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Associations of Sex Trafficking History with Recent Sexual Risk among HIV-Infected FSWs in India

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Abstract

History of forced or coerced sex work entry and/or sex work entry prior to age 18 (i.e., *sex trafficking*) relate to early HIV risk; whether such risk persists is unclear. The current study

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Conflict of interest

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assessed associations of reported sex trafficking histories and recent sexual risk among adult HIV-infected female sex workers (FSWs; $n = 211$) in Mumbai, India. Approximately one-half reported entering sex work prior to age 18 (50.2 %) or being forced or coerced into sex work (41.7 %). Past 90-day unprotected transactional sex was more prevalent among FSWs entering as minors than those entering as adults (AOR 2.06); in contrast, being forced or coerced into sex work related to reduction in such risk for HIV transmission (AOR 0.45). Histories of each form of sex trafficking may relate differently to later HIV risk. Intervention with HIV-infected FSWs entering sex work as minors should be prioritized based on potential elevated risk of HIV transmission.

Keywords

Female sex workers; HIV-infected; Trafficking; India

Introduction

Currently, there are 2.4 million people living with HIV in India [1], with the vast majority of those infected acquiring the virus through heterosexual contact [2] with female sex workers (FSWs). This exposure is typically either via contact with an HIV infected FSW or via sex with a male partner who had such commercial sex involvement [1, 3, 4]. Recent evidence indicates that HIV prevalence rates for FSWs are 15 times that of the general population [5]. Within the state of Maharashtra, prevalence rates of HIV among FSWs and male clients of FSWs have been documented to be as high as 18 and 12 %, respectively [6]. There are estimated to be over 10,000 FSWs engaged in sex work in the city of Mumbai alone [6, 7]. While studies indicate that condom use is reported by the majority of HIV-infected individuals, inconsistent and condom non-use remains prevalent [8–10], particularly among HIV-infected FSWs in India [10]. Thus, FSWs who are HIV-infected represent a critical population within the Indian HIV epidemic, and for whom understanding those factors that contribute to non-condom use is of high importance.

Women and girls who are sex trafficked—defined as forced, coerced, fraudulent or deceitful entry into sex work or entry into such work as minors [11]—are at significantly greater risk for HIV/STI as compared to those who enter sex work voluntarily as adults [12–14]. Recent research also indicates that, during the initial period in sex work, trafficking victims are more likely to experience unprotected sex with high numbers of male clients, chronic sexual violence and heavy alcohol use [12, 15, 16], suggesting likely mechanisms by which such individuals may be placed at high risk for HIV infection during this period. Recent data from Thailand and India suggest that those entering sex work via trafficking are also more likely to be recently violently victimized and, in Thailand, to have recently engaged in unprotected sex [17, 18]. Thus, greater risk for HIV among trafficking victims, in the longer term, may also stem from continuing sexual risk that appears related to their entering sex work at an early age or involuntarily. Sex trafficking has been reported by 21–50 % of FSWs in India in recent studies [12, 18–21]. However, no research exists to clarify whether the experience of being trafficked into sex work in India leads to ongoing sexual risk (i.e., condom non-use). Furthermore, no research from any region has assessed how, once

infected, such individuals may be at greater risk of HIV transmission to male clients across their duration in sex work.

To begin to address this important gap, the current study examines whether (a) entry into sex work prior to age 18 years and (b) history of forced or coerced entry into sex work are predictive of *recent* transactional sex without a condom or exposures associated to unprotected sex and HIV infection among FSWs (i.e., recent heavy alcohol use in the context of sex work[22–24] and recent violence victimization[25–27] among an adult sample of HIV-infected FSWs in the Indian city of Mumbai.

Methods

Between November 2008 and February 2009, the Transactional sex and Alcohol: Justification for a research initiative (TAJ) research team completed surveys on HIV-infected FSWs in Mumbai, India ($N = 211$). Participants were recruited from the ASHA Center, a community-based organization in Mumbai managed and run by FSWs, which provides support and linkage to care for HIV-infected sex workers and HIV-infected sex work clients. The ASHA Center is associated with the HIV Positive People's Network in Maharashtra (NMP+), an NGO network committed to the treatment and care of HIV-infected people in India and is located adjacent to a public hospital and 0.3 miles from Kamathipura, the largest red light district in Mumbai.

