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Challenges facing HIV-positive persons who use drugs and their families in Vietnam

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It is hypothesized that persons who use drugs (PWUD) in Vietnam who are also HIV-positive may face additional challenges in psychosocial outcomes, and these challenges may extend to their family members. In this study, we examined depressive symptoms, stigma, social support, and caregiver burden of HIV-positive PWUD and their family members, compared to the outcomes of HIV-negative PWUD and their family members. Baseline, 3-month, and 6-month assessment data were gathered from 83 PWUD and 83 family members recruited from four communes in Phú Thọ Province, Vietnam. For PWUD, although we observed a general decline in overall stigma over time for both groups, HIV-positive PWUD consistently reported significantly higher overall stigma for all three periods. Depressive symptoms among family members in both groups declined over time; however, family members of HIV-positive PWUD reported higher depressive symptoms across all three periods. In addition, family members of HIV-positive PWUD reported lower levels of tangible support across all three periods. Caregiver burden among family members of HIV-positive PWUD increased significantly over time, whereas the reported burden among family members of HIV-negative PWUD remained relatively unchanged. The findings highlight the need for future interventions for PWUD and family members, with targeted and culturally specific strategies to focus on the importance of addressing additional stigma experienced by PWUD who are HIV-positive. Such challenges may have direct negative impact on their family members' depressive symptoms, tangible support, and caregiver burden.

Keywords: persons who use drugs; family members; HIV-positive drug users; Vietnam

Introduction

The HIV epidemic in Vietnam has been concentrated primarily in persons who use drugs (PWUD) who account for 65% of reported HIV infections, at least 90% of whom are men (FHI, 2010; Hammett et al., 2012; VAAC, 2009). The experience of PWUD in Vietnam reflects the battery of factors of stereotyping and discrimination that may lead to stigmatization (Link & Phelan, 2001). With “preexisting” stigma, PWUD are likely to experience a higher degree of HIV stigma (Mahajan et al., 2009). Given these convergence of negative factors, it is hypothesized that HIV-positive PWUD may face additional challenges with stigma and discrimination (Kermode et al., 2008; Ogden & Nyblade, 2005).

In Vietnam, as in many Asian cultures, the family is considered a critical extension of one's self (Salter et al., 2010). Given that the family plays an important role supporting PWUD around treatment adherence (Li et al., 2013), the impact of HIV on PWUD may extend to their family members. Although past studies have focused on stigma and discrimination (Gaudine, Gien, Thuan, & Dung, 2010; Hong, Anh, & Ogden, 2004; Li et al., 2013; Nyblade et al., 2008; Pharris et al., 2011), few data are available on the mental and social impact of HIV on PWUD and their family members in Vietnam. This study aimed to

compare the outcomes of HIV-positive PWUD with those of HIV-negative PWUD and their family members.

Methods

Study design and participants

This study uses data from an intervention pilot conducted in Vietnam, described in detail by Li and colleagues (2013), conducted between August 2011 and February 2012 at Phú Thọ Province in northern Vietnam. The four selected communes in Phú Thọ were matched into two pairs based on geographic area and number of PWUD. After the baseline assessment, the two communes in each pair were randomized to either an intervention or a standard care condition. This study was approved by the Institutional Review Boards of the University of California, Los Angeles, and the National Institute of Hygiene and Epidemiology, Vietnam.

In Vietnam, service providers in the commune health center (CHC) provide curative and preventive health services to PWUD in the community (World Health Organization, 2010). The CHC providers introduced the project through verbal explanation and a printed flyer to PWUD, who were then referred to a study recruiter, who screened PWUD individually for

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eligibility. The inclusion criteria were as follows: (1) age 18 or above, (2) a history of drug use, (3) residence in the participating commune, and (4) willingness to invite a family member to participate in the study. Upon enrolling PWUD and with their consent, family members were recruited. The inclusion criteria for family member participants were as follows: (1) age 18 or over, (2) immediate or extended family member and living with the PWUD, and (3) previous knowledge of the drug use status of the PWUD. Written informed consent was obtained from PWUD and family members. All participants were assessed at baseline, 3 months, and 6 months.

