

AIDS impact special issue 2015: interpersonal factors associated with HIV partner disclosure among HIV-infected people in China

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ABSTRACT

HIV partner disclosure may facilitate social support, improve psychological well-being among HIV-infected individuals, and promote HIV testing and HIV prevention among their sexual partners. A growing literature emphasizes the critical role of interpersonal factors may play in decision-making and practice regarding HIV partner disclosure. However, there is a dearth of empirical studies that investigate how interpersonal factors may be associated with HIV partner disclosure. Using cross-sectional data collected from 791 HIV-infected people in Guangxi China, we examined the associations between these two interpersonal factors (quality of relationship with partner and family communication) and HIV partner disclosure. Descriptive analysis, *t*-test analysis, and gender stratified GLM analysis were conducted. We find that disclosing HIV status to partners was significantly related to better quality of relationship with partners and open and effective family communication. Gender and partner HIV status might moderate the associations between interpersonal factors and HIV partner disclosure. Our findings suggest the importance of considering relationship quality and enhancing open and comfortable family communication in HIV disclosure interventions. Gender difference and partner HIV status should be also considered in HIV disclosure intervention to address the diverse needs of HIV-infected people.

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Introduction

HIV partner disclosure (HIV-infected people disclose their serostatus to their partners) is an integral component in the public health efforts to reduce incident HIV infections and improve HIV treatment and care (Adebayo et al., 2014; Atuyambe et al., 2014; Hightow-Weidman et al., 2013; Remis, 2013). However, disclosing HIV serostatus to partners is still a difficult decision for HIV-infected people in the context of high level of HIV-related stigma and discrimination (Bott & Obermeyer, 2013; Katz et al., 2013).

Some theoretical models have depicted the decision-making of HIV disclosure as a process of individual assessing and calculating potential benefits and risks regarding disclosure (Chaudoir & Fisher, 2010; Qiao, Li, & Stanton, 2013). A growing number of researchers realize that HIV disclosure decision is embedded in specific social relations and highlight the interpersonal factors influencing HIV disclosure (Latkin et al., 2012; Rice, Comulada, Green, Arnold, & Rotheram-Borus, 2009; Sullivan, 2005; Zang, He, & Liu, 2015). The nature of relationship and quality of relationship with partner

may significantly affect the decision-making of disclosure. People in monogamous relationship are more likely to disclose HIV status to their partners (Conserve et al., 2014; Przybyla et al., 2013; Udigwe et al., 2013). HIV-infected people tell serostatus to partners when they were in an emotionally close and supportive relationship (Derlega, Winstead, Greene, Serovich, & Elwood, 2002), while may decide not to do so if they are in a superficial relationship (Visser, Neufeld, de Villiers, Makin, & Forsyth, 2008). Living with one steady sexual partner is also positively related to disclosure to partner (Loukid et al., 2014; Suzan-Monti et al., 2011).

Communication difficulties may be another interpersonal factor to impede HIV-infected people revealing their serostatus to their partners (Christiansen, Lalos, & Johansson, 2008). Communication difficulties may involve disclosers (e.g., “I don’t feel ready”), the targets of the disclosure (e.g., “I don’t know how to talk with this person about my HIV infection”), and relationship between the two (e.g., “The relationship between us makes it hard to disclose my status to him/her”) (Derlega

et al., 2002). Lack of necessary HIV-related knowledge and skills in communicating about sensitive topics (e.g., sexual behaviors, HIV transmission) can be also a barrier to plan an appropriate and smooth disclosure (Kadowa & Nuwaha, 2009; Walcott, Hatcher, Kwena, & Turan, 2013).

