

Using communication privacy management theory to examine HIV disclosure to sexual partners/spouses among PLHIV in Guangxi

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The current study employed Communication Privacy Management (CPM) theory to examine the factors associated with disclosure of HIV infection to sexual partners or spouses as well as gender differences in these associations among a sample of people living with HIV (PLHIV) in China. A total of 1254 PLHIV who had 5–16 years old children were invited to answer the questions related to disclosure of HIV infection to sexual partners/spouses. Prevalence of HIV disclosure was reported. Key variables related to CPM theory (such as motivations for disclosure and nondisclosure, HIV-related stigma, and relational factors) were compared between females and males. Logistic regression was employed to determine the factors of influencing whether or not the participants disclosed their HIV status to spouses/partners for the male, the female and the combined samples. Fear of rejection was a significant predictor of HIV nondisclosure for the male, the female and the combined samples. Concern about privacy was a significant factor in not disclosing to sexual partners/spouses only in the male sample. The endorsement of duty to inform/educate was the only motivation factor that was significantly related to HIV disclosure for the three samples. The motivation to establish a close/supportive relationship with intimate partners/spouses was found to be associated with HIV disclosure for the combined and male samples. The current study confirmed the utilities of CPM in studying HIV disclosure to sexual partners/spouse. The findings have theoretical and practical implications for HIV disclosure interventions among PLHIV in Guangxi.

Keywords: HIV disclosure; HIV-related stigma; CPM; sexual partner/spouses

In China, it is estimated that there were 780,000 people living with HIV/AIDS (PLHIV) as of 2011 (China Ministry of Health, 2012). From 2007 to 2011, the number of reported HIV/AIDS cases has increased from 48,161 to 92,940 and the number of newly diagnosed cases has increased from 10,742 to 39,183, respectively (China Ministry of Health, 2012). These numbers illustrate that it is critically important to find ways to not only tackle the spread of HIV but also assist PLHIV in coping with the disease in China. One prominent recommendation is that PLHIV needs to disclose to others (e.g., family members, sexual partners) about their diagnosis (Greene, 2003). “Not all people with HIV disclose their infection, but failure to disclose has potential to harm the self, others, and close relationships. Disclosure of HIV status is crucial for both the individual’s health and broader health prevention efforts” (Greene, 2003, p. 2).

Some studies have demonstrated that disclosure has positive influences, including helping PLHIV manage stress and depression (Osinde, Kakaire, & Kaye, 2012) and obtain social support (Zea, Reisen, Poppen, Bianchi, & Echeverry, 2005), facilitating negotiation

about condom use (Sullivan, 2005), reducing sexual partners’ risk of HIV infection (Simoni & Pantalone, 2005; Sullivan, 2005), improving access to additional resources (Maman et al., 2003), and promoting antiretroviral therapy (ART) adherence (Stirratt et al., 2006). It is therefore crucial to understand the factors associated with disclosure decision-making among PLHIV.

In China, most PLHIV did not disclose their diagnosis to others in fear of stigma and discrimination (Qiao, Li, Zhao, Zhao, & Stanton, 2012). And only limited studies have investigated the disclosure issues. More importantly, few of the existing efforts have utilized any theoretical framework to understand factors that will influence the decision that PLHIV make about disclosing their HIV status to others. Therefore, the current study aims to examine the factors associated with disclosure of HIV status to sexual partners or spouses among a sample of Chinese PLHIV by employing the communication privacy management (CPM) theory (Petronio, 2000, 2002).