Measures

Depressive symptoms were measured by using a short version of the Zung Self-Rating Depression Scale (Zung, 1965). This 9-item instrument was adapted from the original 20-item questionnaire and was successfully used in China (Li, Liang, Ding, & Ji, 2011). A higher overall score indicated a higher depressive symptoms (Cronbach's $\alpha = 0.84$ for PWUD and 0.75 for family members).

Tangible support was assessed based on the 4-item subscale in the Medical Outcomes Study Social Support Scale (Sherbourne & Stewart, 1991), a higher score indicating higher tangible social support (Cronbach's $\alpha = 0.94$ for PWUD and 0.94 for family members).

Overall stigma perceived by PWUD was assessed using a 17-item subscale adapted from Herek and Capitanio (1993). The subscale has been validated in an Asian population in previous studies (Li, Lee, Thammawijaya, Jiraphongsa, & Rotheram-Borus, 2009), a higher score implying a higher degree of overall stigma (Cronbach's $\alpha = 0.80$).

Drug use by PWUD was determined using the Addiction Severity Index, a widely used instrument to quantify addictive behavior (McLellan et al., 1992). PWUD reported their frequency and severity of using illicit substances in the previous 30 days. A drug composite score was constructed, with a higher score indicating more severe drug-using problems (McGahan, Griffith, Parente, & McLellan, 1986).

Caregiver burden perceived by family members was assessed using the Perceived Caregiver Burden Scale (Stommel, Given, & Given, 1990), which has been used in our previous studies (Lee, Li, Jiraphongsa, & Rotheram-Borus, 2010). This 17-item scale assessed family members' perception of having a drug-using relative and its impact on health, finances, and feelings of entrapment. A higher score reflected a higher level of burden (Cronbach's $\alpha = 0.82$).

We also collected background information, including gender, age, and education, duration of drug use, and HIV status.

Data analysis

Baseline differences by HIV status of PWUD were analyzed using *t*-tests. Plots of means over time were generated to graphically examine the outcomes over time. We estimated mixed-effect regression models to fit outcomes with the HIV status of PWUD as the main effect, visit (baseline, 3-month, or 6-month follow-up), and HIV status-by-visit interaction. The models also included commune-level random effects to account for dependence within communes and a first-order autoregressive covariance structure to account for repeated observations within each participant. We present estimated difference in outcome measures at baseline, 3-month, and 6-month follow-up between HIV-negative and HIV-positive PWUD through model contrasts. The results from *F*-tests for the main effects (group and visit effects) and the interaction term were reported. Statistical analyses were conducted using SAS for Windows (Version 9.2).

Results

Table 1 describes participants' baseline characteristics. Of 83 PWUD in this study, 16 (19.3%) were HIV-positive. Age of PWUD ranged from 18 to 49 years ($M = 33.7$; standard deviation [SD] = 6.82). Family members' age ranged from 19 to 76 years ($M = 43.6$; SD = 16.0). All PWUD in our study were men. The majority of the family members in this study was female caregivers ($n = 75$; 90%). For PWUD, there were no significant differences by HIV status for the mean scores of overall stigma, depressive symptoms, tangible support, and drug use at baseline. Similarly, we found no significant differences for family members' depressive symptoms and caregiver burden.

Table 2 outlines the results from mixed-effects regression models on overall stigma, depressive symptoms, tangible support, and caregiver burden, with Figure 1 showing the plots of least squares means. For PWUD, we observed a general decline in overall stigma over time for both groups; however, HIV-positive PWUD consistently reported higher stigma for all three periods ($p = 0.0008$). Differences were statistically significant at baseline (Parameter estimate = 4.27; $p = 0.012$), at 3-month follow-up (Parameter estimate = 4.37; $p = 0.010$), and at 6-month follow-up (Parameter estimate = 4.51; $p = 0.008$). For family members, depressive symptoms declined significantly over time for both groups ($p < 0.0001$); however, family members of HIV-positive PWUD reported higher depressive

Table 1. Baseline sample characteristics of PWUD and family members by HIV status of PWUD ($n = 83$).