Although numerous empirical studies have explored the role of interpersonal factors in HIV partner disclosure, there are still several gaps in the literature. First, most of existing studies are conducted in North America or Africa with a focus on men who have sex with men (MSM) and HIV-infected pregnant women. We do not know much about how interpersonal factors are associated with HIV partner disclosure among heterosexual HIV couples in other cultural contexts. For example, in China the effects of HIV-related stigma on HIV disclosure may be compounded by the cultural view of the familial obligation (Ding, Li, & Ji, 2011). Traditional Chinese culture emphasizes obligation to family as a core value (Chin, 1996; Kim, Yang, Atkinson, Wolfe, & Hong, 2001). The stigma and discrimination toward PLWH often extend to their family. Thus the desire to protect family and the fear of being isolated from family add heavy psychological burden to HIV-infected people in their disclosure decision-making process (Qiao, Li, & Stanton, 2014). Second, findings on the relationship between communication difficulties and HIV partner disclosure were mostly based on qualitative data. The existing quantitative studies that explored the role of relationship in HIV partner disclosure often focused on the natures of relationship rather than quality of relationship. Some studies focused on the communication skills, but did not examine if the family communication affected the disclosure. Third, although many empirical studies suggested gender and partners' HIV status (i.e., HIV negative or HIV positive) may influence the disclosure practice, there is a dearth of empirical studies to elaborate how these two variables might confound the associations between the interpersonal factors and HIV partner disclosure.

Therefore, using cross-sectional data collected from 796 HIV-infected people in China, the current study aims to examine 1) how interpersonal factors (i.e., quality of relationship with partners and family communication) are associated with HIV partner disclosure; and (2) how gender and partner HIV status may affect the associations between interpersonal factors and HIV partner disclosure.

Method

Study site

The current study used baseline data from an HIV disclosure intervention project initiated in 2013 in Guangxi,

China. The primary aim of the intervention project was to assist parents living with HIV/AIDS to plan or make a developmentally appropriate disclosure of their HIV status to their seronegative children (aged 6–15 years). As one of the regions with the fastest growing HIV epidemic in China, Guangxi has reported a total of 95,922 HIV/AIDS cases by 30 September 2014, representing a 37.9% increase since June 2011 (69,548 HIV/AIDS cases) and placing Guangxi second among 31 Chinese provinces in terms of HIV seropositive cases (Guangxi, 2015). Heterosexual transmission has become the main HIV transmission mode in Guangxi since 2009 (Guangxi News Network, 2014; Wang et al., 2013).

Participants and sampling

In Guangxi, HIV clinical management and semi-annual follow-ups for HIV/AIDS patients in each urban district/rural township was conducted by a designated primary public hospital (specially its HIV clinic) under the direction of the city/county Center of Disease Control and Prevention (CDC). In collaboration with Guangxi CDC, we selected eight cities and eight rural counties with the largest cumulative number of reported HIV/AIDS cases in 2012. We further identified all the HIV clinics with at least 200 HIV/AIDS cases in these urban districts and rural townships. We randomly selected 42 of them as project sites. We then randomly selected and invited 20 eligible HIV-infected parents from each site to participate in the disclosure intervention. The refusal rate was about 5%.

Survey procedure

In total, 791 HIV-infected parents participated in the baseline survey assessing their demographics, mental health, family relationship, and HIV disclosure. They took the survey in a private room (e.g., doctor's office at HIV clinics or local CDC) where trained research staff (interviewer) administered the one-on-one questionnaire to participants. The interviewers were local CDC staff or health care workers in the HIV clinics who had experiences of working with people living with HIV/AIDS and had received intensive training on interview skills prior to the survey. The interviewers read each question in the questionnaire, and the participant gave an oral response to the interviewer. Clarifications were provided by the interviewers as needed. The survey averagely took about 45 minutes to complete. The project protocol including consenting process was approved by the Institutional Review Boards at Guangxi CDC in China and Wayne State University in the United States. All participants provided written informed consent.

Measurement

Background characteristics

Participants were asked about individual and family characteristics including gender, ethnicity, age, marital status, residence, education attainment, number of people in the family, number of children, and monthly household income. They also provided HIV-related information, including duration since their HIV diagnosis, whether or not they received antiretroviral therapy (ART), and HIV infection among current partners and other family members. For the purpose of data analysis in the current study, we dichotomized ethnicity into Han and non-Han, marital status into currently married and currently non-married.