Theoretical rationale

Petronio’s (2007) CPM theory is a “perspective that suggests a way to understand the tension between

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revealing and concealing private information” (p. 218). The theory includes five suppositions: privacy dialectics, privacy boundaries, private information, control/ownership, and privacy rules. The first supposition assumes that “neither privacy nor disclosure stands separate from each other” (Petronio, 2002, p. 18), rather, they are *dialectical tensions*. The second supposition proposes there are *boundaries* between making privacy known to other people and hiding it from others. Third, private information belongs to an individual, which creates a sense of *ownership*. When private information is disclosed, it becomes co-owned by the person who gets to know the information. Fourth, given the individual is the owner of his/her privacy, he/she has *power or control* over deciding whether or not to disclose. Finally, *rules* are constructed for making choices about disclosing or concealing information. The theory proposes that there is a management system that consists of three processes to regulate these rules; and one of the processes concerns the criteria (such as culture, gender, motivation, relations) for formulating privacy rules (Petronio, 2000, 2002). This means CPM can help identify a set of criteria that can be employed to investigate the reasons for disclosing or not disclosing HIV status to others (Greene, 2003).

Criteria for disclosure decision

First, HIV-related stigma, can be used as a cultural criterion for making disclosure decisions (Greene, 2003). “The stigma associated with HIV may result in people with the disease or partners of someone with HIV being ostracized, ridiculed, shunned, discriminated against, or even physically beaten due to negative attributions” (Greene, 2003, p. 38). Therefore, stigma could be a risk factor for PLHIV who disclose their HIV status (Greene, 2003). A large body of literature has shown that HIV-related stigma can adversely affect HIV disclosure because stigmatized PLHIV may choose to conceal their status to avoid unpleasant consequences of disclosure (Tsai et al., 2013). Stigmatized persons might also internalize the stigma beliefs held by the public and develop negative self-images or low self-esteem (Katz et al., 2013). And HIV-related stigma is negatively associated with prevention efforts, ART adherence, and quality of life (Holzemer et al., 2014; Patel et al., 2012; Rintamaki, Davis, Skripkauskas, Bennett, & Wolf, 2006).

Motivations that PLHIV have to disclose or conceal the serostatus can also be used as criteria. According to Derlega, Winstead, and Folk-Barron (2000), Derlega, Winstead, Greene, Serovich, and Elwood’s study (2002) and Greene (2003), PLHIV are motivated to disclose their HIV status when they

consider personal and interpersonal gains and gains for other people. For fulfilling personal gains, people choose to disclose their HIV status for catharsis (or ventilating feelings) and help-seeking. PLHIV are also motivated to consider positive outcomes of disclosure for other people. Therefore, they believe that they have a duty to inform others about their diagnosis or educate others about the facts of HIV infection. Further, PLHIV consider how their disclosure would affect interpersonal relationships with others. These motivations for interpersonal gains include testing others’ reactions to the HIV diagnosis to decide whether to continue to invest in the relationship, and establishing emotionally close and supportive relationships.

In addition, Greene (2003) suggested that PLHIV may be motivated to not to disclose due to problems of coordination and co-ownership with potential recipients of HIV disclosure. Problems include concerns about whether the recipient will keep their privacy confidential (or third-party leakage), shameful feelings (such as they are tainted and dirty), and fear of rejection from other people. Protecting the potential recipient might be another motivation to hide information about HIV serostatus because PLHIV worry about whether the recipient is able to deal with the knowledge of HIV status.

CPM suggests that besides culture and motivations, people also consider relations or contexts to formulate rules for disclosing privacy (Petronio, 2000, 2002). For example, the type of relationship (e.g., parents and children, partners and spouses, friends etc.) and the strength of relationship between PLHIV and the potential recipient affect disclosure decision (Greene, 2003). Marital or significant relationships are often considered as the most appropriate recipients of HIV status disclosure. In addition, perception of the relational quality also affects disclosure decision. PLHIV choose to disclose their status to closer or trusted recipients (Greene, 2003).

Gender might be another criterion that helps PLHIV judge whether they disclose their status (Greene, 2003). A review study conducted by Mayfield, Rice, Flannery, and Rotheram-Borus (2008) found there were significant gender differences in HIV status disclosure patterns. However, several other studies found no significant association between gender and HIV status disclosure (e.g., Dave, Stephenson, Mercey, Panahmand, & Jungmann, 2006; Deribe et al., 2010). Therefore, issues of gender differences in HIV status disclosure are still not clear and future studies are needed to address the relationship.

