Overlapping Intimate Partner Violence and Sex Trading among High-Risk Women: Implications for Practice

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Abstract

Despite research indicating higher than average rates of intimate partner violence (IPV) across groups of vulnerable women, less is known about the prevalence and types of IPV experienced by women who trade sex for money, drugs, shelter or food, a high risk group for poor health and psychosocial outcomes. Using a cross-sectional design and multivariate logistic regression analyses, this study examined the relationship between IPV and sex trading in a convenience sample of 346 HIV-negative, drug-involved women in relationships, recruited during 2005–2010 in New York City. About 41% and 36% of participants reported lifetime and recent IPV, respectively, by their main partner, with significant differences by recent engagement in sex trading ($p < 0.01$). Results of multivariate analyses indicated that sex trading was associated with recent severe physical or sexual IPV (OR=3.07, $p < 0.01$) and that depression, having ever been married, child sexual abuse, and low income were associated with IPV ($p < 0.05$). Women who reported childhood sexual abuse and recent sex trading had a 7.37 higher odds ($p < 0.01$) for reporting severe physical or sexual IPV compared to those who reported neither. Findings highlight the need to expand screening and interventions among women who trade sex.

Keywords

Intimate partner violence; sex trading; sex work

Introduction

Intimate partner violence (IPV) is a widespread and pervasive public health problem affecting approximately 35% of women in the U.S. (Black et al. 2011). IPV is defined as physical, sexual, or psychological violence by a current or former partner and may include other behaviors or tactics including stalking or coercion (Breiding et al. 2015). IPV is associated with complex bio-psycho-social problems in every domain of life, including psychological distress (post-traumatic stress disorder [PTSD], depression), negative coping behaviors (substance use and engagement in risky sexual behaviors), physical injuries, and

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sexually transmitted infections (Black et al. 2011). Extant literature suggests several groups of women are disproportionately affected by IPV and poor outcomes, including racial/ethnic minorities, younger women, drug-involved women, low-income women, and women with low levels of education (Black et al. 2011; Capaldi et al. 2012). Despite evidence indicating higher than average rates of IPV across several groups of vulnerable women, less is known about the prevalence and types of IPV, and associated risk factors, among women who report sex trading. This is critical as sex trading is associated with many of the same risks and outcomes as IPV, specifically poor mental health (Rossler et al. 2010; Ulibarri et al. 2013), substance use (Chettiar et al. 2010; Li, Li, and Stanton 2010; Semple et al. 2011), and poor sexual health, including infection with HIV (Kerrigan et al. 2013).

Sex trading (or sex work) is defined as the exchange of sex for money, drugs, food, and/or shelter, and may be occasional, intermittent, or regular and street-based or take place in indoor settings (e.g., in brothels, etc.) (Harcourt and Donovan 2005). In recent years, a substantial amount of research has documented frequent violence against women who trade sex by paying partners and others, including police and pimps (Decker et al. 2015; Deering et al. 2014; Kerrigan et al. 2013). While extant literature has carefully documented the prevalence and types of violence perpetrated by pimps and paying partners against women who trade sex, little data are available on the experience of IPV among them. Recent evidence has demonstrated that women who trade sex often have main partners (Decker et al. 2015; Ulibarri et al. 2015; Witte, Batsukh, and Chang 2010), and emerging research has suggested these women may be doubly burdened by violence from partners as well as paying partners/pimps and therefore, may experience increased vulnerability to HIV/STIs, along with other poor psychosocial and health outcomes (Deering et al. 2014; Kerrigan et al. 2013; Mendoza et al. 2017; Shannon et al. 2008a, 2008b, 2015; Ulibarri et al. 2015; Witte et al. 2011). Increased vulnerability to HIV is facilitated through both direct mechanisms, such as sexual concurrency, inconsistent or unprotected sex with HIV-infected partners, needle sharing, and indirect mechanisms, such as social stigma and criminalization associated with engagement in sex trading which reduces access to services, for example (Baral et al., 2012; Kerrigan et al., 2013; Shannon et al., 2015).

