

Intimate Partner Violence and HIV Risks among Migrant Women in Central Asia

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Abstract

Objectives: Despite substantial research documenting the relationships between intimate partner violence (IPV) victimization and HIV risks among women worldwide, few studies have examined these relationships among the growing population of migrant women who are disproportionately affected by these co-occurring problems. This cross-sectional study examined associations between lifetime IPV victimization and HIV risks among female migrants in Almaty, Kazakhstan.

Methods: Survey interviews and testing for HIV and Syphilis were conducted among a random sample of 225 female migrant vendors who were employed in one of the largest markets in Central Asia. Multivariate regression estimated associations between experiencing any lifetime physical and/or sexual IPV victimization measured by the revised conflict tactics scale (CTS2) and a number of HIV risks, controlling for potentially confounding socio-demographic variables, drug and alcohol use, and mobility patterns.

Results: Of the total sample, 28.9% reported ever experiencing physical or sexual IPV. Multiple associations were found between a history of IPV victimization and a range of HIV risks, including sex with multiple partners, unprotected sex with a non-primary partner, a higher number of unprotected sex acts with non-primary partners, and a higher number of self-reported sexually transmitted infections (STIs).

Conclusions: The multiple associations found between IPV and HIV risks in this sample underscore the importance of redoubling women-specific HIV prevention efforts that consider both IPV and mobility.

Keywords: Partner violence; HIV risk; Migrant women; Mobility

Introduction

Central Asia is one of the few regions in the world where the HIV epidemic is still intensifying with a rapid rise in heterosexual transmission [1]. From 2001 to 2011, the estimated prevalence rate of HIV in Kazakhstan increased more than 25%, from <0.1% in 2001, to 0.2% in 2011. Over this same time period, estimated new infections per year rose from 1,600 cases to 2,700 cases [1]. Kazakhstan experienced a threefold increase in the number of new HIV infections through heterosexual contact between 2006 and 2012, and heterosexual transmission recently surpassed injection drug use as the dominant form of transmission in the country. Furthermore, regional incidence rates and prevalence rates for women have steadily increased over the past decade [1,2]. Despite the sharp rise in heterosexually-acquired transmission among women in Central Asia, little research has been conducted on HIV among the large and growing population of migrant women in Kazakhstan. About one-fifth (21.1%) of Kazakhstan's 16.4 million residents are immigrants (non-citizen residents of Kazakhstan), and of these, 50.7% are women [3].

Although there are equal numbers of female and male migrants, both in Kazakhstan and worldwide, the bulk of research on HIV among migrants has focused on men; yet migrant women worldwide are at elevated risk of HIV and sexually transmitted infections (STIs) [4]. A few studies have suggested that migration and mobility are

strongly associated with risk behaviors as well as with HIV/STIs among women [4-7]. Research has also found high rates of intimate partner violence (IPV) victimization among migrant women, which may also contribute to their elevated risk for HIV and STIs [8-10]. Over the past two decades, accumulating research has established that experiencing physical and/or sexual IPV increases the likelihood of acquiring HIV and STIs by (1) impeding women's ability to negotiate safe sex; (2) increasing the likelihood of unprotected sex; (3) increasing the likelihood that both women and their partners will have sex with multiple sexual partners; and (4) creating lacerations which increases the likelihood of HIV acquisition through forced rough sex [11-13]. To date, however, very few studies have explored this relationship between IPV victimization and HIV/STI transmission risks among migrant women. Furthermore, to our knowledge, no studies have examined this relationship among migrant women in Central Asia.

Changing social and economic contexts associated with migration may increase the likelihood that women will both experience IPV [14,15] and engage in risky sexual behaviors associated with HIV transmission. Migrant women may face a shift in gender role norms from their country of origin to their destination country [16,17], which can lead to disagreements between women and their partners about their respective roles [18]. This is particularly true for migrant women who have come from regions of Central Asia that have adopted more traditional gender roles influenced by Islam. These are often a sharp contrast to the more egalitarian gender roles they may encounter in a city such as Almaty, Kazakhstan, which is heavily

influenced by Russia and globalization [19]. Migration may also lead to isolation [20], higher divorce rates, and geographically stretched households in which members work and live in different countries [21]. Migrants often have limited access to health and social services [22-24] due to their illegal status, which in turn may impede their efforts to address IPV and risks for HIV/STIs. Migrant women are also at increased risk of being sexually exploited [25,26] or engaging in survival sex, often under the influence of alcohol or drugs [13,27-31], which may further contribute to their risks for both HIV and IPV.