However, empirical studies on the influences of the aforementioned theoretical concepts on disclosure decision-making are very scant among PLHIV in

China. Thus, the current study specifically sought to assess the associations between HIV disclosure (or nondisclosure) and a set of CPM criteria (such as HIV-related stigma, motivations, relational strength and quality) among PLHIV who had 5–16 years old children in China. We also assessed whether there was a gender difference in these associations.

Methods

Study site

The current study was conducted from October 2012 to August 2013 in Guangxi Autonomous Region, which has the fastest growth of HIV epidemic in China (Guangxi CDC, 2011). As of June 2011, there were a total of 69,548 HIV/AIDS cases, which increased 30% compared to that of 2009 and ranked Guangxi second in terms of HIV seropositive cases among 31 provinces in China (Guangxi CDC, 2011).

Working with the Guangxi CDC, the research team selected 2 cities and 10 counties that had the largest cumulative number of reported HIV/AIDS cases out of all 17 cities and 75 rural counties in Guangxi. There were a total of 29,606 HIV/AIDS cases in these selected 12 sites, counting for 43% of all the reported cases in Guangxi.

Participants and sampling

Local CDC in each study site was instructed to randomly select about 10% of their reported cases. The individuals selected were at least 18 years old and able to complete a survey. Staff members in each local CDC and health care workers from community health centers reached out to selected participants by making phone calls and home visits. Approximately 90% of the selected PLHIV consented and participated in the survey ($n = 3002$). We finally obtained data from a total of 2987 participants after removing 15 uncompleted questionnaires. Because the original study focused primarily on parental disclosure (i.e., parents disclose their HIV status to children), only the participants who had 5–16 years old children ($n = 1254$) were invited to answer questions regarding HIV disclosure to children and other people including spouses and partners.

Survey procedure

Approximately 20% of the participants completed the questionnaire by themselves and the rest completed the questionnaire one-on-one with the interviewers. The survey was conducted in offices of local CDC or HIV clinics where the participants received medical care. Clarification or instruction was provided promptly

when necessary. All the interviewers were local CDC staff or health care workers from HIV clinics and received intensive training on research ethics and interview skills with PLHIV prior to data collection. The survey took about 75–100 minutes. Each participant received a gift at completion of the interview as a token of appreciation. The research protocol was approved by the Institutional Review Boards at both Wayne State University in the USA and Guangxi CDC in China.

Measures

Demographic variables included age, gender, place of residence, religion, monthly household income, employment, education, the household size, and type of housing.

Marital status. The response options for this variable included: never married, cohabiting, married, separated, divorced, and widowed. In logistic regressions, the options were categorized into (1) married/cohabiting and (2) currently not married (single or separated or divorced or widowed).

HIV status disclosure to partners/spouses. Participants were asked whether they disclosed their HIV diagnosis to their sexual partners/spouses.

HIV-related stigma was measured by fourteen statements derived from the HIV Stigma Scale (see Berger, Ferrans, & Lashley, 2001). Exploratory factor analysis was performed and two factors emerged. The first factor is categorized as “internalized stigma” and the second named as “perceived stigma”.

The motivations for disclosing was measured using a total of eight items consisting of three subscales: “Catharsis”, “Duty to inform/educate”, and “Establishing close/supportive relationship”. *The motivations for not disclosing* were measured by three subscales: “Concerns about privacy”, “Fear of rejection”, and “Protecting the other”. These items were derived from Derlega et al. (2002).

Relational quality was assessed by asking respondents how the following descriptions reflect the truth of their relationships with sexual partners/spouses: (1) good, (2) helping each other, (3) taking care of each other, (4) trusting each other, and (5) full of lies and deceptions.

Table 1 presents the number of items, sample items, response options and Cronbach’s alpha for HIV-related stigma, the motivations, and relational quality.