Among women who trade sex (whether regular or intermittent), emerging evidence has suggested IPV prevalence as high as 60%, including physical and sexual violence (Carlson et al. 2012; Parcesepe et al. 2015; Ulibarri et al. 2010, 2015). Although recent studies have begun to examine IPV among women who report sex trading, many have only assessed lifetime or past year experiences of IPV. Recent or current IPV may exacerbate risk for engagement in sex trading and/or vice versa. Further, the types of IPV associated with sex trading have not been well-documented; understanding the types of IPV associated with sex trading may offer insight into the relation of these phenomena and inform potential interventions. Finally, no studies of which we are aware have examined IPV among women who trade sex compared to other similarly vulnerable women in relationships. Generating knowledge on of the breadth of violence among women who trade sex, as well as identifying risk factors that contribute to their vulnerability, has important implications for prevention and intervention efforts.

Guided by the ecological systems perspective (Bronfenbrenner 1989), we identified multiple factors associated with IPV and sex trading. On an individual level, extant literature highlights critical associations between IPV and two key factors that are also associated with sex trading. First, accumulating research has demonstrated drug use, specifically injecting or smoking crack, and alcohol use are associated with both IPV and sex trading (Chettiar et al. 2010; Duff et al. 2012; El-Bassel et al. 2005; Gilbert et al. 2012; Okuda et al. 2011). Second, research has consistently demonstrated psychological distress among women exposed to IPV and women who trade sex, which, for some, is associated with subsequent drug and sexual risk behaviors (Black et al. 2011; Okuda et al. 2011; Rossler et al. 2010; Ulibarri et al. 2013, 2015).

On an interpersonal level, multiple studies have found previous trauma, specifically, child sexual abuse, is associated with both sex trading and IPV, and the literature suggests that some women engage in HIV risk behaviors as a coping or survival strategy, which further exposes them to risks, including violence by intimate and non-intimate partners (Dunkle and Decker 2013; El-Bassel et al. 2001; Kimerling et al. 2007). Both sex trading and IPV have also been associated with low levels of social support, which may otherwise buffer their effects (Coker et al. 2003; Latkin, Hua, and Forman 2003). Finally, partner-level risks, specifically, drug and alcohol use, have demonstrated associations with sex trading and IPV, such that exceptional risks and outcomes occur through multi-directional processes, including rape or forced engagement in high-risk behaviors that increase the risk of HIV/STI acquisition and other poor outcomes (e.g., trauma) (Dunkle and Decker 2013; Foran and O'Leary 2008).

On the socio-structural level, multiple studies have found strong associations between economic vulnerability and engagement in sex trading for survival, which disproportionately affects racial and ethnic minorities and is linked to disproportionate rates of incarceration (Brown, et al. 2012; Pettit and Western 2004; Socias et al 2015; Weber 2004). Limited employment and education opportunities, coupled with unstable housing, leave some women with few options, increasing the likelihood of seeking out alternative arrangements to meet their needs, including sex trading for resources (Dunne et al. 2014; Kramer and Berg 2003). Similarly, low socio-economic status has been associated with IPV (Black et al. 2011). Heightened financial stress between partners and lower inhibition/increased aggression among partners who may also be substance-involved are noted as central mechanisms (Capaldi et al. 2012; El-Bassel, et al. 2005; Foran and O'Leary 2008), though some research suggests varying relationships between different measures of socio-economic status (SES) and prevalence and type of violence experienced (Abramsky et al. 2011; Koenig et al. 2006; Xu et al. 2005).

The present study used a cross-sectional design to build upon and address some of the existing gaps in prior research among women who trade sex for money, food, drugs, or other resources by examining in a convenience sample of substance-involved women: 1) the prevalence and types of IPV among those women who reported sex trading compared to women who did not report sex trading, 2) the factors associated with IPV, and 3) whether childhood sexual abuse and extremely low SES (defined as homelessness) demonstrated interactive effects with sex trading to elevate IPV risk. We hypothesized that, compared to

women who did not report recent sex trading, women who did would have a higher prevalence of reported IPV. We also hypothesized multiple individual, interpersonal, and socio-structural risks (depression, substance use – including injecting or smoking crack and binge drinking, low levels of social support, child sexual abuse, partner substance use, low SES, and previous incarceration) would be associated with IPV. Finally, based on prior literature of shared risks among women who report IPV and sex trading, we hypothesized that child sexual abuse and homelessness would demonstrate interactive effects with sex trading, yielding elevated odds for IPV.

