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The Impact of Violence, Perceived Stigma, and Other Work-Related Stressors on Depressive Symptoms Among Women Engaged in Sex Work

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Abstract While the physical health risks of sex work have been well documented, fewer studies have explored mental health risks associated with sex work. This study examined rates of depressive symptoms and associated risk factors among women engaged in sex work in Mongolia ($n = 222$), a country experiencing significant economic and social development and where mental health infrastructure is in its infancy. A linear regression analysis indicated that significant risk factors for depressive symptoms included paying partner sexual violence, perceived occupational stigma, less social support, and higher harmful alcohol use. As one of the first studies to examine depression among sex workers, this study holds important social welfare implications for this marginalized population in Mongolia and other low-resource settings globally.

Keywords Global mental health · Central Asia · Sex work · Alcohol · Gender-based violence

Introduction

An estimated 40 to 42 million individuals engage in sex work globally and approximately 80% are female (Goldman 2013). Yet, little is known about the mental health of women in sex work, or how unique risk factors associated with sex work may contribute to increased risk of mental disorders. Women who engage in sex work face a complex web of health risks, including sexual risk, substance use and addiction, illegality, and stigma (Baral et al. 2012; Li et al. 2010; Rossler et al. 2010; Shahmanesh 2009; Witte et al. 2010). Women in sex work are at high risk for HIV and other STIs (Beyrer et al. 2015) and for experiencing gender-based violence (Deering et al. 2014), both related to their working status as well as their status as individuals in families and relationships. The few studies which exist on the mental health of those in sex work indicate high prevalence of depression and suicide associated with unique aspects of their employment, such as number of paying partners, violence by paying partners, condom use and risk taking with clients, worries about making enough money, and longer duration of sex work (Hong et al. 2007a; Le et al. 2010; Wang et al. 2007; Sagtani et al. 2013; Eller and Mahat 2003; Nemoto et al. 2011; Pollock et al. 2009; Alegría et al. 1994; Yuen et al. 2016).

Depression is a leading cause of disability among women globally (Ferrari et al. 2013), and burgeoning evidence suggests that women who engage in sex work are at increased risk for both depression and suicide (Shahmanesh 2009; Nemoto et al. 2011; Jung 2013; Ghose et al. 2015). Depression is associated with impaired daily and social functioning, work productivity, parenting, and child care (Dennis and McQueen 2009; Lovejoy et al. 2000; Hirschfeld et al. 2000; Lagerveld et al. 2010; Ferrari et al. 2013) and is co-morbid with a host of other health conditions (Katon et al. 2007). Depression also reduces the effectiveness of health programs and interventions, such as antiretroviral medication adherence among persons living with HIV (Rabkin 2008).

A dearth of research exists on the depression of women in Mongolia or Central Asia, particularly among those engaged in sex work. Previous studies from Mongolia have examined post-partum depression (Pollock et al. 2009) and a culturally specific condition with similarities to depression called

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"yadargaa" (Kohrt et al. 2004). However, no studies exist on the mental health of women in sex work in Mongolia. Although the practice of prostitution is illegal in Mongolia, a lack of economic opportunities has led to certain sectors of the population to engage in sex work as a primary source of income (World Bank 2013; Tsai et al. 2011). Mongolia's rapid transition to a capitalist economy in the 1990s and the subsequent global economic crises in 2008 resulted in a lack of employment opportunities that disproportionately affected women. Despite being highly educated, the majority of women engaging in sex work do so as a result of financial difficulties or family financial crises, unable to find other kinds of employment (Tsai et al. 2011).

Similar to other regions, sex work in Mongolia is highly stigmatized (Carlson et al. 2014). The minority stress model posits that members of a socially marginalized, minority group are at increased risk for poor mental health as a result of several interconnected stress processes (Meyer 2003). Mongolian women who engage in sex work experience unique proximal and distal stressors associated with their employment, including work-related violence, alcohol use, sexual risk, perceived stigma, and reduced access to services (Witte et al. 2010), which may increase their risk of depression. These specific stressors resulting from sex work occur within larger environmental stresses (i.e., poverty, income, and marital status) but can also be ameliorated through social support.

