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Relation of sexual risks and prevention practices with individuals' stigmatising beliefs towards HIV infected individuals: an exploratory study

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Abstract

Objective— To investigate how an individual's stigmatising beliefs towards people living with HIV are related to his or her own sexual risk and protective behaviours.

Methods— A cross sectional survey was conducted to assess HIV related stigmatising beliefs, risk sexual behaviours, and preventive practices among sexually experienced rural to urban migrants aged 18–30 years in 2002 in Beijing and Nanjing, two large Chinese cities.

Results— Among 2153 migrants, 7.2% reported having had more than one sexual partner in the previous month, 9.9% had commercial sex partners, and 12.5% had an episode of a sexually transmitted disease (STD). Only 18% reported frequently or always using condoms, with 20% sometimes or occasionally using them. 57% of the Chinese migrants were willing to take a voluntary HIV test, and 65% had HIV related stigmatising beliefs towards people living with HIV. Multiple logistic regression analysis depicts that individual's stigmatising beliefs towards people with HIV

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Study concept and design: HL, XL, BS, XF, RM; acquisition of data: HL, XF, RM.; analysis and interpretation of results: HL, XL, BS, XC, HY; drafting of the manuscript: HL, XL, BS, XC, HY

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Ethics approval: This research study was approved by the institutional review boards at West Virginia University and Wayne State University in the United States and the collaborating institutes in China (for example, Beijing Normal University and Nanjing University), and was conducted in full accordance with ethical principles, including the provisions of the World Medical Association Declaration of Helsinki, and free and informed consent was obtained from all human subjects.

were positively associated with having had an episode of an STD, having multiple sex partners, or having had commercial sex partners, and were negatively associated with condom use and the willingness to accept an HIV test.

Conclusion— The finding that one's own stigmatising belief is a potential barrier to HIV related preventive practices highlights the difficulties and challenges in implementing behavioural interventions.

China is experiencing a rapid growth in the number of people with HIV/AIDS. As estimated by UNAIDS, 10 million Chinese may be infected with HIV by 2010 unless effective prevention action is taken.¹ Many of the HIV infection in China are believed to be among the nation's 100 million rural to urban migrants.^{2–4} Consistent with the reaction in countries around the globe, currently HIV infection in China is a highly stigmatised disease⁵ and stigmatising beliefs and discriminatory attitudes towards people with HIV have been documented in China.⁶

Stigma has been described by Goffman as a quality that “significantly discredits” an individual in the eyes of others.⁷ With regard to the HIV/AIDS epidemic, HIV related stigma refers to “prejudice, discounting, discrediting, and discrimination directed at people perceived to have HIV/AIDS, as well as the individuals, groups, and communities with which they are associated.”⁸ HIV infected individuals are often labelled with identifiers that indicate they have socially unacceptable behaviours, or are potentially dangerous to society. They are the target groups receiving stigmatising beliefs and attitudes from the society in which they are living. It has been well documented that stigmatised individuals delay or avoid seeking medical services or taking protection for fear of being identified as HIV positive because they fear the stigmatising attitudes and beliefs of society.^{9,10} However, questions remain regarding whether an individual's stigmatising beliefs about others are related to his or her own sexual risk and protective behaviours. In this exploratory study, we hypothesise that individuals who have stigmatising beliefs towards people living with HIV display greater risky sexual behaviours and less preventive practices in order to avoid being stigmatised.

METHODS

Study sites and participants

This research study was approved by the institutional review boards at West Virginia University and Wayne State University in the United States and the collaborating institutes in China (for example, Beijing Normal University and Nanjing University). The study sites and population have been described previously.³ Briefly, the study was conducted in 2002 among young migrants (18–30 years of age) in Beijing, China's capital and Nanjing, the capital city of Jiangsu Province in eastern China. The sample was recruited using “quota sampling” of 10 occupational groups. After providing informed consent, participants were asked to complete an anonymous self administered questionnaire in a separate room at their workplace or another location convenient to the participants. The interviewers provided assistance to a few migrants with limited literacy by reading part of the questionnaire. Demographic characteristics of the migrants are described in table 1. A total of 4301 migrants in the two cities were approached. Twenty four (0.6%) declined to participate, 69 were deleted from the data file because of either substantial missing data or missing values on key demographic variables. A final sample of 4208 was retained in the study. The participants in the current report were a subsample of 2153 sexually experienced respondents, consisting of 33.8% females and 46% of whom were recruited from Beijing. Mean age of the sample was 25 years in Beijing and 26 years in Nanjing. The majority of the participants were ethnic Han (97%) and had finished a minimum of middle school education (92.6%). About half of the respondents (55.6%) had never been married. They had been migrating to cities for a median of 5 years, with 71% having been in at least two different cities during their migration. An average monthly income was \$97 (median).