Methods

Study design

This analysis used cross-sectional baseline data from Project Connect Two, a New York City-based, randomized, controlled trial to evaluate a couple-based HIV/STI intervention in a convenience sample of 346 low-income, HIV-negative, substance-involved, heterosexual couples (conducted during 2005–2010). Staff obtained written informed consent from all interested and eligible participants before they completed the baseline data survey. All study procedures were approved by the Columbia University Institutional Review Board.

Procedures

Couples were recruited via street outreach, homeless shelters, soup kitchens, word-of-mouth, and syringe exchange programs in New York City. Couples were eligible if *both* partners were: 1) at least 18 years old; 2) HIV-negative (confirmed using biological assays); 3) identified each other as their main, regular partner; 4) reported that they had been together for at least six months; 5) intended to remain together for at least one year; and if *at least one partner* reported: 6) using illicit drugs in the prior 90 days and was either in or currently seeking drug treatment; 7) having had unprotected intercourse (i.e., sex without condoms) with the other in the prior 90 days; and 8) met additional HIV risk criteria, specifically, reporting past 90-day sex with another person, injection drug use, or being diagnosed with an STI (self-reported). Individuals who met the eligibility criteria were asked to invite their main sexual partner to participate, after which staff obtained written informed consent. A total of 1616 individuals completed the eligibility screening interview, and 865 (53.5%) were eligible; 346 couples (692 individuals, 80%) consented and completed baseline interviews. Data were collected using an audio computer-assisted self-interview (ACASI), enabling participants with low levels of literacy to respond. Each participant completed the survey individually, in a private room. Although the study only required participants to report a minimum of six-month relationships, the average reported relationship length was 6.25 years.

Measures

Intimate partner violence (outcome)—IPV was measured using an abbreviated version of the Revised Conflict Tactics Scale (CTS-2). Participants were asked whether they had experienced particular incidents of 'minor or severe' physical, injurious, and sexual violence, as categorized by the CTS-2, since the age of 18 years and in the past six months by their current partner. Minor forms of IPV included acts such as being slapped and severe

IPV included being beaten or a partner using a gun on them, for example. Participants responding affirmatively to at least one question were coded as having experienced lifetime or recent IPV. The CTS-2 has been shown to have convergent, discriminant, and factorial validity, and its reported Cronbach's alpha ranges from 0.75–0.95 (Straus et al. 1996). The CTS-2 has been used successfully with diverse populations including those similar to the target population in this study (Carlson et al. 2012; El-Bassel et al. 2005; Urada et al. 2013).

Socio-demographic variables—Variables measured included the participants' self-reported age, race/ethnicity, and marital status (ever married, which included married, divorced, separated, and widowed).

Individual level variables—*Recent sex trading* (main predictor) was measured by asking participants "*in the past 90 days, have you given sex to receive drugs, money, shelter, or food?*" (yes/no).

Substance use variables included type and frequency of substance used. We examined lifetime and recent (past 30 days) use of crack (smoking or injecting), and binge drinking. Following SAMHSA's (2015) definition, binge drinking was defined as having had 5 or more alcoholic beverages on the same occasion during the past 30 days.

Mental health was assessed using response to items regarding having ever and recently been hospitalized for mental health problems (yes/no), and using the Brief Symptom Inventory (BSI) depression subscale (Derogatis and Melisaratos 1983). The depression subscale is a six-item measure of self-reported symptoms experienced during the prior seven days, measured on a Likert scale. Scores were summed and converted into a t-score, with a mean of 50 and standard deviation of 10, and then a dichotomized variable was created using a t-score of 63 or above. The BSI has demonstrated good internal consistency (0.85) and test-retest reliability (0.84) (Derogatis and Melisaratos 1983) and has been used with similar populations to that of the target population in this study (Ulibarri et al., 2010).