Data analysis

First, descriptive statistics were reported on HIV status disclosure to partners/spouses, HIV-related stigma, motivations of disclosing or not disclosing HIV status to partners/spouses, marital status, relational

Table 1. Descriptive information and gender difference on measurements of CPM constructs among participants who disclosed HIV status ($N = 125$).

Variables	# of items	Sample items	Response options	Cronbach's alpha	Males ($n = 87$) (μ , SD)	Females ($n = 38$) (μ , SD)	t -tests (df = 123)
HIV stigma scale							
Internalized stigma	8	I feel bad about myself I feel I'm dirty	1 = strongly disagree, 4 = strongly agree	.92	$\mu = 2.38$ SD = .54	$\mu = 2.28$ SD = .53	.88
Perceived stigma	6	Employers would fire employees who are HIV infected		.90	$\mu = 2.58$ SD = .52	$\mu = 2.52$ SD = .58	.53
Relational quality	4	You and your partner/spouse trust each other	1 = not true at all, 4 = very true	.89	$\mu = 3.04$ SD = .76	$\mu = 2.92$ SD = .74	.83
Motivations for disclosure							
Catharsis	3	I don't need to conceal my testing and treatment procedures any more	1 = strongly disagree, 4 = strongly agree	.93	$\mu = 2.67$ SD = .58	$\mu = 2.73$ SD = .44	-.58
Duty to inform/educate	3	My partner would know more about HIV prevention	1 = strongly disagree, 4 = strongly agree	.82	$\mu = 2.55$ SD = .53	$\mu = 2.60$ SD = .48	-.49
Establishing close/supportive relationship	2	I will obtain more support from my partners	1 = strongly disagree, 4 = strongly agree	.77	$\mu = 2.35$ SD = .61	$\mu = 2.49$ SD = .46	-1.24
Motivations for nondisclosure							
Concern about privacy	2	I will have to tell reveal my other secrets (such as my sexual orientation, one night stand)	1 = strongly disagree, 4 = strongly agree	.62	$\mu = 2.25$ SD = .47	$\mu = 2.14$ SD = .50	3.56***
Fear of rejection	3	My partner would blame me after hearing the information	1 = strongly disagree, 4 = strongly agree	.74	$\mu = 2.36$ SD = .45	$\mu = 2.21$ SD = .47	5.07***
Protecting the other	1	My partner would feel discriminated if she/he knew my diagnosis	1 = strongly disagree, 4 = strongly agree		$\mu = 2.59$ SD = .59	$\mu = 2.42$ SD = .63	4.16***

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

quality, and demographic characteristics. Second, chi-square tests or t -tests were used to determine any variations in the study variables between females and males. Third, bivariate correlations were calculated between HIV status disclosure and other study variables. Variables that had significant correlations with HIV disclosure were then entered into logistic regressions to further investigate the predictors of HIV disclosure (or nondisclosure) among the study sample. Socio-demographic variables were entered to serve as controlling variables.

Results

Demographic characteristics

A total of 1093 PLHIV answered the question related to HIV disclosure to partners or spouses; and 125 (11.4%) participants reported that they disclosed their HIV status to their partners or spouses. Table 2 presents descriptive data on demographic variables for those who disclosed their HIV status and who did not disclose as well as the associations between demographic characteristics and whether participants disclosed

their HIV status to their partners or spouses. Chi-square tests show that gender ($\chi^2 = 7.671$, $p < .01$), marital status ($\chi^2 = 67.989$, $p < .001$), and relational quality ($\chi^2 = 14.728$, $p < .001$) were significantly associated with HIV status disclosure to partners or spouses.

Gender differences in motivational variables, stigma, relational factors

As shown in Table 1, significant differences were found in concern about privacy ($t = 3.556$, $p < .001$), fear of rejection ($t = 5.072$, $p < .001$) and protecting the other ($t = 4.157$, $p < .001$) between males and females. However, no significant gender differences were found in motivations for disclosure, marital status, relational quality, internalized and perceived stigma toward PLHIV.