Measures

Stigmatising beliefs towards people with HIV—Four items were developed to capture the pattern of prejudice, discounting, and discrimination against people living with HIV. There items include: (1) “HIV infected people should be ostracised by their spouse and family members”; (2) “HIV infected people should be forced to leave their villages”; (3) “I would not be able to maintain a normal relationship with my friends if they become infected with HIV”; and (4) “HIV infected people should not have the same rights to education and employment as others.” Participants responded on a four point Likert scale, ranging from strongly agree to strongly disagree. The Cronbach alpha for this scale was 0.62. Two variables were created in data analysis: (1) a binary variable wherein individuals selected “strongly agree” or “agree” as their responses to at least one of the four items were classified as “having stigmatising beliefs,” those who selected “strongly disagree” or “disagree” to all the four items as “having no stigmatising beliefs”; and, (2) a categorical variable with four levels (0: having no stigmatising response to all the four items; 1: providing a stigmatising response to only one item; 2: stigmatising responses to two items; and 3: stigmatising responses to three or four items).

Mobility—Respondents were queried about the total years of their migratory experience and the number of cities in which they had lived during their migration. The ratio of the number of migratory cities to years of total migration was employed as an index of mobility. The mobility index of the migrants ranged from 0.06 to 10 (median 0.50) with higher values indicating higher levels of mobility. Using the ratio may control for a potential confounder “duration of migration”—that is, older people may have a greater number of migratory years and number of cities. The index was then parcelled across five groupings according to its distribution (0.06–0.30, 0.31–0.49, 0.50–0.70, 0.71–1.00, and 1.01–10.00) as shown in table 1.

HIV knowledge—The knowledge scale consisted of 22 items, each of which required a true/false or likely/unlikely response; examples of the knowledge are, “AIDS is caused by a virus” and “Taking a shower after sex can reduce the chance of getting AIDS.” The percentage of correct answers was retained as a composite score with higher scores reflecting increased knowledge about the transmission and symptoms of HIV/AIDS. The mean score of HIV knowledge in subjects was 14.1 (SD 2.89, range 0–22). The Cronbach alpha for this scale was 0.78.

HIV risk behaviours—Three items were employed to assess participants’ HIV risk behaviours. The first items assessed the number of sexual partners during the previous month. Those who had had two or more sexual partners were considered to have had “multiple sexual partners.” The second item asked whether they had ever had commercial sex partners (sold sex or bought sex) (yes/no). “Having had an episode of an STD” was used as a risk behaviour indicator. Subjects who had ever had a clinician confirmed episode of an STD were defined as “having a history of an STD” while those who had never had a clinician confirmed episode of an STD were defined as “having no history of an STD.”

Preventive practices—HIV related preventive practices (or intentions) were assessed through two questions. The first question assessed the frequency of condom use when they had sex (always, often, sometimes, or never). The other item assessed the participants’ willingness to receive an HIV test (yes/no).

Analysis

Firstly, bivariate analysis was used to estimate odds ratios (OR) and their 95% confidence intervals (95% CI) of the associations of stigmatising beliefs with social, demographic, and migratory characteristics and perception of HIV infection. Secondly, two models were

developed to assess associations between stigmatising beliefs (regressor) and risk behaviours and preventive practices (regressand). Model 1 was an unadjusted model including only one regressor (stigmatising beliefs, binary variable) in a logistic regression model. Model 2 was a multiple logistic regression in which the associations between risky sexual behaviours and preventive practice with stigmatising beliefs (categorical variable with four levels) were assessed by controlling covariates listed in table 3 plus age and HIV/AIDS knowledge. All statistical analyses were performed using SAS (Version 9.1; SAS Institute, Cary, NC, USA).