Interpersonal level variables—*Social support* was measured using the Multi-dimensional Scale of Perceived Social Support (score range of 12–84; reported alpha 0.85) (Zimet et al. 1988), which consists of 12 items that ask participants to rate their agreement about perceived support received from family, friends, and significant others. Zimet et al. (1998) reported a total item mean score of 6.05 (SD=0.81) among the female participants in their study sample.

Childhood sexual abuse was measured by asking participants to indicate whether they ever experienced forced sexual acts at age 17 years or younger (yes/no). This item was selected from the Childhood Sexual Abuse Interview (CSAI; El-Bassel, Gilbert, & Frye, 1998); the CSAI is based on interview schedules by Finkelhor (1979) and Sgroi (1982).

Partner substance use was assessed in the same manner as the participants' use. Because this study was couple-based, substance use as reported by the partners themselves are reported.

Socio-structural level variables—We used four items to reflect *socio-economic status*: education (less than high school compared to high school or more), employment

(unemployed vs. employed, which combines occasional/temporary, part-time, and full-time employment), monthly income (less or more than $400 per month), and homelessness (no regular place/living in a shelter, or on the street).

Prior incarceration history was measured by asking participants whether they had ever been to prison or jail and in the past 90 days.

Analytic strategy

We used descriptive statistics to characterize the sample and report prevalence of lifetime and recent IPV. We then performed tests of association (Pearson's Chi-Square, bivariate logistic regression) and multivariate logistic regression analyses to describe the relationship between recent IPV and sex trading, using odds ratios (OR) and 95% confidence intervals (CI), and examined the second hypothesis pertaining to factors associated with IPV. For the regression analyses, two dependent variables were used: a) recent minor physical or sexual IPV (model 1), and b) recent severe physical or sexual IPV (model 1). Variables with a p-value of less than 0.25 in the bivariate analyses with at least one of the dependent variables were entered into the multivariate models. Sex trading, depression, substance use, child sexual abuse, and income demonstrated significance at the 0.05 level in the bivariate analyses with at least one of the dependent variables. Age, race/ethnicity, social support, partner substance use, incarceration history, and employment were not significant at the 0.05 level, but were significant at the 0.25 level with at least one of the dependent variables in the bivariate analyses. Homelessness and education were not significant in the bivariate analyses at the 0.25 level with either dependent variable, but were retained in the multivariate models because past literature has demonstrated associations of these variables with IPV (Black et al., 2011; Capaldi et al, 2012; Gilroy et al., 2016). All variables were checked for multicollinearity, and when collinear, single/marker variables were chosen, based on previous literature: lifetime and recent substance use were highly correlated (r> 0.60); recent binge drinking and crack use were retained in the final models. To examine the third hypothesis regarding interactive effects of child sexual abuse and extremely low SES, we tested individual terms in the multivariate analyses with *any severe physical or sexual IPV* as the dependent variable (model 2). Only significant interaction terms (at the $p<0.05$ level) are reported. Hosmer-Lemeshow Goodness-of-Fit tests indicated adequate fit (p > 0.05) for all multivariate models. All analyses were performed in STATA SE 13.1.

Results

Participant characteristics and associated factors

The average age of the sample (N=346) was 35.4 (SD=6.96) years, and the majority identified as African American/Black (45%) (Table 1). Twenty-eight percent of the participants reported recent sex trading. Just over 16.5% of the sample met the cutoff for depression, and about a third of the sample reported recent binge drinking, while nearly 50% reported recent crack use. The average score on the scale for social support was 53.66 (SD=18.59), with a mean item score of 4.47. Nearly a quarter of the sample reported child sexual abuse (23.84%). Data indicated that nearly 40% of the male partners reported binge drinking, while 50% reported recent crack use. The majority of the participants reported low

SES, including 63.3% reporting recent homelessness. Nearly 14% of the sample reported recent time in jail or prison.