Outreach workers at the respective agencies reviewed client lists and selected every fifth individual from the list of 1,632 to be approached and screened for study participation. Staff invited these individuals to come to the ASHA clinic for study eligibility screening. A total of 326 FSWs were contacted for study recruitment, of which 246 (75 %) visited the ASHA center for screening. Of these, 216 individuals met eligibility criteria: 18 years or older; HIV-infected; and reporting sex trade involvement in the past year and penile-vaginal or anal sex in the past 30 days. HIV status was confirmed by government medical records brought by the participants. Of those eligible for the study, 98 % (211/216) were willing to participate and complete survey interviews. After participants completed the informed consent process with trained research staff, participants received a 45-min interviewer-administered survey in Hindi or Marathi assessing demographics, alcohol use, sex risk behaviors, and health status. Instruments were developed in English, translated into Hindi and Marathi and then reviewed by study investigators fluent in these languages. Participants were given 100 rupees (approximately \$2.50 USD) as compensation for their time. Study procedures were reviewed and approved by the institutional review boards of Boston University Medical Campus, the Harvard School of Public Health, NMP+ and the Indian Council of Medical Research.

Measures

Demographic data were collected based on items modified or taken from the Indian Demographic and Health Survey [28] and included age, level of formal education, religion, and marital status. Independent variables of interest for this study were the two definitional elements of sex trafficking—minor age at sex work entry and entry into sex work via force or coercion. Sex work was defined as “sex in exchange for money or gifts that were given to

you or someone else” and those reporting age 17 years or under at sex work entry were defined as entering as minors. Assessment of whether entry into sex work occurred via force or coercion was developed for this study based on the authors’ previous research with sex trafficked women and girls in South Asia [14, 29]; participants were asked “How did you start having sex for money?” and directed to select the answer they felt best described “how you got you into this work.” (The wording of assessments reflects the back-translation from Hindi to English.) Options included (a) I decided myself that this was a good way for me to earn money; (b) Someone told me that I should do this business, and I felt I had no choice but to enter; (c) Someone forced me to come and do this business; (d) Someone tricked me into coming to do this business; (e) I accepted a job doing some other kind of work and was made to have sex for money; and (f) Someone used some other means besides trickery or force to make me enter. Participants indicating the experiences described in choices c, d, e, or f were classified as having been forced or coerced into sex work.

Sex risk outcomes included participants’ report of any unprotected transactional sex (i.e., vaginal or anal sex without a condom) in the past 90 days, alcohol intake prior to transactional sex in the past 90 days; self-reported STI in the past year was determined via a single item on whether the participant had a disease other than HIV obtained via sexual contact (e.g., syphilis, gonorrhea, Chlamydia, trichomoniasis, and genital warts; see [10, 24] for more detail on these measures). To assess past year physical or sexual violence, participants were asked whether they had been “hit, slapped, kicked, or physically hurt” or “forced to have sexual intercourse or perform any other sexual acts against your will” in the past 12 months; those responding ‘yes’ to either item were considered to have experienced past year violence.

Data Analysis

Demographics were described for the total sample and also stratified based on (a) reporting minor age at entry into sex work and (b) reporting being forced or coerced into sex work; Chi square tests and *t*-tests were performed as appropriate to assess differences in demographics based on these predictors. Associations between both minor entry and forced/coerced entry into sex work and each outcome variable were assessed via separate multiple logistic regression models. Three types of models were constructed: (a) unadjusted, (b) adjusted for the potentials confounders of current age, education, marital status, religion, and (c) additionally adjusted for the other form of sex trafficking (i.e., in models including minor age at entry as the focal predictor, forced/coerced entry was added to create the final model). Minor age at entry and forced/coerced entry were not found to be correlated ($r = 0.09$) and thus could be included in the same model. Correlations between all pairs of independent variables and covariates were also obtained to avoid potential collinearity; no correlations between variables were >0.40 . All analyses were conducted using two-sided tests with a significance level of 0.05 and were performed using SAS software (version 9.1; SAS Institute, Cary, NC) [30].

