Perceived stigma, mental health and unsafe sexual behaviors of people living with HIV/AIDS

LIU Yan¹, GONG Huanyu¹, YANG Guoli¹, YAN Jin²

(1. Department of Infectious Disease; 2. Department of Nursing, Third Xiangya Hospital, Central South University, Changsha 410013, China)

ABSTRACT

Objective: To determine the relationship among perceived stigma, mental health and unsafe sexual behaviors of people living with HIV/AIDS.

Methods: Cross-sectional research was used to interview people living with HIV/AIDS (PLWHA) from April 2012 to March 2013 in Changsha, China. The questionnaires included General Questionnaire, Sexual Behavior Questionnaire, Patient Health Questionnaire Depression Scale (PHQ-9), General Anxiety Disorder Scale (GAD-7) and Psychometric Assessment of the HIV Stigma Scale. The results were statistically analyzed with SPSS18.0.

Results: The total score of perceived stigma and its 4 dimensions were positively correlated with anxiety and depression. The total score of perceived stigma and its dimensions were associated with disclosure, but no significantly correlated with other sexual behaviors. Hierarchical regression showed perceived stigma had an effect on anxiety.

Conclusion: The stigma perceived by PLWHA is above the average level. Perceived stigma has an effect on mental health, especially anxiety, but no effect on unsafe sexual behaviors.

KEY WORDS: people living with HIV/AIDS; perceived stigma; depression; anxiety; unsafe sexual behavior
Perceived stigma, mental health and unsafe sexual behaviors of people living with HIV/AIDS    LIU Yan, et al.

HIV remained a highly stigmatized illness in China. Since sexual contact became the primary way for HIV infection, people often related this disease with some groups, such as sex workers and gay men. In the Chinese context, people living with HIV/AIDS (PLWHA) were still morality centered, and were viewed as morally problematic others. A lack of accurate information about HIV/AIDS, and misunderstanding of HIV transmission was a common source of HIV/AIDS stigma. Although AIDS education campaigns in recent years have improved knowledge of HIV/AIDS in China, it has been, and continues to be, viewed by the public as a disease imbued with such negative meanings as “immorality,” and “death.”

Stigma associated with HIV/AIDS has been identified as key barriers to fight this epidemic effectively. Due to fears of facing discrimination, perceived stigma may inhibit them from obtaining the HIV test. Similarly, perceived stigma was characterized by a stressful experience. Perceived stigma can act as a chronic stressor that may impact HIV disease progression, mental health and behaviors among PLWHA. The rate of suffering from mental disease (4%–9%) was higher than the general population (0.2%–0.8%) [4]. Stigma was a more powerful predictor and correlated with symptoms of depression and anxiety [5]. Besides, safe sexual practices may also be undermined by stigma-related experiences [6]. PLWHA who had experienced stigma may be less likely to disclose their HIV status to others with whom they have sex [5]. Few studies have shown that experience of AIDS-related discrimination can lead to unsafe sexual behaviors [6], but Vanable’s research showed that experience of the AIDS-related discrimination was not associated with unsafe sexual behaviors.

Several studies have outlined the effects of perceived stigma on health outcome. However, no report had released about the relationships among perceived stigma, mental health and unsafe sexual behaviors in China. Therefore, in this study, we examined the role of perceived stigma in mental health and unsafe sexual behaviors and their relation.

1 Materials and methods

1.1 Subjects

The subjects were PLWHA who had registered in the Centers for Disease Control (CDC) in Changsha. The inclusion criteria were: 1) over 18 years old; 2) HIV positive; 3) normal cognition to complete the questionnaires. The exclusion criteria were: 1) AIDS in terminal phase (IV); 2) complicated with other serious diseases (e.g. cancer, heart failure, disability, etc.).

1.2 Measures

General questionnaire: age, gender, marital status, education level, income, and so on.

Patient Health Questionnaire Depression Scale (PHQ-9). It was made by Spitzer [10], the main function of the scale was to measure depression. In this study, we used the Chinese version translated by Bian Cuidong [11]. It consisted of 9 items, and the total score ranged from 0 to 27. The more score people got, the more depression they suffered. In preliminary experiment, the Cronbach’s α was 0.857.

Generalized Anxiety Disorder Scale (GAD-7): It was a part of the patient health questionnaire which was used to assess anxiety of people. In this study, we used the Chinese version translated by Li Chunbo [12]. It consisted of 7 items, and the total score ranged from 0 to 21. The more score people got, the more anxiety they had. In preliminary experiment, the Cronbach’s α was 0.898.