IPV and sex trading: prevalence and types

About 40.7% and 35.82% of the sample reported lifetime or recent IPV by their main study partner, respectively, with significant differences by sex trading ($p < 0.01$) (Table 2). The most frequent forms of IPV reported were physical and sexual violence. Women reporting sex trading reported higher prevalence of all forms of lifetime and recent IPV by their partner. For example, we found that while approximately 13% of the total sample reported recent severe physical or sexual violence, 25.3% of women reporting recent sex trading reported severe physical or sexual IPV ($p < 0.001$). Bivariate analyses indicated that the unadjusted ORs for recent minor physical or sexual IPV and recent severe physical or sexual IPV associated with sex trading were: 2.35 (95% CI [1.42, 3.90]), and 3.79 (95% CI [1.98, 7.26]), respectively.

IPV and sex trading: multivariate analyses

Final multivariate models (Table 3) included: age, race/ethnicity, marital status, recent sex trading, depression, recent binge drinking and crack use, social support, child sexual abuse, recent partner binge drinking and crack use, income status, recent homelessness, employment status, education status, and whether participants had recently spent time in jail or prison. Results of multivariate analyses (model 1) indicated that recent minor physical or sexual IPV were not associated with sex trading, adjusting for all other variables (OR = 1.67, 95% CI: 0.91, 3.11). However, women reporting sex trading were three times as likely to report recent severe physical or sexual IPV (OR = 3.07, 95% CI: 1.33, 7.07) than women who did not report sex trading.

Examining the other risk factors and IPV (model 1) indicated that depression was associated with being more likely to report recent minor (OR = 2.56, 95% CI: 1.30, 5.06) and severe (OR = 3.04, 95% CI: 1.27, 7.28) physical or sexual IPV. As expected, child sexual abuse was also associated with being more likely to report recent (OR = 2.86, 95% CI: 1.57, 5.20) and severe (OR = 2.77, 95% CI: 1.26, 6.11) physical or sexual IPV. Similar to the bivariate results, however, women who reported low income were less likely to report recent minor physical or sexual IPV (OR = 0.52, 95% CI: 0.28, 0.96, adjusting for all other variables, but that this was not significant when examining recent severe physical or sexual IPV (OR = 0.46, 95% CI: 0.20, 1.04). Unexpectedly, regression analyses did not show any significant associations for any of the other factors and IPV. We did, however find an association between having ever been married and recent severe physical or sexual IPV (OR = 2.67, 95% CI: 1.19, 6.01).

To address the final hypothesis that women reporting childhood trauma and very low SES as well as sex trading would have higher odds of reporting IPV, we introduced interaction terms in the regression model, one by one. Counter to the hypothesis, interaction analyses of homelessness with sex trading did not reveal any significant associations. Child sexual abuse, however, revealed a significant interaction association (Table 3, model 2): women who reported sex trading and child sexual abuse had a seven-fold-odds of reporting recent

severe physical or sexual IPV (p < 0.01), compared to women who reported neither (OR: 0.22*5.59*5.99=7.37).

Discussion

Contributing to the growing literature on the relationship between IPV and sex trading, the present analyses were used to examine the prevalence of IPV and its association with sex trading among a sample of substance-involved, HIV-negative women. We found higher reported prevalence of IPV among women reporting recent sex trading, compared to those who did not report sex trading, by their current main partner. This was true across all individual forms of IPV and overall. These findings support the results reported in recent literature that women who trade sex not only experience violence by clients but by intimate partners as well, and prevalence estimates of IPV were comparable to other studies among female sex workers (Carlson et al. 2012; Deering et al. 2014; Parcesepe et al. 2015; Ulibarri et al. 2010, 2015). Our results also highlight the general pervasiveness of IPV among vulnerable populations of women; both lifetime and recent IPV estimates for the total sample, as well as by recent sex trading status, far exceeded nationally reported rates of IPV (Black et al. 2011). These results support calls to action to invest further in research and efforts to redress violence against women, especially among vulnerable sub-groups (Garcia-Moreno et al. 2014).

Further examining the main research question, we assessed sex trading by severity of IPV and included control and confounding variables. Multivariate analyses examining recent minor physical or sexual IPV and sex trading did not reveal elevated odds associated with sex trading. However, we found that women reporting sex trading had a three-fold odds of reporting severe physical or sexual violence, compared to women who did not report sex trading. This finding suggests that, although all forms of violence were prevalent in this sample of high-risk women, women who trade sex may be at particular risk for severe or more extreme forms of violence. Although not examined in this paper, this elevated risk of severe forms of IPV may be, in part, facilitated by the criminalized and stigmatized nature of sex trading in the U.S. (UNAIDS 2015), which may be even more severe among women who are both drug-involved and sex trading.