RESULTS

Stigmatising beliefs towards people with HIV

Among the subjects, over one third (35%) did not have a stigmatising response to any of the four items, whereas 65% had a stigmatising response to at least one item; 8% had a stigmatising response to all the four items, 12% to three items, 21% to two items, and 24% to only one item (table 2).

Table 3 shows the distribution of HIV related stigmatising beliefs among the study subjects. Participants having a primary school education, having a lower monthly income, or perceiving a higher risk of acquiring HIV infections had a higher degree of stigmatising beliefs towards people with HIV. Subjects having stigmatising beliefs had lower HIV/AIDS knowledge compared to those without the stigmatising beliefs (13.8 v 15.3 mean scores, respectively; $t = 12.1$, $p < 0.01$). The presence of stigmatising beliefs was not associated with age ($t = 1.1$, $p = 0.27$).

Association of HIV related stigmatising beliefs and sexual risk behaviours

Among subjects, 7.2% (155) reported having had more than one sexual partner in the previous month, 9.9% (213) having had commercial sex partners, and 12.5% (268) having had an episode of an STD. Of the sexually experienced, only 5.3% (114) reported that it was possible for them to acquire an HIV infection. The results of the two models are presented in table 4. Multiple logistic regression analysis depicts that their stigmatising beliefs towards people with HIV were positively associated with having had an episode of an STD, having multiple sex partners in the previous month, or having had commercial sex partners.

Association of the stigmatising beliefs with preventive practices

Among study subjects, only 18% (355) reported frequently or always using condoms, with 20% sometimes or occasionally using them. Fifty seven per cent (1226) were willing to take a voluntary HIV test. HIV related stigmatising beliefs were negatively associated with each preventive practice in the two models (table 4).

DISCUSSION

Findings in this study document that HIV risky sexual behaviours, including having multiple sex partners, commercial sex, and having a history of an STD as a risk indicator, were associated with increased stigmatising beliefs. One's stigmatising beliefs towards people living with HIV were also associated with a decreased probability of taking preventive practices—for example, using condoms frequently and voluntary HIV testing.

The endorsement of stigmatising beliefs may be the result of attempts to reduce the cognitive dissonance associated with engaging in the practices. According to cognitive dissonance theory,¹¹ cognitive dissonance may be evoked when a person holds inconsistent beliefs or acts inconsistently with held beliefs. To reduce the resulting discomfort, the person is motivated to change his or her attitude so as to eliminate the inconsistency. HIV related stigma is related to

identification of HIV/AIDS as a serious illness and the association of AIDS with people and groups already stigmatised before the epidemic.¹² Because one's stigmatised behaviour is endangering one's dignity and health, cognitive dissonance is probably aroused. If one cognition derives from a behaviour that has already been performed, the easiest course is to change one's beliefs rather than to change one's behaviour.¹³ One method to justify one's stigmatised behaviours may be to blame or stigmatise people living with HIV—that is, to add a consonant cognition. By assuming that my sex partners do not have HIV, I cannot become infected; consequently, my behaviour is not so bad and will not be noticed by others. Botnick reported that one method of justifying one's unsafe sex was to blame HIV victims among homosexuals in order to reduce dissonance.¹⁴ It is also possible that people practising stigmatising behaviour may try to blend in with people without such behaviour and harmonise personal beliefs with public endorsements in an effort to maintain positive self view¹⁵ and possible selves.¹⁶ This result is similar to the one reported by Burkholder and colleagues,¹⁷ who found in a study among 481 sexually active youths that stigmatising beliefs regarding others is related to greater behavioural risk for HIV/AIDS.