HIV partner disclosure

Participants were asked “How did your partner know your HIV infection?” The potential responses included “I told him/her based on my plan”, “I told him/her by accident”, “I told him/her when I was asked about this issue”, “others told him/her with my consent”, “others told him/her without my consent”, “health care workers directly told him/her without my consent”, and “my partner does not know my HIV infection”. Participants who selected any of the first four responses were viewed as having disclosed their HIV infection to partners (disclosed group); otherwise, they were viewed as having not disclosed to partners (no-disclosed group).

Quality of relationship with partner

To assess the quality of relationship with partner, five items from an existing scale (Funk & Rogge, 2007) were used to ask the participants about the extents to which the descriptions truly reflected their relationship with their current partner (“My partner and I support each other”, “My partner and I take care of each other”, “My partner and I trust each other”, “There are a lot of cheats and lies between us”, “My partner and I get along well only on surface”). The response option ranged from 1 to 4 (1 = not true, 2 = a little bit true, 3 = somewhat true, 4 = completely true) and was recoded when necessary. A higher total score indicates a better quality of relationship. The Cronbach α was .81 for the current sample.

Family communication

The 10-item Family Communication Scale (Olson & Barnes, 2004) was employed to assess family communication. Participants were asked about their agreement with the statement in each item on a 5-point scale (1 = strongly disagree, 2 = disagree, 3 = unsure, 4 = agree, 5 = strongly agree). A higher sum score suggests a better

family communication. The Cronbach α was .94 for the current sample.

Data analysis

Descriptive analysis was employed to describe the background characteristics (i.e., demographic variables and HIV-related variables) and interpersonal factors (i.e., quality of relationship with partner and family communication). We then examined the difference between disclosed group and no-disclosed group in terms of background characteristics and interpersonal factors. Specifically, chi-square tests were used for categorical variables and *t*-tests for continuous variables. Then we employed general linear model (GLM) to further explore the associations between disclosure and interpersonal factors.

Considering gender may confound the relationship between disclosure and interpersonal factors, we conducted GLM analysis among male and female participants separately. In the GLM models, the dependent variables were interpersonal factors and the main between-subjects factor was disclosure group. Partner HIV status (categorical variable) was used as additional between-subjects factor in the GLM model. Pillai's Trace F statistics were presented in the table for multivariate tests and conventional F statistics (based on Type III Sum of Square) were presented for univariate tests. *Post-hoc* analysis was conducted to further examine the significant interaction terms. All statistical analyses were performed with SPSS 16.0 (SPSS Inc., Chicago, IL).

Result

Background characteristics

As presented in Table 1, 57% of the participants were men and nearly 70% were of Han ethnicity. The mean age of the participants was 38 years ($SD = 5.57$). The majority (78%) of them was currently married and nearly 83% lived in rural area. Around 20% of the participants reported that they did not work. The mean education attainment of the sample was seven years ($SD = 2.55$). The average duration since their HIV diagnosis was almost four years ($SD = 2.58$). About 97% of them received ART. In addition, nearly 50% of the participants reported HIV infection among their current partner, and over a half (51%) reported HIV infection among their other family members.

Of the current sample, 405 (51%) participants had disclosed their HIV infection to their partners (“disclosed group”), 386 (49%) participants had not done so themselves or by their wills (“no-disclosed group”).

Table 1. Demographic characteristics by disclosure group.