Results

One half (50.2 %) of participating HIV-infected FSWs reported entering sex work prior to age 18 years. Slightly fewer (41.7 %) reported being forced or coerced into sex work (See Table 1). The overlap among these experiences was substantial. Of those entering under age 18, 46.2 % were also forced or coerced into sex work; of those forced or coerced into sex work, 55.7 % entered under age 18. Those entering sex work as minors differed from those entering as adults regarding marital status, with the majority of FSWs entering as minors (53.8 %) reporting never having been married, whereas the majority of those entering sex work as adults (66.7 %) reported having been previously married ($p < 0.01$). FSWs entering as minors also reported longer duration of sex work (mean = 14.5 years) than those entering as adults (mean = 11.0 years; $p < 0.01$). As noted in Table 1, no demographics or other descriptors differed based on having entered sex work as a minor or being forced or coerced into sex work (all $p > 0.05$).

Unprotected sex in the past 90 days was more prevalent among FSWs entering as minors than those entering as adults in unadjusted analyses (36.3 vs. 22.1 %; OR = 2.0, 95 % CI 1.08–3.71), with this effect reduced to borderline significance ($p = 0.06$) after adjusting for potential confounders, but again becoming significant in the final model that included forced/coerced entry as a covariate (AOR = 2.06, 95 % CI 1.06–4.02; see Table 2). Alcohol use prior to transactional sex during the past 90 days was also more commonly reported among FSWs entering as minors as compared to those entering sex work as adults in unadjusted analyses (44.8 vs. 31.4 %; OR = 1.77, 95 % CI 1.01–3.11), but this relationship attenuated to non-significance in adjusted models. Past year physical or sexual violence was somewhat greater among FSWs entering sex work as minors in relation to FSWs entering as adults, although the result was not statistically significant (19.6 vs. 11.4 %; OR = 1.92, CI 0.89–4.13), with this association remaining non-significant in the final model (OR = 2.06, CI 0.86–4.79; $p = 0.09$). Self-reported past year STI did not differ significantly based on minor age at entry to sex work.

Contrary to hypotheses, those HIV-infected FSWs reporting having been forced or coerced into sex work had lower odds of reporting unprotected transactional sex in the past 90 days as compared to those voluntarily entering sex work (22.2 vs. 34.7 %; OR = 0.51, 95 % CI 0.27–0.97), with this effect enduring in the final model adjusted for minor age at entry (AOR = 0.45; 95 % CI 0.23–0.88; see Table 3). No other outcomes differed significantly based on having been forced or coerced into sex work.

Discussion

Among this sample of HIV-infected FSWs receiving NGO services, approximately half reported entering sex work prior to age 18 or being forced or coerced into becoming sex workers (50.2 and 41.7 %, respectively), indicating that both of these forms of sex trafficking are highly prevalent within this population. These figures are higher than those reported in the small number of previous studies of trafficked FSWs in India [12, 26]; this is likely due to the HIV-infected nature of the current sample. Given that previous studies have demonstrated a high prevalence of HIV among trafficked FSWs [14, 29], and that

prevalence of HIV infection is greater among trafficked versus non-trafficked FSWs [12, 14, 29], an over-representation of trafficked individuals would be expected among an HIV-infected sample of FSWs.

Current findings indicate that recent sexual risk is greater among HIV-infected FSWs based on their having entered sex work as minors. Recent unprotected transactional sex was more prevalent based on minor age at entry (36 vs. 22 %) and reported by a large percentage of the current HIV-infected sample. That over 1 in 3 FSWs who entered sex work as minors and are aware of their HIV diagnosis, report recent unprotected sex is notable, as this indicates tremendous potential for secondary transmission and spread of HIV infection to the general population via clients' unprotected sex with their wives.

In the current investigation, we observed a notable difference in past year physical and sexual violence victimization between those entering sex work prior to age 18 years as compared to those entering as adults (20 vs. 11 %, respectively), although this difference did not reach statistical significance ($p = 0.09$) among the current sample. With 1 in 5 HIV-infected FSWs entering as minors reporting recent physical or sexual violence, and more than 1 in 3 (36 %) of such individuals reporting recent unprotected sex, these findings suggest that entering sex work as an adolescent relates to ongoing vulnerability (e.g., reduced decision-making or negotiation power) throughout the duration of sex work. These findings are consistent with recent research documenting an association between a history of sex trafficking and greater vulnerability to recent violence and HIV risk behaviors [17, 21].