Emerging research has begun to document the relationship between different patterns of mobility and HIV transmission among migrant women, yet the extent to which mobility may contribute to IPV remains unknown. Both the number of trips and the number of days spent away from home have been associated with higher prevalence of HIV among women in Cameroon [32]. Another study found that women's mobility (measured by having recently moved to town) in Burkina Faso was associated with a higher number of sexual partners and more incidences of transactional sex, particularly in border towns [33]. Prior publications from the current study found multiple associations between different mobility patterns and a number of HIV risk behaviors, including condom non-use and multiple sex partners among both male and female migrant market vendors [6,34]. These studies, however, did not consider the potential effect of women's experiences of IPV. How the experience of IPV may increase the likelihood of HIV transmission risks after adjusting for the potentially confounding effect of mobility has yet to be adequately researched among migrant women in Central Asia and globally.

This study represents an initial foray into the intersecting problems of IPV victimization and HIV risks among migrant women in Central Asia. The objectives of this study are (1) to estimate lifetime and past year prevalence rates of different types of IPV among a random sample of migrant women; (2) to describe socio-demographics mobility patterns and HIV risks as well as biomarkers for HIV and syphilis in this sample and how these characteristics vary by IPV status and (3) to examine associations between any lifetime experience of physical, injurious or sexual IPV and HIV risks after adjusting for potentially confounding socio-demographics, mobility patterns and drug and alcohol use variables, which have been found to be strongly associated with both IPV victimization and HIV risks.

Methods

Study site

This study was conducted in the Barakholka Market, one of the largest marketplaces in Central Asia, which is located 15 kilometers from the city center of Almaty. During the study period (from July to October 2007), the market employed approximately 30,000 vendors, about 70% of whom were women [6]. For this study, we selected the five largest submarkets, which had a total of 5,512 stalls with an average of two employees per stall.

Random sampling and recruitment

We conducted geomapping to generate a numbered list of all stalls in these submarkets, and then randomly selected 435 stalls. Trained research assistants (RAs) approached a total of 920 individuals employed in these stalls, of which 805 agreed to complete the screening (87.5% participation rate). Eligibility criteria for the study included: (1) aged 18 or older; (2) employed in a randomly selected

stall; (3) had traveled two or more hours outside Almaty within the past year; (4) not a citizen of Kazakhstan (external migrant) or maintained a permanent residence two or more hours from Almaty (internal migrant); (5) fluent in Russian. Less than 5% of the women screened were excluded due to lack of fluency in Russian. Of those screened, about half (N=450, 52.4%) met eligibility criteria, of whom 225 were women and were included in this study.

Data collection procedure

Within 14 days of screening, RAs obtained informed consent and conducted a one-hour face-to-face structured interview with participants in a private office. RAs administered pre-test counseling and collected a blood sample via a needle prick for HIV and syphilis testing. The instrument was developed in English, translated into Russian, and back-translated to English again. Participants received a small gift with a cash value equivalent to US \$6. The study protocol was approved by the Institutional Review Board of Columbia University and the Ethics Board of the Kazakhstan School of Public Health in Almaty.

Measures

Socio-demographic characteristics

Participants were asked to provide information on their age, ethnicity, education, marital status, and immigration status (legal resident of Kazakhstan vs. not legal).

Intimate partner violence

We assessed experience of different types of IPV using a modified, 8-item version of the Revised Conflict Tactics Scale (CTS2). The sexual, injurious and physical IPV subscales of the CTS2 were used to assess the prevalence of any IPV in the past and in the previous year using dichotomous yes/no responses. Internal consistency of the CTS2 subscales ranges between 0.79 and 0.95 [35].

Mobility characteristics

Participants were asked to report whether or not and the number of times they had traveled in the previous year to buy or sell goods and to visit friends or family, and how many days they had spent outside Almaty on their last trip.

Sexual risk behaviors

We asked participants the number of times they had vaginal sex with primary and other partners in the previous 90 days, how many times they had used condoms during vaginal sex with primary and other partners, whether or not they had any anal sex or oral sex in the past 90 days, whether or not they had and the total number of sexual partners with whom they had vaginal or anal sex in the past 90 days. Given the relatively low rates reported for engaging in oral and anal sex among this population, we did not report separate questions about these sexual activities by primary and other partners.