Social welfare and mental health services in Mongolia for women in sex work and other vulnerable populations are in its infancy (MSWC 2015). The social workers that do exist more often work in schools, hospitals, or in some social welfare agencies, and few serve women in the highly stigmatized profession of sex work. As is the case in many other low- and middle-income countries, social work in Mongolia is a growing profession, but its purpose is still not widely recognized. Social workers are in a strong position to meet the mental health and social service needs of this and other vulnerable populations, but more research is needed in this context to inform social work training and interventions that are culturally appropriate, empowering, and do not further stigmatize (Sloan and Wahab 2000; Ghose 2012).

In this study, we examine rates of depressive symptoms and associated risk factors among women engaged in sex work in Mongolia. Using a sample collected for the baseline assessment of a sexual risk/HIV prevention intervention (Witte et al. 2011), this is one of the first studies to examine the rates of depressive symptoms and associated risk factors among women in sex work globally.

Methods

Data for this study came from a parent study examining the impact of an HIV and sexual risk reduction intervention conducted from 2007 to 2009 with women engaged in sex work who also reported harmful levels of alcohol use (Witte et al. 2011). In the parent study, women participating in sex work were randomized to either (a) four sessions of a relationship-based HIV/STI risk reduction intervention (n = 49), (b) the same HIV/STI risk reduction intervention plus two motivational interviewing sessions (n = 58), or (c) a four-session wellness promotion control condition (n = 59) (Witte et al. 2011). Women were eligible for the study if they were (1) at least 18 years of age; (2) reported having engaged in vaginal or anal sexual intercourse in the 90 days prior to screening in exchange for money, alcohol, or other goods; (3) reported having engaged in unprotected vaginal or anal sexual intercourse in the 90 days prior to screening with a paying sexual partner; (4) were enrolled in a prevention program at a local HIV and AIDS non-governmental organization (NGO); and (5) met criteria for harmful alcohol use in the past year [score of eight or above on the Alcohol Use Disorders Identification Test (AUDIT)] (Saunders et al. 1993).

Participants would have been excluded if assessed to have a severe cognitive or psychiatric impairment that would interfere with the ability to provide informed consent or complete study instruments. No women were excluded. Surveys were conducted through a computer-based, interviewer-administered baseline assessment. Assessments were conducted in a private space in the study office at a local NGO with 222 participants. Study protocols were approved by Institutional Review Boards at Columbia University and the National University of Mongolia.

Measures

Measures were translated into Mongolian from English and then back translated for accuracy. The baseline assessment was pilot tested and determined to have adequate face validity. Trained Mongolian, female interviewers administered the tool, which included sociodemographic characteristics, depression symptoms, and risk factors for depression. All participants were asked comprehensive demographic questions including age, education, employment status, marital status, number of dependents, income, and having a trust partner (may include a spouse, boyfriend, or lover).

Brief Symptom Inventory

Depression symptoms were measured using the six-item depression subscale of the Brief Symptom Inventory (BSI) (Derogatis and Melisaratos 1983). Each item ("feeling blue," "lonely," "hopeless," "worthless," "having no interest in things," and "having thoughts of ending my life") was measured on a 5-point Likert scale from 0 (not at all) to 4 (extremely) over the past week. The scale has been tested for reliability (Derogatis and Melisaratos 1983), validity, and efficacy (Zabora et al. 1990) and has been used in depression

prevalence studies in East Asia (Wong et al. 2008). Raw (mean) scores for depression were calculated by adding the number for each item and then dividing by the total number of items endorsed. We found strong internal consistency ($\alpha = .837$) for the depression subscale.

Measured Risk Factors

Risk factors for depressive symptoms included years engaged in sex work, HIV/STI risk factors, level of harmful alcohol use, and violence from a paying partner. Two questions assessed HIV/STI risk factors: number of vaginal sex acts with a paying partner in the last 90 days and proportion of unprotected vaginal sex acts with a paying partner. Using an adaptation of the timeline follow-back (Sobell 1992), participants provided self-reported data on the proportion and number of times they engaged in unprotected vaginal sex with paying partners in the past 90 days. The proportion of unprotected sex was calculated as the total number of sex acts minus the number of sex acts reported where a condom was used and then divided by the total number of sex acts. Harmful alcohol use was assessed using the Alcohol Use Disorders Identification Test (AUDIT). The AUDIT is a ten-item scale that ranks a respondent's self-reported alcohol use from 0 to 40, with 40 being the most harmful possible score (Saunders et al. 1993). The time frame for the AUDIT was "in the past year." Violence from a paying partner was measured using the using the Revised Conflict Tactics Scale (CTS2), which measures the extent to which individuals have ever experienced sexual and physical acts or threats (Straus 1996). The measures for any physical and any sexual violence were assessed as two separate dichotomized variables. Social support was assessed using the Multidimensional Scale of Perceived Social Support (Zimet 1988), with values ranging from 0 (least social support) to 72 (highest social support). To measure perceived occupational stigma, participants were asked if they strongly disagree, disagree, agree, or strongly agree with six questions: "If people knew you were a sex worker, other people would: 1) avoid you? 2) think you were unclean? 3) think badly of you? 4) not want to be friends with you? 5) be disgusted by you? 6) be uncomfortable around you?" A stigma scale was then created for each participant ranging from 0 to 24, with higher scores indicating more perceived stigma.