Consistent with our secondary hypothesis that individual, interpersonal, and socio-structural risks would be associated with IPV, we found that that depression, child sexual abuse, and having ever been married (only for severe IPV) maintained their associations with IPV in the multivariate analyses, which is generally consistent with results reported in prior literature (Capaldi et al. 2012). Inconsistent with extant literature, however, was the finding that none of the other factors were associated with IPV, and that low-income status was associated with lower odds of minor physical and sexual IPV (not severe IPV) (Capaldi et al. 2012). Findings suggest, potentially, that sex trading and child sexual abuse and related mental health outcomes are more closely or directly associated with IPV than other factors, which may serve as mediating factors. That is, that drug and alcohol use, for example, may be partially explained by previous trauma and mental health, a mechanism that has been previously explored in empirical research and described earlier. The surprising finding of higher income being positively associated with minor physical and sexual IPV may be

explained as a statistical artifact, given the relative homogeneity of socio-economic indicators across the sample. Alternatively, this finding may reflect different mechanisms at play, which were unaccounted for; previous research has demonstrated that differential income patterns among partners yield different risk and protective associations with IPV (Abramsky et al. 2011; Koenig et al. 2006; Xu et al. 2005). For example, some research has suggested that increased economic independence or control among women may be associated with increased partner violence - income generation or independence may threaten existing power dynamics within the dyad and contributes to violence (Vyas & Watts, 2009).

Addressing our final research question, we tested two interaction terms with sex trading to assess IPV risk. We did not find support for our hypothesis on the interactive effect of homelessness with sex trading on IPV. Although surprising, the lack of findings may be explained by the socio-economic homogeneity of the sample. A substantial amount of research has demonstrated engagement in sex trading is closely linked to poverty – specifically, under or unemployment, low income, and homelessness (Baral et al. 2012; Brown et al. 2012; Scorgie et al. 2012; Tyler 2009; Weber et al. 2004). Additionally, the lack of significant findings may be explained by the boyfriend-pimp phenomenon that some women report in which a partner serves as a pimp, providing resources, but also controlling finances and directing the engagement in sex trading (Shannon et al. 2008a; Goldenberg et al. 2014). It is possible that for some participants, they were able to find shelter with a boyfriend-pimp, but in turn, exchange sex for that shelter, among other items or needs. Consistent with our predictions, however, we did find interactive effects for child sexual abuse: women who reported child sexual abuse and recent sex trading, compared to neither, had a staggering seven-fold odds of reporting recent severe physical or sexual IPV. This finding suggests that, among women who trade sex, previous trauma may exponentially exacerbate risks, and that the presence of potentially protective factors, such as social support, may not provide the same advantages as it may for other women who may not have experienced such trauma, and should be carefully considered in practice settings.

These analyses had a number of limitations. First, the analyses relied on cross-sectional data, which limited any conclusion on causality or temporality. Second, participants were recruited through convenience sampling and thus, are potentially unrepresentative of the population, which limits the generalizability of the findings. Given HIV-negative women were recruited into the study, findings may also be biased in terms of crossover rates of IPV and sex trading, and all findings are limited to at-risk populations. Additional research focused on women who are HIV-positive may provide additional insight on the relationship between sex trading and IPV. Third, the study mainly relied on self-reported data, and although participants were informed of their confidentiality, social acceptability bias may still have affected the accuracy of the results. Similarly, the use of self-reported data may have been affected by recall bias. Fourth, this paper only examined the relationship between a limited number of substances and sex trading and IPV. Given the ongoing opioid epidemic (NIDA 2018), it would be pertinent for future research to examine closely the role of opioids as a potential moderator and mediator of the relationship between sex trading and IPV. Fifth, and one of the main limitations, is that our IPV measure did not capture perpetration by past or concurrent partners. Estimated prevalence of IPV are likely underestimates. Finally, the

main limitation was that sex trading was assessed for the past 90 days, not ever; it is, therefore, possible that some women who previously engaged in sex trading were coded as "no sex trading."