Self-reported STIs

We asked participants whether they had ever been diagnosed with chlamydia, gonorrhea, syphilis, trichomoniasis, genital or anal herpes, or genital or anal warts.

Biological testing for syphilis and HIV

We screened participants for antibodies to syphilis (ICE Syphilis Murex, Abbott Laboratories, Abbott Park, IL) and HIV. We did find one positive HIV case among the sample of 225 women who were tested, but did not include it in the results because we could not conduct statistical testing with a single case. Syphilis is prevalent in Central Asia and an important biomarker of past and current risky sexual behavior. The syphilis test using dry plasma is estimated to have 99% sensitivity and 99% specificity [36].

Problem drinking behaviors

The 4-item CAGE screening test was used to assess current problem drinking. CAGE scores equal or greater than 2 denoted problem drinking [37].

Illicit drug use

We asked participants about any lifetime use of heroin, marijuana, or any other illicit drug.

Data analysis

We calculated descriptive statistics for these variables by IPV victimization status (whether or not participants indicated that they had ever experienced physical or sexual IPV). Chi-square tests (for categorical variables) and t-tests (for continuous variables) were used to examine bivariate associations between lifetime experience of IPV and the socio-demographics, mobility characteristics, substance use, and HIV risk outcome variables. There was a small proportion of missing data (03%-3.1%) for some variables. However, because the missing rate for the number of days spent outside of Almaty on the respondent's last trip was 11%, we performed multiple imputation with the MICE (Multiple Imputation by Chained Equations) module in Stata version 9.2 for Windows (Microsoft Corporation, Redmond, WA) [38]. Multiple imputations can reduce substantial bias caused by missing data [39].

We conducted multivariate analyses to examine associations between ever having experienced physical, sexual or injurious IPV and HIV risks. We used logistic regression for dichotomous dependent variables, including biological assay of syphilis, having more than one sexual partner in the past 90 days, having had any anal or oral sex in the past 90 days, and having had any unprotected sex in the past 90 days. We used negative binomial regression for over-dispersed count data (e.g., number of unprotected sex acts). All regression models were adjusted for age, ethnicity, education level, marital status, immigration status, drug and alcohol use, and mobility patterns. We calculated odds ratios (ORs) for logistic regression and incidence rate ratios (IRRs) for negative binomial regression.

Results

Prevalence of different types of IPV

Out of 225 participants, 65 (28.9%) reported experiencing physical, sexual, or injurious IPV in their lifetime (Table 1). Physical violence was most common, experienced by 27.6% of participants, with 18.2% reporting sexual violence and 20.0% reporting violence that caused

injury. During the prior year alone, 15 participants (6.7%) experienced some form of IPV.

	Total Sample, n (%)
Any lifetime IPV	65 (28.9)
Any lifetime physical IPV	62 (27.6)
Any lifetime sexual IPV	41 (18.2)
Any lifetime injurious IPV	45 (20.0)
IPV in the past year	15 (6.7)
Any physical IPV in the past year	12 (5.3)
Any sexual IPV in the past year	6 (2.7)
Any injurious IPV in the past year	6 (2.7)

Table 1: Lifetime experience of intimate partner violence (IPV).

Socio-demographic characteristics

Sample characteristics are reported in Table 2. Participants had an average age of 28.6 years (SD=4.65). Most women (69.8%) were married, and the majority had completed a secondary education (60.9%) or higher (30.5%). Participants self-identified as ethnic Kazakhs (25.4%), Kyrgyz (29.0%), Uzbeks (8.9%), or other ethnicities (36.7%). The majority (92.9%) were Muslim. More than one-third of participants were legal residents of Kazakhstan (37.3%) while the others (62.7%) had either temporary registration or had illegal status. Only 3.1% of women reported any lifetime drug use and 7.1% scored positive for problematic alcohol use on the CAGE.

Mobility patterns

Participants were highly mobile. During the prior year, 37.3% of participants had travelled outside of Almaty at least once to sell or purchase goods, and the median number of such trips taken was five. Additionally, 93.8% of participants had travelled outside of Almaty at least once to visit family and friends in the prior year, and the median number of such trips taken was three. The median number of days spent outside of Almaty during the last trip was ten.