Our study demonstrates that having stigmatising beliefs is negatively associated with use of condoms and voluntary HIV testing. Because condoms are often associated with casual sex, infidelity, and/or multiple partners,¹⁸ condom use itself may be stigmatised. For example, in India, a significant barrier to condom use was lack of privacy in stores.¹⁹ Effective HIV intervention requires timely testing for HIV infection and control of the sources of HIV infection in communities, including prevention of secondary infections in households. However, only half of the subjects in this study expressed willingness to undergo HIV testing, and their willingness was negatively associated with their stigmatising beliefs. HIV associated stigma contributes to the psychological burden of receiving a positive antibody test as the disclosure of the result would put them in a stigmatising condition.²⁰ Stigmatising beliefs and fears of discrimination can influence decisions to seek HIV testing.¹⁰ In an effort to escape stigma and avoid cognitive dissonance, people may be reluctant to seek HIV testing. A survey of rural residents in China showed that HIV related discrimination and family unification were two key factors associated with the subjects' decisions to disclose HIV test results to their spouses.²¹ Our findings are consistent with a study conducted in South Africa that shows participants who were not tested for HIV held significantly more AIDS related stigmatising beliefs than those who had been tested.²²

This study has several limitations. Firstly, because migrants were recruited from only two cities, they might not be representative of other migrant populations in China; therefore, the findings may have limited generalisability. Secondly, the Cronbach alpha of the four items measuring HIV related stigmatising beliefs is relatively low (0.62), indicating less than optimal internal consistency. Further studies are needed to improve its reliability and validity. Thirdly, as the sample was not a random sample, some selection bias may exist. However, the relatively large sample size might minimise this bias. Finally, owing to the cross sectional nature of this study, these data should be interpreted as associations rather than implying causality.

Despite the limitations, our findings have important public health implications for HIV/AIDS intervention programmes. The finding that one's own stigmatising belief is a potential barrier to HIV related preventive practices highlights the difficulties and challenges in implementing behavioural interventions.

Key messages

- Findings among a sample of sexually active Chinese migrants document that HIV risky sexual behaviours, including having multiple sex partners, commercial sex,

and having a history of an STD as a risk indicator, were associated with increased stigmatising beliefs

- One's stigmatising beliefs towards people living with HIV were also associated with a decreased probability of taking preventive practices—for example, using condoms frequently and voluntary HIV testing
- This finding that one's own stigmatising belief is a potential barrier to HIV related preventive practices highlights the difficulties and challenges in implementing behavioural interventions.

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Abbreviations

STD

sexually transmitted diseases

Table 1

Social economic demographics of migrants by migratory cities

| | Beijing | | Nanjing | | p Value |
|----------------------------|------------|------|------------|------|---------|
| | No | % | No | % | |
| Sex | | | | | |
| Male | 645 | 65.0 | 780 | 67.2 | 0.29 |
| Female | 347 | 35.0 | 381 | 32.8 | <0.01 |
| Age (years) | | | | | |
| Mean (SD) | 25.0 (3.5) | | 26.1 (3.6) | | 0.05 |
| Education | | | | | |
| Primary school or less | 69 | 7.0 | 89 | 7.8 | 0.99 |
| Middle school | 552 | 55.8 | 590 | 51.3 | |
| High school | 324 | 32.8 | 385 | 33.5 | |
| Post secondary school | 43 | 4.4 | 85 | 7.4 | |
| Ethnicity | | | | | |
| Han | 956 | 96.9 | 1113 | 96.9 | |
| Minorities | 31 | 3.1 | 36 | 3.1 | <0.01 |
| Marriage status | | | | | |
| Married | 467 | 47.7 | 454 | 41.4 | 0.39 |
| Single | 512 | 52.3 | 643 | 58.6 | |
| Current working place | | | | | |
| No job | 24 | 2.4 | 58 | 5.0 | |
| Hotel or restaurant | 164 | 16.6 | 218 | 18.9 | |
| Entertainment [*] | 332 | 33.5 | 308 | 26.7 | |
| Construction site | 234 | 23.6 | 324 | 28.1 | |
| Peddler market | 103 | 10.4 | 99 | 8.6 | |
| Domestic service | 53 | 5.4 | 18 | 1.5 | |
| Others | 80 | 8.1 | 129 | 11.2 | |
| Monthly income in US\$ | | | | | |
| ≤57 | 147 | 14.8 | 202 | 17.4 | 0.04 |
| 58–80 | 198 | 20.0 | 253 | 21.8 | |
| 81–115 | 220 | 22.2 | 241 | 20.8 | |
| >115 | 427 | 43.0 | 465 | 40.0 | 0.06 |
| Mobility index | | | | | |
| 0.06–0.30 | 248 | 25.0 | 322 | 28.7 | |
| 0.31–0.49 | 189 | 19.0 | 241 | 21.4 | |
| 0.50–0.70 | 291 | 29.3 | 274 | 24.4 | |
| 0.71–1.00 | 180 | 18.2 | 189 | 16.8 | |
| 1.01–10.00 | 84 | 8.5 | 98 | 8.7 | 0.84 |
| To whom resided in city | | | | | |
| Alone | 109 | 11.0 | 125 | 10.8 | |
| Spouse or children | 321 | 32.4 | 386 | 33.3 | |
| Others [†] | 562 | 56.6 | 647 | 55.9 | 0.84 |
| No. of job taken | | | | | |
| 1 or no job | 298 | 30.0 | 325 | 28.0 | |
| 2 | 274 | 27.6 | 360 | 31.0 | |
| 3 | 233 | 23.5 | 271 | 23.3 | |
| 4 | 94 | 9.5 | 90 | 7.8 | |
| >4 | 93 | 9.4 | 115 | 9.9 | |