Conclusions

Findings from this paper suggest an urgent need for more research on IPV among women who engage in sex trading. Specifically, future research would benefit from closer examinations of lifetime and recent IPV, and its association with other risks. Findings also suggest that organizations working with women who trade sex may benefit from screening for IPV as well as violence perpetrated by others, and work to reduce risks associated with partner abuse. Further, enhanced safety planning for women who trade sex may prove beneficial – specifically, safety planning that includes risk from both intimate partners and paying partners, pimps, among others. Also, given clear evidence that women engaged in sex trading often have intimate as well as non-intimate partnerships, and that having ever been married was a risk factor for IPV, prevention intervention programs should also consider couple-based strategies for this specific target group. Finally, our findings demonstrated that childhood trauma and depression may be key factors associated with IPV and sex trading; yet women who trade sex may not have their mental health and health needs met due to stigma and discrimination. Efforts to reduce or eliminate punitive measures against women who trade sex and working to improve access to services may help to reduce these burdens and improve outcomes.

Acknowledgements

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Table 1.

Sample characteristics (N=346)

	n	%
Socio-demographics		
Age, years (mean, SD)	35.4	6.96
Race/Ethnicity		
African American/Black	157	45.38
Hispanic/Latino	79	22.83
Caucasian/White	48	13.87
Other/Multiracial	62	17.92
Ever married	190	54.91
Individual Level variables		
Sex trading	97	28.03
Mental Health		
Ever hospitalized for mental health	104	30.6
Recent hospitalization for mental health	48	13.87
Depressed	57	16.67
Substance Use		
Ever binge drinking	174	50.29
Recent binge drinking	118	34.1
Ever crack use	235	67.92
Recent crack use	167	48.27
Interpersonal Level Variables		
Social support (mean, SD)[a]	53.66	18.59
Social support, total item mean score	4.47	
Experienced Child Sexual Abuse	82	23.84
Partner Substance Use (n=342)[b]		
Ever binge drinking	196	57.31
Recent binge drinking	133	38.89
Ever crack use	238	69.59
Recent crack use	171	50
Socio-structural Level Variables		
Less than high school education	150	43.35
Low income (less than $400/month)	255	73.70
Homeless	219	63.29
Employed	52	15.03
Incarceration history (jail/prison)		
Ever	137	39.6
Recent	48	13.87

[a] Social support mean score represents average score for the total scale (range 12–84); total item mean score represents the average item score.

[b] missingness due to non-response

Table 2.

Prevalence of IPV

	Total (N=344[a])		Sex Trading (n=96)		No sex trading (n=248)		
	N	%	n	%	n	%	p-value
Lifetime							
Physical							
Minor	81	23.55	32	33.33	49	19.76	0.008
Severe	52	15.12	24	25	28	11.29	0.001
Any	94	27.33	35	36.46	59	23.79	0.018
Sexual							
Minor	76	22.09	30	31.25	46	18.55	0.011
Severe	24	6.98	11	11.46	13	5.24	0.042
Any	85	24.71	35	36.46	50	20.16	0.002
Injurious	69	20.06	29	30.21	40	16.13	0.003
Any minor physical or sexual violence	*113*	*32.85*	*43*	*44.79*	*70*	*28.22*	*0.003*
Any severe physical or sexual violence	*61*	*17.73*	*30*	*31.25*	*31*	*12.5*	*0.000*
Any IPV	*140*	*40.7*	*51*	*53.12*	*89*	*35.89*	*0.004*
Recent							
Physical							
Minor	61	17.73	29	30.21	32	12.9	0.000
Severe (n=339 [a])	39	11.5	21	22.11	18	7.38	0.000
Any (n=340 [a])	72	21.18	32	33.33	40	16.39	0.001
Sexual							
Minor (n=340 [a])	71	20.88	27	29.03	44	17.81	0.023
Severe	11	3.2	6	6.25	5	2.02	0.045
Any (n=340 [a])	74	21.76	29	31.18	45	18.22	0.01
Injurious (n=331 [a])	54	16.31	26	27.66	28	11.81	0.000
Any minor physical or sexual violence (n=340 [a])	*97*	*28.53*	*39*	*41.94*	*58*	*23.48*	*0.001*
Any severe physical or sexual violence (n=339[a])	*33*	*12.98*	*24*	*25.26*	*20*	*8.2*	*0.000*
Any IPV (n=335 [a])	*120*	*35.82*	*45*	*48.82*	*75*	*30.99*	*0.003*

[a]missingness due to non-response

Table 3.