Data Analysis

Prevalence rates for depression were calculated based on the T-score of the BSI raw scores. According to the T-score cutoff of 63 (positive Dx = $T \geq 63$) (Kohrt et al. 2004), 60.4% of the women from our sample were at high risk of depression. Binary analyses, including Chi-square and independent sample t test, were performed using SPSS 18 on all demographic and risk factors comparing women at risk for depression with those not at risk for depression. A linear regression was then performed with Mplus 7.2 (Muthén & Muthén, 1998-2012) to test the association between sociodemographic and risk factors with depressive symptoms. Maximum likelihood with robust standard error (MLR) estimator was used to perform the analysis. The dependent and independent variables showed some missing data (social support and stigma each had 1 missing; harmful alcohol use had 3 missing; BSI, physical violence, and sexual violence each had 6 missing; and each sexual risk variable had 40 missing). We treated them as missing not at random (MNAR), and the multiple imputation technique (Mplus 7.2) was used to address missing data. All the variables with missing data were imputed, whereas the variables with non-missing data were included as auxiliary variables. The output of the linear regression was based on the replication of the analysis on the imputed datasets. The fit of the model was evaluated with the comparative fit index (CFI) and Tucker-Lewis index (TLI), which should be greater than .95, and with the root mean square error approximation (RMSEA) that should be lower than .05 (Zabora et al. 1990; Wong et al. 2008; Hu and Bentler 1999).

Results

We report sociodemographic and risk characteristics in Table 1. Results from binary analysis determined that women at high risk for depression differed significantly from women not at high risk for depression on social support ($t = 5.93$, $p < .001$), unprotected sex acts in the last 3 months ($t = -2.60$, $p = .01$), lifetime sexual violence from a paying partner ($\chi^2 = 15.65$, $p < .000$), level of harmful alcohol use ($t = -5.20$, $p < .000$), and perceived stigma ($t = -3.07$, $p = .002$). As reflected in Table 2, results of the linear regression analysis indicate that several variables significantly predicted depression symptoms. Social support was negatively associated with depressive symptoms ($\beta = -27$, $p < .000$). Stigma related to exchanging sex for money significantly predicted ($\beta = .12$, $p = .05$) depressive symptoms. Women who reported having experienced sexual violence from a paying partner were more likely to have depressive symptoms ($\beta = 0.26$, $p < .000$). Higher levels of harmful alcohol use were a significant factor of depressive symptoms ($\beta = .27$, $p < .000$). Age, having a trust partner, number of dependents, having a secondary degree or higher, years exchanging sex for money, number of sex acts, proportion of unprotected sex acts, or history of physical violence from a paying partner were not significantly associated with depressive symptoms.

Table 1 Sociodemographic and risk characteristics by 'high risk' and 'not high risk' for depression

	Mean (SD) or %			
	Not high risk for depression	High risk for depression	Chi-square or *t* test	*p* value
Sociodemographic characteristics				
Age	35.80 (9.57)	34.0 (8.21)	1.36	.18
Has trust partner	45.1%	42.7%	0.09	.76
Number of dependents	2.65 (2.13)	2.94 (2.27)	−0.81	.42
Secondary degree or higher	90.2%	87.8%	0.22	.64
Social support	48.27 (14.23)	33.82 (17.99)	5.93	<.000
Risk factors				
Years exchanged sex for money	5.11 (4.7)	5.91 (4.59)	−1.05	.30
Number sex acts (last 3 months)	61.69 (84.60)	88.59 (98.57)	−1.76	.08
Unprotected sex acts (proportion in last 3 months)	.19 (.27)	.32 (.31)	−2.60	.01
Lifetime paying partner sexual violence from	27.5%	59.1%	15.65	<.000
Lifetime paying partner physical violence	76.5%	85.4%	2.21	.14
Harmful alcohol use	26.98 (6.98)	32.29 (6.16)	−5.20	<.000
Perceived occupational stigma	18.22 (2.89)	19.63 (2.87)	−3.065	.002