Bivariate correlations

Table 3 presents the bivariate correlations (Pearson's r) between all the study variables and whether participants disclosed their HIV status to their sexual partners or spouses for the female, the male, and the combined samples. Marital status, relational quality, catharsis, duty to inform/educate, establishing supportive relationship, and fear of rejection were significantly correlated with HIV disclosure for the three samples.

Logistic regressions

Results of logistic regressions show that gender was a significant predictor of HIV status disclosure ($\beta = -0.610$, $SE = .235$, $p < .01$) based on demographics, marital status, relational quality and motivations for disclosing (Table 4). Marital status and duty to inform/educate were significant predictors for the combined sample ($\beta = 2.048$, $SE = .291$, $p < .001$; $\beta = 1.450$, $SE = .395$, $p < .001$, respectively), the female sample ($\beta = 1.942$, $SE = .459$, $p < .001$; $\beta = 1.872$, $SE = .644$, $p < .01$, respectively), and the male sample ($\beta = 2.287$, $SE = .396$, $p < .001$; $\beta = 1.200$, $SE = .500$, $p < .05$, respectively). Establishing close or supportive relationship was a significant predictor for the combined sample ($\beta = 0.741$, $SE = .296$, $p < .05$) and the male sample ($\beta = 1.185$, $SE = .373$, $p < .001$).

As shown in Table 5, fear of rejection and marital status were significant predictors for not disclosing for the combined sample ($\beta = 1.520$, $SE = .282$, $p < .001$; $\beta = 1.884$, $SE = .280$, $p < .001$, respectively), the female sample ($\beta = 1.262$, $SE = .517$, $p < .05$; $\beta = 2.002$, $SE = .436$, $p < .001$,

Table 2. The association between socio-demographic characteristics and HIV disclosure to partners/spouses.

Demographic characteristics	Disclosed to partner ($n = 125$, 11.4%)	Not disclosed to partner ($n = 968$, 88.6%)	Chi-square
Age			
≤ 37 years	59 (47.2%)	528 (54.7%)	2.52
> 37 years	66 (52.8%)	437 (45.3%)	
Gender			
Female	38 (30.4%)	548 (56.6%)	7.67**
Male	87 (69.6%)	420 (43.4%)	
Place of residence			
Urban	3 (2.4%)	56 (5.8%)	2.45
Rural	121 (97.6%)	910 (94.2%)	
Religion			
None	119 (96%)	888 (92.5%)	2.00
Religious	5 (4.0%)	72 (7.5%)	
Education			
≤ 6 yrs	58 (46.8%)	445 (46.1%)	.02
≥ 6 yrs	66 (53.2%)	521 (53.9%)	
Employment			
Unemployed	23 (18.7%)	165 (17.1%)	.20
Employed	100 (81.3%)	801 (82.9%)	
Marital relationship			
Married/cohabiting	88 (74.6%)	897 (95.2%)	67.99***
Single/separated/divorced/widowed	30 (25.4%)	45 (4.8%)	
Relational quality ($\mu = 3.294$, $SD = .728$)			
≤ 3.294	82 (65.6%)	458 (47.4%)	14.728***
> 3.294	43 (34.4%)	509 (52.6%)	
Monthly household income			
≤ 999	62 (50.4%)	518 (54%)	4.441
1000–1999	34 (27.6%)	289 (30.1%)	
> 1999	27 (21.9%)	153 (15.9%)	
Number of people living together			
≤ 4	71 (56.8%)	610 (63.1%)	1.901
> 4	54 (43.2%)	356 (36.9%)	
Type of housing			
Own house	109 (87.2%)	839 (86.7%)	.027
Rent/others	16 (12.8%)	129 (13.3%)	

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3. Bivariate correlations between whether disclosed to partners/children and felt stigma and reasons for disclosing and not disclosing.