Prevalence of IPV by socio-demographic characteristics and mobility patterns

Several socio-demographic and mobility characteristics were associated with having ever experienced IPV in one's lifetime (Table 2). Women who were divorced or separated were more likely to report lifetime experience of IPV ($p<0.001$) than single never married and married women. Uzbek participants were significantly more likely to report lifetime experience of IPV than other ethnicities ($p<0.01$). Younger participants were less likely to report lifetime experience of IPV than those who were older ($p<0.001$).

Women who travelled outside Kazakhstan to sell or purchase goods in the past year were more likely to report lifetime experience of IPV than those who did not travel ($p<0.05$). Additionally, women who travelled to visit family or friends more than three times in the past year (above the median) were more likely to report lifetime experience of IPV than those who travelled less frequently to visit family or friends ($p<0.05$).

	Total Sample n (%)	No IPV ^A (n=160) n (%)	IPV ^A History (n=65) n (%)
Total	225	160 (71.1)	65 (28.9)
Education			
Less than secondary	19 (8.6)	12 (7.6)	7 (11.1)
Secondary	134 (60.9)	91 (58.0)	43 (68.3)
More than secondary	67 (30.5)	54 (34.4)	13 (20.6)
Marital status			
Married	156 (69.8)	119 (74.4)***	37 (57.8)***
Single	32 (14.7)	31 (19.4)***	1 (1.6)***
Divorced/Separated	36 (15.6)	10 (6.2)***	26 (40.6)***
Living situation			
Lives with primary partner in Almaty	139 (62.3)	98 (61.6)	41 (64.1)
Primary partner does not live in Almaty	84 (37.7)	61 (38.4)	23 (35.9)
Ethnicity			
Kazakh	57 (25.4)	44 (27.5)**	13 (20.0)**
Kyrgyz	65 (29)	47 (29.4)**	18 (27.7)**
Uzbek	20 (8.9)	8 (5.0)**	12 (18.5)**
Other (Russian, Uighur, Turkish, Gypsy/Roma, Dungan, Korean)	82 (36.7)	61 (38.1)**	21 (32.3)**
Immigration status			
Legal resident of Kazakhstan	84 (37.3)	62 (38.8)	22 (33.8)
Other ^B	141 (62.7)	98 (61.2)	43 (66.2)
Alcohol & drug use			
Problematic alcohol use	16 (7.1)	9 (5.6)	7 (10.8)
Any lifetime drug use	7 (3.1)	4 (2.5)	3 (4.7)
Mobility			
Has travelled to sell or purchase goods in the last year	84 (37.3)	53 (33.1)*	31 (47.7)*
Above the median number of times traveling to see family and friends in the past year (median=3 times)	98 (43.6)	61 (38.1)*	37 (56.9)*
Above the median days spent outside of Almaty on the last trip (median=10 days)	73 (32.4)	48 (30.0)	25 (38.5)
	Mean (SD)		
Age	28.6 (4.5)	27.9 (4.8)***	30.3 (2.9)***
†p<0.1, *p<0.05, **p<0.01, ***p<0.001			
^A Never or ever having experienced intimate partner violence (IPV) over the course of one's lifetime			
^B Includes official registration with the migrant office, temporary migrant registration, or illegal			

Table 2: Lifetime experience of intimate partner violence (IPV) by socio-demographic and migration characteristics.

Sexual risk behaviors and sexual health outcomes

As shown in Table 3, 43 participants (19.2%) reported having more than one sexual partner in the past 90 days. 34 participants (15.1%) had engaged in anal sex in the past 90 days, and 32 participants (14.2%) had engaged in oral sex. The majority of women (87.5%) reported having had unprotected sex with a primary partner, with an average of 40.9 unprotected sex acts in the past 90 days and 26 women

(11.6%) reported unprotected sex with a non-primary partner. Fifty-seven participants (25.3%) self-reported that they had ever been diagnosed with an STI. Biological testing indicated that 6.7% of the sample tested positive for syphilis. Bivariate associations found that lifetime experience of any physical, sexual or injurious IPV was associated with multiple HIV risks.