Discussion

This study contributes to the limited but growing body of literature on depression among highly stigmatized groups of women in developing and economically transitioning countries. In settings like Mongolia, where mental health systems are still in their infancy, social workers are well- positioned to address the mental health needs of this population. Over half (60.4%) of participants from our sample were at high risk for depression and, in line with a minority stress model, several risk factors associated with sex work significantly predicted women's risk for depressive symptoms, including reported lifetime prevalence of sexual violence from a paying partner, perceived occupational stigma, less social support, and higher levels of harmful alcohol use. However, the HIV/STI sexual risk factors included in the model did not significantly predict depressive symptoms, nor did a history of physical violence from paying partners or years involved in sex work. Our study found higher rates of depressive symptoms for women in sex work compared to studies from other populations of women in Mongolia. For instance, a study of 1044 women between 5 and 9 weeks after childbirth in Ulaanbaatar reported a depression prevalence of 9.1% (Pollock et al. 2009), over six times less than women in sex work from our study.

Table 2 Results from linear regression on women's depressive symptoms ($N = 222$)

Variables	Estimate[a] (S.E)	Two-tailed *p* value
Sociodemographic characteristics		
Age	−0.09 (0.07)	.20
Has trust partner	0.05 (0.06)	.37
Number of dependents	−0.05 (0.07)	.42
Secondary degree or higher	0.02 (0.07)	.82
Social support	−0.27 (0.07)	<.001
Risk factors		
Years exchanged sex for money	0.11 (0.07)	.10
Number of sex acts in last 3 months	−0.01 (0.07)	0.93
Unprotected sex acts (proportion in last 3 months)	0.03 (0.08)	.75
Lifetime paying partner sexual violence	.26 (0.06)	<.001
Lifetime paying partner physical violence	0.01 (0.06)	.88
Harmful alcohol use	0.27 (0.06)	<.001
Perceived occupational stigma	0.12 (0.06)	0.05

[a] Standardized estimate (β)

However, the elevated percentage of women at risk for depression from the current study is consistent with other samples of women in sex work conducted elsewhere in Asia; 53.9% in Hong Kong (Lau et al. 2010), 62.0% in China (Hong et al. 2007a), 82.4% in Nepal (Sagtani et al. 2013), and 86% in India (Suresh et al. 2009) had depression or depressive symptoms. A recently published systematic review on the psychological health of female sex workers globally reported a pooled prevalence of probable depression to be 62.4% (Yuen et al. 2016), nearly equivalent with the findings of this study. None of these studies (in Mongolia or elsewhere), however, utilized the BSI subscale on depressive symptoms, making direct comparisons difficult.

Depressive symptoms were significantly associated with a history of sexual violence from a paying partner. These findings support a robust body of evidence that a history of sexual violence is associated with an increased risk with multiple psychiatric disorders, including major depressive disorder (Chen et al. 2010). However, this is one of the first studies to find evidence supporting the association between sexual violence from a paying partner and depressive symptoms in the context of sex work (Shahmanesh 2009; Wang et al. 2007; Rossler et al. 2010). Physical violence from a paying partner did not significantly predict women's risk for depressive symptoms. The discrepancy in significance between physical and sexual violence and depressive symptoms perhaps suggests that an inability to have control over one's sexual encounters with clients—the primary means of income for these women—had a unique detrimental effect on participant's mental health. Women engaged in sex work are particularly vulnerable to sexual violence in settings like Mongolia where sex work is illegal and few protections or supports or services exist for sex workers. Interventions with women in sex working in Mongolia have demonstrated efficacy in reducing exposure to paying partner violence (Carlson et al. 2012; Tsai et al. 2016); however, more research is needed to examine the impact of violence prevention interventions on depression.