Parameter	HIV status of PWUD		<i>p</i> -value ^a
	Positive ($n = 16$)	Negative ($n = 67$)	
<i>Age (mean ± SD)</i>			
PWUD	32.5 ± 4.35	33.9 ± 7.30	0.4519
FM	52.63 ± 16.06	41.38 ± 15.31	0.0107
<i>Male (%)</i>			
PWUD	16 (100)	66 (100)	–
FM	0 (0)	8 (11.9)	0.3436 ^b
<i>Years of education (mean ± SD)</i>			
PWUD	11.25 ± 2.79	10.63 ± 2.28	0.3505
FM	8.94 ± 4.07	10.28 ± 4.12	0.2427
PWUD's overall stigma (mean ± SD)	63.00 ± 3.88	59.34 ± 7.16	0.0525
<i>Depressive symptoms (mean ± SD)</i>			
PWUD	17.13 ± 4.06	17.54 ± 5.61	0.7827
FM	19.75 ± 5.76	18.09 ± 4.71	0.2287
<i>Tangible support (mean ± SD)</i>			
PWUD	15.56 ± 2.37	14.87 ± 3.81	0.4866
FM	13.63 ± 2.90	15.70 ± 3.73	0.0408
Drug use (mean ± SD)	0.11 ± 0.07	0.15 ± 0.07	0.1067
Family member's caregiver burden (mean ± SD)	50.88 ± 10.84	53.88 ± 7.95	0.2105

^aIndependent sample *t*-test; ^bFisher's exact test.
FM, family members.

Table 2. Results from mixed-effects regression models for PWUD and family members ($n = 83$)^a.

Parameter	Overall stigma (PWUD)		Depressive symptoms (family members)		Tangible support (family members)		Caregiver burden (family members)	
	Estimate	<i>P</i>	Estimate	<i>P</i>	Estimate	<i>P</i>	Estimate	<i>P</i>
<i>Main effect^b</i>								
PWUD's HIV-status		0.0008		0.0549		0.0086		0.9311
Visit		0.1203		<0.0001		<0.0001		0.1065
<i>Interaction^b</i>								
Visit × PWUD's HIV-status		0.9925		0.6730		0.1643		0.0387
<i>Comparisons^c</i>								
Baseline	4.2744	0.0120	1.3913	0.2211	−1.9089	0.0062	−3.0056	0.1984
3 months	4.3677	0.0103	2.3512	0.0395	−1.6709	0.0163	0.0401	0.9863
6 months	4.5066	0.0082	1.6945	0.16366	−0.4759	0.4901	2.5345	0.2777

^aOutcomes adjusted for participants' age, gender, and educational status.

^b*P*-value from *F*-test.

^cEstimated difference in outcome measures at baseline, 3-month, and 6-month follow-up between HIV-positive and HIV-negative PWUD (for PWUD and family members of PWUD) through model contrasts.

Note: The significances of the main effects were not of interest.

symptoms across all three time periods, the difference being statistically significant at 3-month follow-up (Parameter estimate = 2.35; $p = 0.040$). We observed a general increase in tangible support for both groups ($p < 0.0001$); however, family members of HIV-positive PWUD consistently reported lower levels of tangible social support, differences being statistically significant at baseline (Parameter estimate = −1.91; $p = 0.006$) and

at 3-month follow-up (Parameter estimate = −1.67; $p = 0.016$). Family members of HIV-negative PWUD reported relatively constant levels of caregiver burden. On the contrary, family members of HIV-positive PWUD reported an increase in burden over time, and this increase in caregiver burden was significant at 6-month follow-up, indicated by significant HIV status-by-visit interaction ($p = 0.0387$).