		Total sample, n (%)	No IPV ^A (%) n=160 n (%)	IPV ^A n=65 n (%)
Sexual risk behaviors				
Having more than one sexual partner in the past 90 days	Yes	43 (19.2)	19 (11.9)***	24 (36.9)***
Unprotected sex with primary partner in past 90 days	Yes	196 (87.5)	135 (84.9) †	61 (93.8) †
Unprotected sex with non-primary partner in past 90 days	Yes	26 (11.6)	8 (5.0)***	18 (27.7)***
Anal sex in the past 90 days with any partner	Yes	34 (15.1)	17 (10.6)**	17 (26.2)**
Oral sex in the past 90 days with any partner	Yes	32 (14.2)	17 (10.6)*	15 (23.1)*
Sexual health outcomes				
Ever been diagnosed with an STI (self-report)	Yes	57 (25.3)	27 (16.9)***	30 (46.2)***
Bioretesting results: tested positive for Syphilis	Yes	15 (6.7)	8 (5.0)	7 (10.8)
Other sexual health-related variables [min/max]		Mean (SD)		
Total number of unprotected sex acts with primary partner in past 90 days [0, 150]		40.89 (26.02)	37.09 (26.78)**	50.25 (21.49)**
Total number of unprotected sex acts with non-primary partner in past 90 days [0,40]		4.67 (7.3)	6.28 (9.89)	3.45 (4.37)
†p<0.1, *p<0.05, **p<0.01, ***p<0.001				
^A Never or ever having experienced intimate partner violence (IPV) over the course of one's lifetime				

Table 3: Lifetime experience of intimate partner violence (IPV) by sexual risk behaviors and sexual health outcomes (N=225).

Association of IPV and HIV risk: multivariate analysis

After adjusting for potentially confounding socio-demographics, substance use, and mobility factors, lifetime experience of any physical or sexual IPV was associated with having had more than one sexual partner in the past 90 days (aOR=2.52, 95% confidence interval [CI]=1.02, 6.27), having had any unprotected sex with a non-primary partner (aOR=6.13, CI=1.69, 22.11), self-report of ever being diagnosed with an STI (aOR= 3.87, CI=1.74, 8.61) and reporting a greater number of unprotected sex acts with primary partners in the past 90 days (aIRR=8.56, CI=1.06, 16.07) (Table 4). Any lifetime IPV was also significantly associated with engaging in oral sex with any partner in the past 90 days (aOR=3.31, CI=1.03, 10.62). Women with lifetime IPV victimization were more likely to report engaging in anal sex with any partner in the past 90 days in the unadjusted analyses, but this association was not significant in the adjusted analyses (aOR=2.40, CI=0.87, 6.66). The association between lifetime IPV and testing positive for syphilis was not significant (aOR=2.77, CI=0.73, 10.49).

Discussion

This study addresses several critical research gaps on IPV and HIV risks among migrant women, by estimating the prevalence of IPV and examining multiple ways in which IPV victimization may be associated with HIV risks [11-13] among a random sample of migrant women in Central Asia. The lifetime prevalence rate of experiencing any physical IPV (28.9%) found among this random sample of migrant women in Kazakhstan is substantially higher than the rate of physical IPV reported in a recent multiple cluster survey in Kazakhstan (12.8%) using a similar CTS measure [40] and substantially higher than rates found in neighbor countries of the external migrants in this study [41,42]. The lifetime rate of sexual IPV reported among this sample of migrant women (18%) is also considerably higher than rates reported in these surveys in Kazakhstan (3.8%), Kyrgyzstan (3%) and Tajikistan (4.4%) [40-42]. These findings suggest that this random sample of migrant women are at elevated risk for experiencing IPV compared to the general population of women in Central Asia. The high rates of injurious IPV (20%) found in this sample further suggest that the IPV experienced by these women is often severe.

This study found multiple significant associations between different mobility patterns and IPV victimization. Increased mobility could arguably be both a cause and effect of IPV victimization among migrant women. The significantly higher rates of lifetime IPV victimization found among divorced/separated women and non-Kazakh women suggest that the experience of IPV victimization and

relationship conflict may have prompted external migrant women to leave their countries as other studies have suggested [43]. These findings highlight the importance of considering the effect of different mobility patterns when examining the relationship between IPV victimization and HIV/STI risks.

