.11 (0.92, 4.82)
Recent condom non-use	3.6	5.9	3.2	1.54 (0.65, 3.65)
Recent condom failure <sup>§</sup>	13.4	19.6	12.3	1.92 (1.24, 2.95)
Client condom refusal <sup>§</sup>	71.5	85.7	69.0	1.24 (1.14, 1.35)
<b>Sexually Transmitted Infection (STI) Outcomes</b>				
Recent STI symptoms (any) <sup>§</sup>	65.6	84.9	62.3	1.31 (1.18, 1.45)
Recent Lesions <sup>§</sup>	11.4	21.9	9.6	2.30 (1.51, 3.52)

\* Sample %

\*\* row percent

\*\*\* adjusted for age, region, worksetting

§ Chi square significant at p<0.05

**Table 3**

Associations of Sexual Risk and Violence Victimization with Sexually Transmitted Infection Outcomes among Thai FSWs (n=814)

	Lesions in the Past 4 Months		Any STI Symptom in the Past 4 Months	
	% infected*	Adjusted Risk Ratio (95% CI)**	% infected*	Adjusted Risk Ratio (95% CI)**
<b>Sexual Risk</b>				
Recent anal sex				
Yes	19.2	1.38 (0.64, 2.99)	69.2	0.96 (0.80, 1.15)
No	11.0	-ref-	65.4	-ref-
Recent condom non-use				
Yes	21.4	2.15 (1.06, 4.36)	79.3	1.06 (0.89, 1.26)
No	11.2	-ref-	65.0	-ref-
Recent condom failure				
Yes	20.0 <sup>§</sup>	1.57 (1.03, 2.38)	79.0 <sup>§</sup>	1.09 (1.00, 1.20)
No	10.3	-ref-	62.6	-ref-
Client condom refusal				
Yes	12.5	1.18 (0.78, 1.80)	68.6 <sup>§</sup>	1.08 (1.00, 1.16)
No	8.3	-ref-	57.6	-ref-
<b>Physical or Sexual Violence Victimization</b>				
Yes	21.9 <sup>§</sup>	1.78 (1.20, 2.66)	84.8 <sup>§</sup>	1.11 (1.02, 1.21)
No	9.6	-ref-	62.3	-ref-

\* row percent

\*\* adjusted for age, worksetting, region and all variables in table

<sup>§</sup> chi square significant at p<0.05