Given that transmission from husbands who have had unprotected sex with HIV-infected FSWs is described as the major pathway by which increasing numbers of women are being infected with HIV across India [31–34], developing effective programs to prevent minor entry into sex work should be considered a high priority; currently, no HIV prevention strategies include such efforts. One additional possible approach would be screening for minor entry within current intake for existing HIV care programs to prioritize such individuals for risk reduction education and behavioral change interventions.

Contrary to hypotheses and the single previous study of involuntary sex work entry and current condom use, being forced or coerced into sex work related to a reduced risk of recent unprotected sex. The current study is the first examination of this phenomenon among an HIV-infected sample; the previous study finding an association between forced or coerced entry and current condom use included a general sample of FSWs in Thailand, both infected and uninfected [17]. Further, analyses of the previous study utilized the broader category of 'trafficked', combining those entering via force and/or coercion and those entering as minors in the exposed group. Although further study among more representative samples of FSWs is clearly indicated, several explanations may be posited for this unexpected finding. It is possible that a significant percentage of those entering by force or coercion, based on the very high levels of HIV exposure and sexual violence experiences upon such involuntary entry to sex work [20], did not survive the average 13 years of prostitution reported among the current sample, and that the resilience of those who did survive also relates to continuing lower levels of sexual risk behaviors. Taken together, findings suggest that the two components of the definition of trafficking set forth in the Palermo Protocol [35] (i.e., entry

via force, fraud or coercion, or under the age of 18 years) may exert qualitatively different risks with regard to HIV.

These findings should be considered in the light of several limitations related to the design of the current study. This current cross-sectional design precludes conclusions regarding causal relationships between variables. Assessments of age at entry to sex work and means of sex work entry are retrospective, relying on recall over an average period of 13 years; recall error is possible. However, recall of traumatic events has recently been found to be highly reliable, more reliable than that of non-traumatic events [24]. The current sample consisted of HIV-infected FSWs who were recruited via an HIV service network. As discussed above, these individuals may have different experiences of sex work than those not reached by this type of network, with those reached likely being at lower risk; this bias would tend to support the null hypothesis, (i.e., differences in risk would be more difficult to detect). Also, the HIV-infected nature of the current sample likely relates to an overestimation of the prevalence of minor and involuntary entry into sex, as individuals reporting these experiences have been found to be at greater risk for HIV infection [12]. Behavioral HIV risk may vary based on place of sex work (e.g., brothel, street); this was not assessed, potentially reducing the precision of estimates. Finally, it is important to note that our analyses are limited in their power to detect small effect sizes due to the study's relatively small sample size.

The concentration of high risk for HIV transmission among those who began sex work as children indicates that experiences and circumstances of sex work likely differ for such individuals. The implications of such findings are a clear and urgent need for programs to both prevent entry of minors into sex work and to target FSWs who have entered into sex work at young ages for enhanced prevention efforts to reduce the risk of both infection and subsequent transmission of HIV.

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Demographic characteristics of HIV-infected female sex workers in Mumbai, India ($N = 211$) and differences based on minor age at sex work entry and forced or coerced entry into sex work

Table 1

	Total sample $N = 211$ % (n)	Minor age at sex work entry $n = 106$	Adult age at sex work entry $n = 105$	p	Forced/coerced into sex work $n = 88$ % (n)	Voluntary entry into sex work $n = 123$ % (n)	p
Median age = 30 years							
Less than or equal to 30 years	62.1 (131)	65.1 (69)	59.0 (62)	0.37	65.9 (58)	59.4 (73)	0.33
Greater than 30 years	37.9 (80)	34.9 (37)	41.0 (43)		34.1 (30)	40.7 (50)	
Education							
No formal education	78.2 (165)	79.2 (84)	77.1 (81)	0.71	81.8 (72)	75.6 (93)	0.28
Any formal education	21.8 (46)	20.8 (22)	22.9 (24)		18.2 (16)	24.4 (30)	
Marital status							
Currently married	9.5 (20)	13.2 (14)	5.7 (6)	0.01	13.6 (12)	6.5 (8)	0.22
Previously married	49.8 (105)	33.0 (35)	66.7 (70)		47.7 (42)	51.2 (63)	
Never married	40.8 (86)	53.8 (57)	27.6 (29)		38.6 (34)	42.3 (52)	
Religion							
Hindu	77.7 (164)	78.3 (83)	77.1 (81)	0.84	81.8 (72)	74.8 (92)	0.22
Other	22.3 (47)	21.7 (23)	22.9 (24)		18.2 (16)	25.2 (31)	
Median income = 3,000 rupee							
Less than or equal to 3,000 rupee	63.2 (132)	66.0 (70)	60.2 (62)	0.38	66.7 (58)	60.7 (74)	0.37
Greater than 3,000 rupee	36.8 (77)	34.0 (36)	39.8 (41)		33.3 (29)	39.3 (48)	
Duration in sex work (years)							
Mean (SD)	12.8 (5.4)	14.5 (5.6)	11.0 (4.6)	0.01	12.7 (5.4)	12.8 (5.4)	0.86