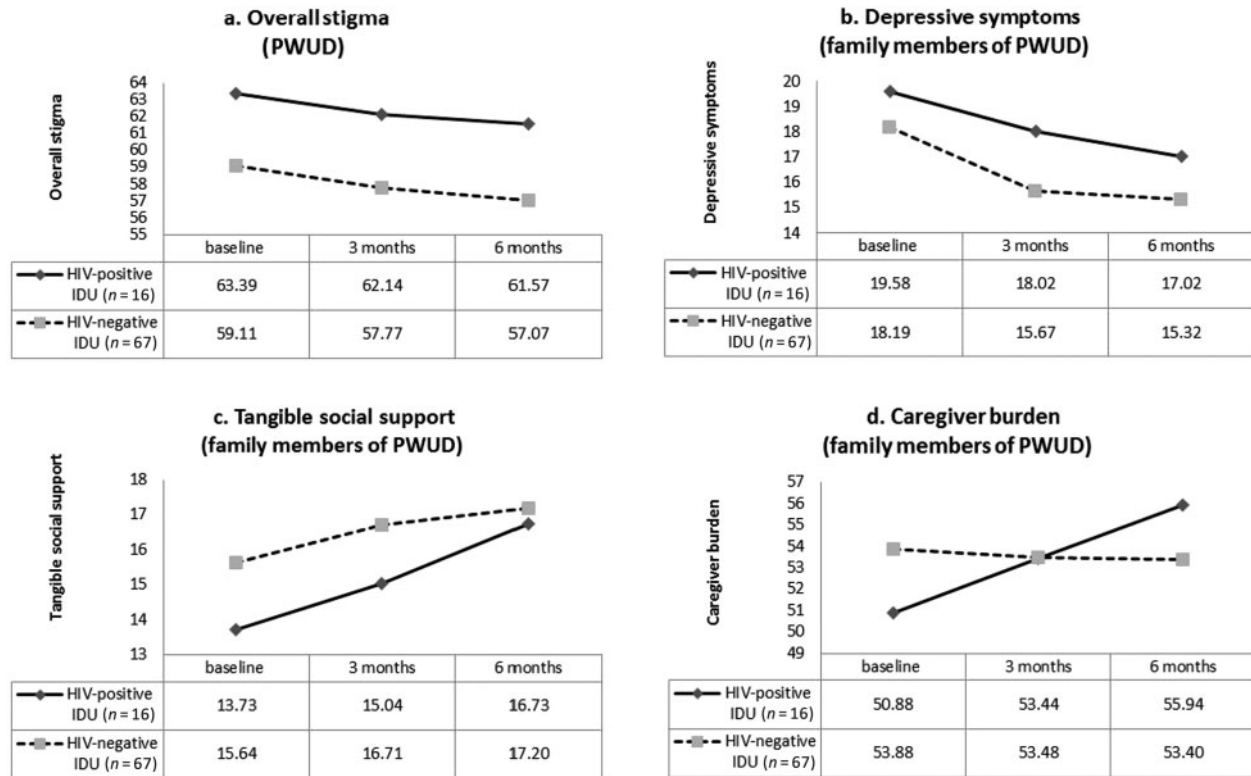


Figure 1. Overall stigma, depressive symptoms, tangible social support, and caregiver burden by HIV status of PWUD. Note: IDU, injecting drug users.

Discussion

Stigma, lack of tangible support, depressive symptoms, and caregiver burden are some of the challenges facing PWUD and family members. Such challenges may be amplified if PWUD are also HIV-positive. A study by Li and colleagues (2013) demonstrated that PWUD and family members face multiple challenges. This study makes additional contribution by examining potential differences among HIV-positive and HIV-negative PWUD and their family members. Our study findings confirm our hypothesis that the level of overall stigma experienced by HIV-positive PWUD is more substantial, which in turn may impact their family members' mental and social outcomes. Our findings confirm our hypothesis that HIV-positive PWUD may face layered stigma, where HIV stigma is "layered on top of pre-existing stigma associated with drug use" (Nyblade, 2006), and the additional challenges of layered stigma may extend to family members.

As in many studies, some limitations should be noted, including a relative small sample size, generalizability to other geographic areas, self-reported data, and other "layers" of stigma not captured in the study. Despite these limitations, our findings underscore the importance of addressing additional challenges for HIV-positive PWUD. Understanding the potential connection

between the experience of layered stigma by PWUD and its impact on their family members is critical for guiding future HIV prevention programs and policies that effectively address stigma. Our findings underscore the need for future interventions to consider the impact of HIV to design targeted, culturally specific, and tailored strategies to focus on the differences in challenges for PWUD and family members.

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