Perceived stigma associated with being a sex worker also contributed to women's risk for depressive symptoms, consistent with other studies among persons engaged in sex work elsewhere (Jung 2013; Nemoto et al. 2011). Exchanging sex for money in the context of Mongolia is highly stigmatized with social norms that view sex work as deviant behavior from both gendered and nationalistic expectations (Carlson et al. 2014). Findings from this study suggest that women in sex work may internalize this stigma in the form of depression. Alternatively, women with increased social support from friends, family, and intimate partners reported fewer depressive symptoms. This correlation is consistent with other data across populations of sex workers, where social support has been known to be a strong protective factor for depression and other poor mental health indicators (Nemoto et al. 2011; Shahmanesh 2009). In a context of stigma and isolation, where some women may not even tell their families that they engage in sex work (Witte et al. 2010), the social support of others likely becomes a crucial protective factor from depression. To avoid further stigmatization, mental health interventions with women in sex work should avoid pitfalls of other social work interventions with sex workers that either require them to leave sex work or to involuntarily disclose their employment status (Sloan and Wahab 2000).

This study contributes to growing interest, but relatively few number of research papers, on the relationship between mental health and HIV risk behaviors among women in sex work. Contrary to previous evidence on sexual risk taking among women in sex work (Yuen et al. 2016), we found no statistically significant association with depressive symptoms. However, women in the high-risk group for depression reported more unprotected sex acts (32 vs 19%) and more overall number of sex acts (89 vs 61) with a paying partner in the last 3 months, suggesting important clinical significance for sexual risk. Results from the HIV/STI risk reduction intervention with this sample of women indicate that participants were able to reduce their sexual risk despite the high prevalence of depressive symptoms. However, the precise moderating influence of depressive symptoms on the intervention effect size has yet to be tested.

Finally, level of harmful alcohol use was significantly correlated with depression. One of the study's eligibility criteria, all women in the sample reported harmful alcohol use. However, despite elevated rates of alcohol use among all of the women, findings from the regression model indicate that variation in high levels of harmful alcohol use predicted rates of depressive symptoms. This trend is similar to samples from Asia and North America, where alcohol use among female sex workers was significantly correlated with mental health problems and suicidal ideation (Li et al. 2010; Hong et al. 2007b; Urada et al. 2013). Alcohol abuse and major depressive disorder have been shown to have a high co-morbidity (Grant and Harford 1995). Given the cross-sectional nature of this study, we cannot determine the causal link between harmful alcohol use and depressive symptoms among our sample of women. However, growing evidence suggests that increasing involvement with alcohol increases the risk of depression (as opposed to the reverse causal mechanism in which persons with depression drink alcohol to self-medicate) (Boden and Fergusson 2011). This link may be biological and due to social and economic consequences of alcohol use. In Mongolia, it is not culturally acceptable for women to drink in excess or become alcohol dependent. Yet, women's alcohol use is exacerbated by their engagement in sex work, as they report drinking before or during sex work. Thus, the stigma of alcohol use and the subsequent problems resulting by harmful alcohol use may contribute to women's depressive symptoms.

Limitations

Results should be considered in the context of study limitations. First, data are cross sectional. As such, no conclusions can be drawn as to the causal nature of the relationships identified in the data. Second, the sample was limited to women in Ulaanbaatar. Experiences and behaviors of women in Ulaanbaatar may differ from those outside the capital city. In addition, the BSI subscale assesses only depressive symptoms, and it is not intended to diagnose depression, and the findings may differ from psychiatric diagnoses. This study was also limited in its lack of assessment of additional types of psychopathology, such as anxiety or functioning.

Implications for Social Welfare

Findings from this study support the new, but growing body of research on the prevalence and risk for depression of women engaged in sex work. Given the significant number of women in sex work globally and the associated burden of depression, these findings highlight the critical need for increased mental health research and services for women in this employment. Findings also support the need for mental health interventions with this population to consider screening for substance abuse or a history of sexual abuse and integrating trauma-focused or substance abuse treatment. Furthermore, structural interventions that address the stigma of sex work, focus on empowerment and bolster social support, and reduce sexual violence may also reduce or prevent depressive symptoms among women in sex work. Like many low- and middle-income countries, social workers in Mongolia are well-positioned to respond but are few and not available in the settings women in sex work are most likely to access. In Mongolia and globally, the advancement of social work from an empowerment, harm reduction framework that engages women in sex work in the design and delivery of services and avoids further stigmatization has the best potential to promote mental health and social welfare.

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Compliance with Ethical Standards

Conflicts of Interest The authors declare that they have no conflict of interests.

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