Associations between minor age at entry into sex work and recent sexual risk and violence among HIV-infected FSWs in Mumbai, India ($n = 211$)

Table 2

	Entry at 11–17 years	Entry at 18 years or older	Crude OR (95 % CI)	Adj ^a OR (95 % CI)	Adj ^b OR (95 % CI)
Any unprotected transactional Sex, past 90 days	36.3	22.1	2.00 (1.08, 3.71), $p = 0.03$	1.88 (0.98, 3.62), $p = 0.06$	2.06 (1.06, 4.02), $p = 0.03$
Any alcohol use before transactional Sex, past 90 days	44.8	31.4	1.77 (1.01, 3.11), $p = 0.048$	1.40 (0.75, 2.58), $p = 0.29$	1.38 (0.75, 2.57), $p = 0.30$
Any anal transactional sex	4.8	5.7	0.83 (0.24, 2.79), $p = 0.76$	0.85* (0.25, 2.94), $p = 0.80$	1.00* (0.28, 3.53), $p = 0.99$
Any physical or sexual abuse in the past year	19.6	11.4	1.92 (0.89, 4.13), $p = 0.10$	2.03 (0.87, 4.72), $p = 0.10$	2.06 (0.88, 4.79), $p = 0.09$
STI in the past year	39.6	38.1	1.07 (0.61, 1.86), $p = 0.82$	1.23 (0.68, 2.24), $p = 0.49$	1.23 (0.68, 2.24), $p = 0.49$

* Marital status removed from anal sex models based on questionable model fit

^a Adjusted for age, marital status, any formal education and religion

^b Adjusted for age, marital status, any formal education, religion and entry under force or coercion

Associations between having been forced or coerced into sex work and recent sexual risk and violence among HIV-infected FSWs in Mumbai, India ($n = 211$)

Table 3

	Forced or coerced entry	Entry w/o force or coercion	Crude OR (95% CI)	Adj ^a OR (95% CI)	Adj ^b OR (95% CI)
Any unprotected transactional Sex, past 90 days	22.2	34.7	0.51 (0.27, 0.96), $p = 0.04$	0.48 (0.25, 0.94), $p = 0.03$	0.45 (0.23, 0.88), $p = 0.02$
Any alcohol use before transactional Sex, past 90 days	39.8	36.9	1.13 (0.64, 1.99), $p = 0.67$	1.14 (0.63, 2.07), $p = 0.67$	1.11 (0.61, 2.03), $p = 0.73$
Any anal transactional sex	2.3	7.4	0.29 (0.06, 1.39), $p = 0.12$	0.28 (0.06, 1.35), $p = 0.11$	0.27 (0.06, 1.36), $p = 0.11$
Any physical or sexual abuse in the past year	15.9	15.5	1.04 (0.49, 2.20), $p = 0.93$	0.89 (0.40, 1.99), $p = 0.78$	0.84 (0.38, 1.89), $p = 0.68$
STI in the past year	38.6	39.0	0.98 (0.56, 1.73), $p = 0.95$	1.01 (0.57, 1.79), $p = 0.98$	0.99 (0.56, 1.77), $p = 0.98$

^a Adjusted for age, marital status, any formal education and religion

^b Adjusted for age, marital status, any formal education, religion and age at sex work entry