	No-disclosed group (n = 386)	Disclosed group (n = 405)	Total (n = 791)
Gender			
Male	197 (55.0%)	223 (58.8%)	420 (57.0%)
Ethnicity			
Han	245 (68.4%)	392 (70.7%)	513 (69.6%)
Age (SD)	37.8 (5.67)	37.8 (5.49)	37.8 (5.57)
Marriage			
Currently married	235 (60.9%)	378 (93.3%)	613 (77.5%)**
Education	6.74 (2.57)	7.00 (2.54)	6.87 (2.55)
Residence			
Rural	322 (83.4%)	332 (82.0%)	654 (82.7%)
Work status			
Don't work	82 (21.2%)	73 (18.0%)	155 (19.6%)
Household size	4.34 (2.53)	4.30 (1.68)	4.32 (2.14)
Years since HIV diagnosis	3.88 (2.51)	3.86 (2.66)	3.87 (2.58)
HIV infections in family			
Yes	194 (50.3%)	209 (51.6%)	403 (50.9%)
HIV infections among sexual partners			
Yes	144 (45.3%)	212 (52.9%)	356 (49.5%)*
Receiving ART			
Yes	177 (96.2%)	192 (97.0%)	369 (96.6%)

* $p < .05$.** $p < .01$.

Table 1 shows that most background characteristics were similar between disclosed group and no-disclosed group with several exceptions. Compared to no-disclosed group, a higher proportion of participants in disclosed group were currently married (93% vs. 61%, $p < .001$). In addition, a higher proportion of participants in disclosed group reported HIV infections among their current sexual partners (53% vs. 45%, $p < .001$).

Group differences of interpersonal factors

As shown in Table 2, participants differed in interpersonal factors by disclosure group. Disclosed group showed higher quality of relationship with their partners (3.29 vs. 3.11, $p = .001$) and better family communication (3.63 vs. 3.50, $p = .001$) than the no-disclosed group.

The results of GLM analysis among men (Table 3) confirmed the overall difference in interpersonal factors by disclosure group. The multivariate test suggested significant association between partner HIV disclosure and the interpersonal factors ($F = 3.737$, $p < .01$). Univariate tests suggested that HIV disclosure was significantly related to family communication ($F = 7.136$, $p < .01$).

However, the GLM model for women (Table 4) did not show overall significant association between partner HIV disclosure and the interpersonal factors ($F = 1.795$,

Table 2. Comparison of interpersonal factors by disclosure group.

	No-disclosed	Disclosed	Total	<i>t</i>	<i>p</i> -Value
Quality of relationship	3.109 (.715)	3.288 (.618)	3.208 (.669)	3.600	.001
Family communication	3.498 (.781)	3.626 (.627)	3.564 (.709)	2.548	.001

Table 3. Multivariate analysis results among HIV-infected men.

	Main effects		Interaction
	Disclosure group (D)	Partner HIV status (P)	D × P
Multivariate test	3.737**	1.402	2.320
Quality of relationship	3.517	<1	4.653*
Family communication	7.136**	2.804	1.177

* $p < .05$.** $p < .01$.**Table 4.** Multivariate analysis results among HIV-infected women.

	Main effects		Interaction
	Disclosure group (D)	Partner HIV status (P)	D × P
Multivariate test	1.795	7.924***	2.282
Quality of relationship	3.341	10.134**	4.454*
Family communication	<1	<1	2.006

* $p < .05$.** $p < .01$.*** $p < .001$.

$p = .168$). The multivariate test for partner HIV status suggested a significant association between partner HIV status and the interpersonal factors ($F = 7.924$, $p < .001$) and univariate test indicated that partner HIV status was significantly related to quality of relationship ($F = 10.134$, $p < .01$).

The GLM analysis for both men and women indicated a significant interaction term between disclosure group and partner HIV status in the univariate test for quality of relationship. *Post-hoc* analysis showed that among participants whose partners were HIV-infected, there was no significant difference by disclosure group in average scores of quality of relationship, while among participants with HIV-negative partners, disclosed group had a higher quality of relationship than no-disclosed group for both men (3.350 vs. 3.075, $p < .01$) and women (3.139 vs. 2.800, $p < .05$).