* Sauna club, bath house, karaoke room, beauty salon, massage parlour, and dance hall.

† Other family number, co-workers, fellow villagers, and relatives.

Table 2

Migrants' responses to HIV stigmatising beliefs

| | Strongly agree | | Agree | | Disagree | | Strongly disagree | | Having stigmatising beliefs* | |
|--|----------------|------|-------|------|----------|------|-------------------|------|------------------------------|------|
| | No | % | No | % | No | % | No | % | No | % |
| Item 1: HIV infected people should be ostracised by their spouse and family members | 254 | 11.8 | 466 | 21.8 | 1143 | 53.2 | 284 | 13.2 | 720 | 33.5 |
| Item 2: HIV infected people should be forced to leave their villages | 162 | 7.6 | 462 | 21.6 | 1192 | 55.5 | 328 | 15.3 | 624 | 29.1 |
| Item 3: I would not be able to maintain a normal relationship with my friends if they become infected with HIV | 169 | 8.0 | 709 | 33.3 | 1076 | 50.7 | 169 | 8.0 | 878 | 41.4 |
| Item 4: HIV infected people should not have the same rights to education and employment as others | 145 | 6.8 | 506 | 23.8 | 1127 | 53.0 | 349 | 16.4 | 651 | 30.6 |

* Subjects selecting "strongly agree" or "agree" as their response to each item were coded as "having stigmatising beliefs."