Multivariate regression analyses of IPV

	Any recent minor physical or sexual IPV		Any recent severe physical or sexual IPV			
	Model 1 (no interaction)		*Model 1 (no interaction)*		*Model 2 (interaction term)*	
	OR [95% CI]	p-value	OR [95% CI]	p-value	OR [95% CI]	p-value
Interaction: STxCSA					**0.22 [0.05, 0.97]**	**0.046**
Socio-demographics						
Age per year	0.97 [0.93, 1.01]	0.154	0.99 [0.94, 1.05]	0.801	0.99 [0.94, 1.05]	0.813
Race/Ethnicity (ref: Caucasian/White)						
African American/Black	1.06 [0.46, 2.45]	0.885	0.92 [0.31, 2.76]	0.889	0.82 [0.27, 2.47]	0.726
Hispanic/Latino	0.95 [0.38, 2.38]	0.920	0.57 [0.16, 2.03]	0.387	0.46 [0.13, 1.66]	0.236
Other/Multiracial	1.58 [0.63, 3.98]	0.334	1.85 [0.56, 6.16]	0.315	1.70 [0.51, 5.65]	0.387
Ever married	1.49 [0.85, 2.60]	0.163	**2.67 [1.19, 6.01]**	**0.017**	**2.82 [1.25, 6.38]**	**0.013**
Individual Level variables						
Recent sex trading	**1.67 [0.91, 3.11]**	**0.100**	3.07 [1.33, 7.07]	0.009	5.59 [2.01, 15.56]	0.001
Depressed	**2.56 [1.30, 5.06]**	**0.007**	**3.04 [1.27, 7.28]**	**0.013**	**3.20 [1.33, 7.67]**	**0.009**
Recent binge drinking	1.36 [0.76, 2.45]	0.303	1.20 [0.53, 2.70]	0.663	1.14 [0.50, 2.60]	0.759
Recent crack use	1.35 [0.70, 2.62]	0.370	1.00 [0.40, 2.51]	0.997	1.03 [0.41, 2.63]	0.946
Interpersonal Level Variables						
Social Support	1.00 [0.99, 1.02]	0.891	0.99 [0.97, 1.01]	0.24	0.99 [0.97, 1.01]	0.258
Child sexual abuse	**2.86 [1.57, 5.20]**	**0.001**	**2.77 [1.26, 6.11]**	**0.011**	**5.99 [2.04, 17.60]**	**0.001**
Partner, recent binge drinking	1.01 [0.58, 1.77]	0.962	1.05 [0.49, 2.27]	0.900	1.10 [0.51, 2.38]	0.812
Partner, recent crack use	1.20 [0.65, 2.24]	0.558	1.01 [0.43, 2.35]	0.989	1.02 [0.43, 2.43]	0.961
Socio-structural Level variables						
Low income (less than $400/month)	**0.52 [0.28, 0.96]**	**0.036**	**0.46 [0.20, 1.04]**	**0.063**	**0.46 [0.20, 1.05]**	**0.064**
Homelessness, recent	0.69 [0.40, 1.22]	0.204	0.68 [0.31, 1.46]	0.320	0.72 [0.33, 1.56]	0.404
Employed	1.03 [0.47, 2.23]	0.948	1.96 [0.74, 5.21]	0.179	1.97 [0.74, 5.30]	0.177
High school education or greater	1.09 [0.63, 1.91]	0.752	0.96 [0.44, 2.09]	0.915	0.96 [0.44, 2.09]	0.921
Recent jail/prison	0.45 [0.20, 1.03]	0.060	1.19 [0.46, 3.12]	0.719	1.14 [0.43, 3.01]	0.799