Discussion

Our findings suggest that interpersonal factors were significantly associated with HIV partner disclosure. Disclosing HIV status to partners was related to higher quality of relationship with partners and open and comfortable family communication. Gender and partner HIV status might significantly moderate the associations between interpersonal factors and HIV partner

disclosure. Family communication was associated with HIV disclosure to their partners among men. Quality of relationship with partner was significantly related to HIV partner disclosure for both men and women with HIV-negative partners.

Consistent with the existing literature, the current study confirms the critical role of relationship with partner during the HIV partner disclosure. A relationship with trust and affections may make the disclosure easier and contribute to positive reactions and consequences (Mkwanzazi, Rochat, & Blanda, 2015). Several studies conducted in China reported similar findings. For instance, based on data among 88 HIV-infected people, Ding and colleagues identified that trust and close relationship was a predictor of HIV disclosure to partners and family (Ding et al., 2011). A social network study among 147 HIV-infected people and their 922 network members suggested that quality of relationship (indicated by social support and frequently contacts) might affect the decision-making of HIV disclosure within social network (Zang et al., 2015). Xiao and the colleagues found that motivation to establish a close/supportive relationship might promote disclosure to spouse or other sexual partners (2015). The data in the current study suggested that quality of relationship might be significantly associated with HIV partner disclosure only among HIV-infected people having HIV-negative partners. These persons might suffer a heavy burden of self-blame and concerns about partner's reaction. They might be more likely to use perceived quality of relationship with their partners to predict the consequences of disclosure and finally make a decision to disclosure.

The existing literature has indicated that communication about HIV and safe sex between HIV-infected people and their partners may promote HIV disclosure to partners (Alemayehu, Aregay, Kalayu, & Yebyo, 2014). Our findings suggest that open and effective family communication may also facilitate HIV disclosure for men rather than women. This finding may be explained by potential gender inequality within family in China. Influenced by traditional Chinese culture, in China, especially rural China, men are usually viewed and acted as head of a family while women have fewer opportunities to openly express their true opinions or discuss with partners or other family members about their own feelings or issues (Chen et al., 2011; Jacka, 2006). The lack of positive family communication is so common among women that there was no significant difference between two disclosure groups.

The current study has several limitations. First, the sample may not be representative as the larger study (disclosure intervention project) only recruited HIV-infected people with at least one child between 6 to 15

years of age. Therefore most of the participants were married or in a stable relationship, and the disclosure to partner meant disclosure to their spouse or steady sexual partner. The responsibility of raising child together as a couple may influence the partner relationship and the decision-making of disclosure. Second, using cross-sectional data limits our ability to examine the causal effect of interpersonal factors on disclosure. For example, although the relationship with partner might affect the HIV-infected people's decision-making regarding disclosure, disclosure itself might influence the relationship between the HIV-infected people and their partner. Longitudinal study will be necessary to investigate the mechanism through which interpersonal factors may intertwine with disclosure process. Third, in the current study we assess the family communication which may not be very specific to partner communication. Fourth, gender-stratified GLM analysis might reduce the power of statistics analysis. However, our significant findings suggested robust results even with potentially reduced statistical power.

Despite these limitations, our findings have several implications in the development of interventions to promote disclosing HIV status to partners. First, health care providers or counselors who assist HIV-infected people to conduct partner HIV disclosure need to assess the relationship between the HIV-infected people and their partners and develop appropriate plan and strategy for disclosure in the context of the quality of their relationship. Second, enhancement of family and partner communication can be incorporated into disclosure intervention project as a facilitator for HIV partner disclosure. A positive and open communication style between partners will encourage HIV-infected people to disclose their serostatus to partner and facilitate the disclosure practice. Third, we need to pay attention to diverse needs of HIV-infected people during the disclosure process because of the gender difference and the partner HIV status. Women especially need to be empowered to develop an equal relationship with their partners and create positive family communication style to openly express and discuss their feelings. For HIV-infected people having HIV-negative partner, the strategy of promoting disclosure could be supplemented with psychological counseling to reduce internalized stigma and fears of negative reactions from partners.

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