Table 3

Distribution of HIV related stigmatising beliefs

| | Having stigmatising beliefs | | OR* | 95% CI [†] |
|-----------------------------|-----------------------------|------|------|---------------------|
| | No | % | | |
| Sex | | | | |
| Male | 939 | 65.9 | 1 | |
| Female | 453 | 62.2 | 0.85 | 0.71 to 1.03 |
| Education | | | | |
| Primary school | 119 | 75.3 | 1 | |
| Middle school | 782 | 68.5 | 0.71 | 0.49 to 1.04 |
| High school | 420 | 59.2 | 0.48 | 0.32 to 0.70 |
| Post secondary school | 60 | 46.9 | 0.29 | 0.18 to 0.48 |
| Ethnicity | | | | |
| Han | 1331 | 64.3 | 1 | |
| Minorities | 48 | 67.2 | 0.88 | 0.53 to 1.48 |
| Marriage status | | | | |
| Married | 590 | 64.1 | 1 | |
| Single | 744 | 64.4 | 0.98 | 0.82 to 1.18 |
| Migration city | | | | |
| Naning | 747 | 64.3 | 1 | |
| Beijing | 645 | 65.0 | 1.03 | 0.86 to 1.23 |
| Current working place | | | | |
| Entertainment [‡] | 413 | 64.5 | 1 | |
| No job | 58 | 70.7 | 1.33 | 0.80 to 2.20 |
| Hotel or restaurant | 245 | 64.1 | 0.98 | 0.75 to 1.28 |
| Construction site | 366 | 65.6 | 1.05 | 0.83 to 1.33 |
| Peddler market | 126.00 | 63.4 | 0.91 | 0.66 to 1.26 |
| Domestic service | 51 | 71.8 | 1.40 | 0.82 to 2.41 |
| Others | 127 | 60.8 | 0.85 | 0.62 to 1.17 |
| Monthly income in US\$ | | | | |
| ≤57 | 250 | 71.6 | 1 | |
| 58–80 | 291 | 64.5 | 0.72 | 0.53 to 0.97 |
| 81–115 | 286 | 62.0 | 0.64 | 0.47 to 0.87 |
| >115 | 565 | 63.3 | 0.68 | 0.52 to 0.90 |
| Mobility index | | | | |
| 0.06–0.30 | 357 | 62.6 | 1 | |
| 0.31–0.49 | 275 | 64.0 | 1.06 | 0.82 to 1.37 |
| 0.50–0.70 | 351 | 62.1 | 0.98 | 0.77 to 1.24 |
| 0.71–1.00 | 257 | 69.7 | 1.37 | 1.04 to 1.81 |
| 1.01–10.00 | 124 | 68.1 | 1.28 | 0.89 to 1.82 |
| To whom resided in city | | | | |
| Alone | 161 | 68.8 | 1 | |
| Spouse or children | 468 | 66.2 | 0.89 | 0.65 to 1.22 |
| Others [§] | 763 | 63.1 | 0.78 | 0.57 to 1.05 |
| No of jobs taken | | | | |
| 1 or no job | 408 | 65.5 | 1 | |
| 2 | 407 | 64.2 | 0.94 | 0.75 to 1.19 |
| 3 | 322 | 63.9 | 0.93 | 0.73 to 1.19 |
| 4 | 114 | 62.0 | 0.86 | 0.61 to 1.21 |
| >4 | 141 | 67.8 | 1.11 | 0.79 to 1.55 |
| Perception of HIV infection | | | | |
| Impossible | 910 | 63.2 | 1 | |
| Less likely | 383 | 65.1 | 1.09 | 0.89 to 1.33 |
| Highly likely | 96 | 84.2 | 3.11 | 1.86 to 5.21 |

* Odds ratio.

[†] 95% confidence interval.[‡] Sauna club, bath house, karaoke room, beauty salon, massage parlour, and dance hall.[§] Other family number, co-workers, fellow villagers, and relatives.

Table 4

Associations of HIV stigmatising beliefs, risk behaviours, and safer practices

| | Having had an episode of STD [†] | | Having had multiple sex partners | | Having had commercial sex | | Condom use | | Intention to receive HIV test | |
|-----------------------------------|---|---------------------|----------------------------------|--------------|---------------------------|--------------|---------------------------|--------------|-------------------------------|--------------|
| | OR [‡] | 95% CI [‡] | OR | 95% CI | OR | 95% CI | OR | 95% CI | OR | 95% CI |
| Unadjusted | 2.32 | 1.70 to 3.16 | 1.75 | 1.20 to 2.54 | 1.94 | 1.39 to 2.71 | 0.60 | 0.47 to 0.76 | 0.64 | 0.54 to 0.77 |
| Stigmatising beliefs [*] | | | | | | | | | | |
| Multiple logistic regression | | | | | | | | | | |
| 1 v 0 | 1.71 | 1.14 to 2.58 | 0.84 | 0.49 to 1.45 | 1.38 | 0.88 to 2.16 | 0.71 | 0.50 to 0.98 | 0.82 | 0.64 to 1.06 |
| 2 v 0 | 2.00 | 1.33 to 3.03 | 1.58 | 0.96 to 2.60 | 1.73 | 1.11 to 2.71 | 0.91 | 0.65 to 1.28 | 0.64 | 0.50 to 0.83 |
| 3 or 4 v 0 | 1.84 | 1.20 to 2.82 | 2.01 | 1.21 to 3.32 | 1.99 | 1.27 to 3.12 | 0.65 | 0.45 to 0.96 | 0.52 | 0.40 to 0.68 |
| Goodness of fit test | $\chi^2 = 9.16, p = 0.33$ | | $\chi^2 = 9.19, p = 0.33$ | | $\chi^2 = 7.58, p = 0.48$ | | $\chi^2 = 8.16, p = 0.42$ | | $\chi^2 = 5.88, p = 0.66$ | |

^{*} Having stigmatising beliefs v none.

[†] Odds ratio.

[‡] 95% confidence interval.