	Disclosed to partner		
	Combined sample	Males	Females
Age	.01	-.01	-.01
Religion	-.04	-.02	-.06
Place of residence	-.04	-.10*	.07
Education	-.04	-.09*	.08
Employment	-.01	.02	-.07
Marital relationship	-.25***	-.27***	-.25***
Relational quality	-.10**	-.10*	-.11*
Monthly household income	.01	.07	-.03
# of people living together	.04	.06	-.03
Type of housing	.01	.03	-.05
Stigma			
Negative self-image	.01	.02	-.01
Felt public attitudes	-.02	-.02	-.02
Motivations for disclosing			
Catharsis	-.26**	-.29**	-.20**
Duty to inform/educate	-.31***	-.34***	-.25***
Establishing supportive relationship	-.26***	-.30***	-.18***
Motivations for not disclosing			
Concern about privacy	.10**	.08 ($p = .06$)	.11*
Fear of rejection	.20***	.20***	.16***
Protecting	.06 ($p = .07$)	.06	.02

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

respectively), and the male sample ($\beta = 1.568$, $SE = .341$, $p < .001$; $\beta = 1.851$, $SE = .374$, $p < .001$, respectively). Concern about privacy was a significant predictor for the male sample ($\beta = -0.654$, $SE = .319$, $p < .05$).

Discussion

This study presents a theory-guided investigation of HIV status disclosure to sexual partners/spouses among PLHIV in China. CPM offered a useful framework to help identify factors related to decisions about controlling private information and regulating rules in HIV disclosure among PLHIV in China.

Managing privacy through nondisclosure

According to CPM, PLHIV can exert control over their private information by not disclosing their serostatus to their partners or spouses. Petronio (2000, 2002) argues that disclosing privacy makes people vulnerable. Therefore, concealing private information is an intention to manage vulnerability in relationships, which can be evidenced through justifications of nondisclosure such as fear of rejection from others

(Tenzek, Herrman, May, Feiner, & Allen, 2013). In the current study, the majority (i.e., close to 90%) of PLHIV chose to exert their control over their private information in the form of nondisclosure of their HIV status to their partners or spouses. Fear of rejection was a significant predictor of HIV nondisclosure among the study participants. Common fears included blaming from the partner, rejection of sex, and break-up. Therefore, future research and HIV prevention programs should greatly involve sexual partners/spouses of PLHIV to make sure they understand the importance of providing social and emotional support to PLHIV after disclosure. Approaches promoting self-efficacy or self-empowerment of disclosure in future studies might help mitigate fear of rejection.

Concern about privacy was a significant factor in not disclosing to sexual partners or spouses in the male sample. The more the male participants concerned about their privacy, the less likely they disclosed to their partners or spouses. This finding indicates that concerns about privacy inhibit HIV disclosure for the male participants. The common concerns include that, if participants disclosed to their partners or spouses, they had to reveal other secrets (such as sexual orientation, one night stand) or their partners or spouses would tell a third party about their HIV status. The findings indicate that more research is needed to examine how gender differences in privacy concerns affect disclosure of HIV. Also, rules (e.g., “don’t tell others”) are needed between the male discloser and female recipient for keeping the HIV secret; and it is very important for PLHIV to regulate and manage these rules. It would be helpful if future research could investigate how PLHIV could initiate conversations about these boundaries and rules in their intimate relationships.

Results of the current study shows that males were more likely than female participants to report that they disclosed their HIV status to their partners or spouses. This finding is consistent with that of Mayfield et al.’s study (2008). Therefore, gender effect was a possible reason for disclosing or not disclosing HIV to partners or spouses among study participants. And the differences in HIV disclosure decision-making between men and women in China deserve much attention in future research. Although fear of rejection was a significant predictor of nondisclosure for women in this study, it might be a more significant predictor for male participants (see *t*-tests in Table 1). Therefore, future studies need to explore more reasons (other than fear of rejection) for nondisclosure for Chinese women with HIV. Health facilities and health workers should employ effective initiatives to evolve women’s motivation to disclose their HIV status. Couple counseling provided through clinics or community-based HIV

Table 4. Logistic regressions predicting HIV disclosure based on demographics and reasons for disclosing.