	Having more than one sexual partner in past 90 days		Unprotected sex with primary partner in past 90 days		Unprotected sex with non-primary partner in past 90 days	
	Unadjusted OR (95% CI)	Adjusted ^A OR (95% CI)	Unadjusted OR (95% CI)	Adjusted ^A OR (95% CI)	Unadjusted OR (95% CI)	Adjusted ^A OR (95% CI)
IPV	4.31*** (2.15, 8.65)	2.52* (1.02, 6.27)	2.71† (0.90, 8.15)	2.46 (0.68, 8.87)	7.28*** (2.97, 17.80)	6.13** (1.69, 22.11)
	Anal sex in past 90 days with any partner		Performed oral sex in past 90 days with any partner		Has ever been diagnosed with an STI (self-report)	
	Unadjusted OR (95% CI)	Adjusted ^A OR (95% CI)	Unadjusted OR (95% CI)	Adjusted ^A OR (95% CI)	Unadjusted OR (95% CI)	Adjusted ^A OR (95% CI)
IPV	2.98** (1.41, 6.29)	2.404† (0.87, 6.66)	2.524* (1.17, 5.43)	3.31* (1.03, 10.62)	4.22*** (2.23, 8.00)	3.87** (1.74, 8.61)
	Tested positive for syphilis		Total number of unprotected sex acts with primary partner in past 90 days			
	Unadjusted OR (95% CI)	Adjusted ^A OR (95% CI)	Unadjusted IRR (95% CI)	Adjusted ^A IRR (95% CI)		
IPV	2.293 (0.79, 6.61)	2.77 (0.73, 10.49)	13.16** (5.8, 20.51)	8.56* (1.06, 16.07)		

***p<0.001, **p<0.01, *p<0.05, †<0.1
^A Adjusting for age, education, marital status, ethnicity, immigration status, drug use, problematic alcohol use and mobility patterns

Table 4: Multivariate Regression of HIV risk outcomes on Lifetime Experience of IPV (N=225).

The multivariate findings suggest that IPV victimization is associated with a range of HIV risks, including having sex with multiple partners in the past in the past 90 days, self-reported STIs, having unprotected sex with a non-primary partner, and the total number of unprotected sex acts with primary and non-primary partners. These findings suggest that IPV victimization may substantially increase the risk for HIV transmission from both primary and other partners. Although our study did not ask women if they had engaged in transactional sex, prior research on female migrant workers [44] indicates that female migrant vendors may do so because they lack other sources of capital. Such survival sex may increase their likelihood of experiencing IPV. The significant associations between IPV victimization and performing oral sex and having sex with multiple partners found in this study suggests the possibility of transactional sex exchanges that may be occurring which may be fueling syndemic risks for violence and HIV.

Limitations

The use of a cross-sectional design in this study makes it difficult to ascertain the directionality of the relationships between IPV victimization history and different HIV risks. Due to the sensitive and stigmatizing nature of disclosing both IPV and HIV risk behaviors, women may have underreported both behaviors, which would have

lowered the estimates of prevalence rates and reduced the likelihood of finding significant associations. Some HIV risk behavior outcome variables had wide confidence intervals due to low counts or a broad range in frequency counts (i.e., total number of unprotected sex acts in the past 90 days ranged from 0-150). Participants were not asked about the temporal relationship between their arrival in Almaty and experience of IPV, leaving uncertainty about whether IPV was a factor in or a result of their migration. The single market location in Almaty limits the generalizability of study findings to other locations in Kazakhstan and Central Asia. However, the random sampling design employed in this study and high participation rates strengthen the generalizability of study findings.

Conclusions and Implications

Although only one woman tested positive for HIV in this random sample of migrant women in Central Asia, the high rates of syphilis and self-reported STIs as well as the combination of HIV risks from primary and other partners found in this study suggest that if HIV enters the sexual networks of these women, it may spread quickly. The high rate of IPV victimization and multiple associations found between IPV victimization and a range of HIV risks underscore the need for programs and policies to address the syndemic of IPV victimization and HIV risks in the continuum of HIV prevention,

testing and treatment for this population of migrant women. Such programs and policies should consider the wider migration and mobility risk environment, which may fuel both IPV victimization and HIV risk. More rigorous research with longitudinal designs, larger samples and biological measures of more STIs is needed to more fully understand how pre-migration, mobility, and post-migration risk environments shape exposure to IPV and HIV transmission risks. The use of mixed methods to explore qualitatively how the processes of migration and mobility influence and are influenced by women's experiences of violence by primary, non-primary and paying partners may also help elucidate the risk environment in which IPV victimization and HIV risks co-occur. Such research may inform the design of effective programs and policies that may stem the spread of HIV and other STIs and reduce the likelihood of IPV victimization among this key affected population of migrant women in Central Asia.

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