Predictors	B coefficient (S.E.) OR(95% CI)		
	Combined sample	Males	Females
Demographics			
Gender	-0.61(.24)** 0.54(0.34,.86)		
Township		-1.12(.66) .33(0.09, 1.19)	
Education		-0.16(.23) .85(0.54,1.34)	
Relational factors			
Marital relationship	2.05(.29)*** 7.75(4.38,13.72)	2.29(.40)*** 9.84(4.53,21.38)	1.94(.46)*** 6.97(2.84,17.14)
Relational quality	0.08(.23) 1.08(0.68,1.71)	0.30(.30) 1.35(0.75,2.44)	-0.33(.39) .72(.33,1.55)
Catharsis	-0.49(.33) 0.61(0.32,1.17)	0.73(.42) 2.07(0.91,4.70)	0.10(.54) 1.11(0.38,3.20)
Duty to inform/educate	1.45(.40)*** 4.27(1.97,9.24)	1.20(.50)* 3.32(1.25,8.84)	1.87(.64)** 6.50(1.84,22.97)
Establishing close/supportive relationship	0.74**(.30) 2.10(1.17,3.75)	1.19(.37)** 3.27(1.57,6.80)	0.13(.49) 1.14(.44,3.00)

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

care programs may alert partners that women with HIV need their support. Friends and family members (e.g., parents, siblings, children) should also offer ongoing support, which might mediate women's decisions about HIV disclosure.

Managing privacy through disclosure

Meanwhile, disclosure was also a way to exert control over private information. In the current study, a total of 125 participants reported that they disclosed their HIV status to their partners or spouses. The endorsement of duty to inform/educate was the only motivation factor that was significantly related to HIV disclosure for the three samples (Table 5). This finding is consistent with the argument that "a sense of obligation is an important motivator for HIV disclosure in intimate relationships" (Derlega et al., 2002, p. 428). In addition, the motivation to establish a close/supportive relationship with intimate partners or spouses was found to be associated with self-reported HIV disclosure for the combined and male samples. These findings lend support to Derlega et al.' (2002) statements that "... emotional closeness is particularly important for HIV disclosure in voluntary (friends and intimate partners) relationships where mutual attraction may be an important relationship factor" (p. 428).

The above findings suggest that there are significant tensions among the need to establish closeness, the feeling of obligation to inform, the fear of rejection, and the need for privacy among the study participants. Therefore, there is a great need of an innovative approach to ease these tensions. According to Willis et al. (2014), the narrative therapy approach and digital storytelling workshops could help ease these tensions and enhance traditional counseling services. Digital storytelling is a process that enables an individual to reflect on their life experience by telling their stories (such as hopeless feelings when they learn about their diagnosis, fear of rejection, and uncertainty for the future) through digital media. This mode of communication can confirm storytellers' self-affirmation and self-knowledge. More importantly, this communication approach can also serve as a therapeutic intervention for storytellers' partners or spouses, which in turn helps them understand storytellers better and provide more emotional support (Willis et al., 2014). Future research and service providers could consider using storytelling to facilitate HIV disclosure among Chinese PLHIV.

Stigma

HIV-related stigma might be a very important factor that affects disclosure decision of PLHIV in China. According to Liu et al. (2006), HIV-related stigma is

Table 5. Logistic regression predicting HIV disclosure based on demographics and reasons for not disclosing.

Predictors	<i>B</i> coefficient (S.E.) OR(95% CI)		
	Combined sample	Males	Females
Demographics			
Gender	-.42(.23) ($p = .06$) .66(.42,1.02)		
Place of residence		-1.14(.63) ($p = .07$) .32(.09,1.10)	
Education		-.33(.27) .72(.42,1.23)	
Relational factors			
Marital relationship	1.84(.28)*** 6.58(3.80,11.56)	1.85(.37)*** 6.37(3.06,13.26)	2.00(.44)*** 7.40(3.15,17.39)
Relational quality	-.32(.21) .72(.48,1.10)	-.17(.27) .84(.50,1.41)	-.66(.37) .52(.25,1.08)
Concern about privacy	-.40(.28) .67(.39,1.15)	-.65(.32)* .52(.28,.97)	-.09(.48) .92(.36,2.36)
Fear of rejection	1.52(.28)*** 4.57(2.63,7.94)	1.57(.34)*** 4.80(2.46,9.36)	1.26(.52)* 3.53(1.28,9.73)
Protecting	-.41(.22) ($p = .07$) .67(.43,1.03)		

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

prevalent in China due to three key characteristics of Chinese culture: collectivism, Traditional Chinese Medicine, and family responsibility. Collectivist Chinese culture subjects individual interests to those of groups. Therefore, HIV+ persons are stigmatized by the society because the group value is perceived to be damaged by these HIV+ individuals. "In Chinese traditional medicine, a disease may be caused by immoral behaviors as a spiritual attack from evil sources that had lodged in the body or taken over the person" (Liu et al., 2006, p. 134). Therefore, HIV+ individuals have been stigmatized that they have done immoral behaviors such as casual sex and drug use. Finally, family responsibility is held more important than individual rights in China, therefore, both the HIV-infected person and their family members are highly stigmatized. However, the current study found that the perceived HIV-related stigma was not associated with any of the reasons for HIV disclosure and whether participants disclosed their HIV status to partners or spouses, which is consistent with the findings of the study conducted by Derlega and associates (2002), but not consistent with those of Liu et al.'s (2006) who found that HIV-related stigma was significantly related to intentions to disclose HIV status among a sample of marriage license applicants. One possible explanation is that perceived HIV-related stigma may play a less important role in intimate relationships than in other

relations because intimate relations are more likely based on free choice and mutual attraction (Derlega et al., 2002). Another possible explanation is that a combination of targets (including spouses, parents, friends, and others), rather than partners/spouses, was potential disclosure recipients in Liu et al.'s (2006) study. No matter what reason it is, continued research is needed to examine the role of stigma on HIV disclosure among Chinese PLHIV.

Relational factors

Consistent with CPM's assumption, the current study demonstrated that research participants who were in a marriage or cohabiting relationship were more likely to disclose their status to sexual partners/spouses than those who were single, separated, divorced, or widowed. However, inconsistent with the theoretical assumption and previous studies, relational quality was not a significant predictor of HIV disclosure among the study participants. These findings suggest that special attention should be directed to those people who were not in a marriage or cohabiting relationship to better understand their decisions about disclosing or concealing their HIV status. Continuing research studies are needed to investigate the role of relational quality in making decisions about disclosure among PLHIV in China.

This study has limitations. First, this study did not consider whether participants also disclosed to other people (e.g., parents, children, friends) and what the order was for disclosure if they disclosed to both spouses/partners and other people. Reasons for disclosure to partners/spouses as the first recipient must be different than when partners/spouses were the second or even later recipient. Second, this is a retrospective study asking the participants to recall the reasons for disclosure or nondisclosure. However, there might be some distortion in the data because some participants might have been living with HIV for a long time. Third, only the participants who had 5–16 years old children were included in the analysis. Therefore, findings cannot be extended to HIV disclosure among other PLHIV in China.

Despite these limitations, the current study has theoretical and practical implications for HIV interventions that focus on the factors associated with disclosure decision-making and facilitate PLHIV in China to cope with the disease. First, theory-based research is greatly needed in this area. Second, more rigorous investigation is needed to examine gender differences in HIV disclosure. Third, future research and intervention programs need to consider how to ensure confidentiality of study participants' privacy given the fact that concerns about privacy (such as third-party leakage) were found to be some barriers of HIV disclosure. Finally, more comprehensive interventions that target multiple factors (such as the need to establish closeness, the feeling of obligation to inform, the fear of rejection, and the need for privacy) are greatly needed to promote voluntary HIV disclosure among PLHIV in China.

Disclosure statement

No potential conflict of interest was reported by the authors.

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