Psychometric Assessment of the HIV Stigma Scale: It was made by Berger [13]. The scale consisted of 40 items, 4 dimensions, including disclosure concerns, concern with public attitudes about people with HIV, personalized stigma and negative self-image. The total score ranged from 40 to 160, the higher scores showed more stigma people had perceived. In preliminary experiment, the Cronbach’s α was 0.910.

Sexual Behaviors Questionnaire: It was made by researchers, which included the number of sexual partners, condom use and disclosure in the last 3 months. In preliminary experiment, the Cronbach’s α was 0.738.
1.3 Data collection
Participants were recruited from April 2012 to March 2013. When patients came to CDC, they all were arranged in a counseling room by the nurses; the staff of CDC would introduce the study to prospective participants and answer relevant inquiries. Verbal informed consent was obtained and the interviewers signed on a form pledging that they had followed the briefing and consent procedures closely. Anonymous face-to-face interview, using a questionnaire which took about 10 minutes to complete, was conducted in a counseling room to enhance privacy. CD4 counts were the latest results of test.

1.4 Ethical considerations
The ethical approval for this study was obtained from the Ethics Committee of Third Xiangya Hospital, Central South University.

1.5 Statistical analysis
The software SPSS 18.0 was applied for data analysis. Linear correlation was used to show the relationship between stigma and mental health. Rank correlation was employed to show the relationship between stigma and unsafe sexual behaviors. Hierarchical regression model was employed to analyze the related factors of perceived stigma, \( P<0.05 \) was considered statistically significant.

2 Results

2.1 Demographic characteristics
A total of 290 PLWHA were interviewed from April 2012 to March 2013. The age of the samples was (32.8±9.5) years old. There were 231 (79.7%) male and 185 (63.8%) had completed high school education at least. One hundred and forty-one (48.6%) did not get married. The HIV risk group was men who had sex with men in 132 (45.5%), heterosexual transmission in 145 (50.0%), injection drug use in 6 (2.1%), and blood transmission in 7 (2.4%, Table 1).

2.2 Perceived stigma of PLWHA
The score of perceived stigma of 290 PLWHA was 112.80±18.11. The score of disclosure concerns, concern with public attitudes about people with HIV, personalized stigma and negative self-image dimensions were 29.11±4.52, 57.08±10.08, 49.81±9.17 and 35.81±6.19.

2.3 Mental health of PLWHA
The score of depression were 8.15±6.68. Among 290 PLWHA, 168 (57.9%) patients had depressive syndrome. The score of anxiety was 6.66±5.91, and 151 (52.1%) PLWHA had anxiety syndrome.

2.4 Unsafe sexual behaviors of PLWHA
In the last 3 months, 117 (40.3%) people had no fixed sexual partners, and 92 (31.7%) people did not inform HIV infection status to their spouse or sexual partner in sexual intercourse. As for the condom use in the last 3 months, 9 (3.1%) people were never users, 16 (5.5%) people used the condom sometimes, 61 (21.0%) people used most of time and 204 (70.3%) people used the condom every time.

2.5 Relationships among perceived stigma, mental health and unsafe sexual behaviors
The total score of depression and anxiety were positively associated with the score of perceived stigma \((r=0.256\) and 0.322). The total score of perceived stigma were associated with disclosure \((r=0.131\). The patients who perceived more stigma were unlikely to disclose their HIV infection to others. And the total score of perceived stigma, the score of its dimensions and fixed sexual partner, condom use had no significant difference \((P>0.05, \) Table 2).

2.6 Effect of perceived stigma on mental health and unsafe sexual behaviors
In the study, perceived stigma of PLWHA was defined as the dependent variable. Hierarchical regression was
used to show the effect. Firstly, the original model was built, in which the demographics characteristics were independent variables \((F=0.577, P=0.749)\). In this model, the determination coefficient \(R^2\) was 0.012. Secondly, we put the mental health into the model \((F=4.737, P<0.001)\), and \(R^2\) was 0.119. Only the anxiety entered into the model was statistically significant. And 10.7% difference could be explained by mental health. Thirdly, the mental health was removed and unsafe sexual behaviors were entered into the model \((F=1.300, P=0.237)\). The \(R^2\) was 0.040. And 2.8% difference could be explained by unsafe sexual behaviors. Finally, the demographics characteristics, mental health and unsafe sexual behaviors were independent variables. Only one factor entered the regression model: anxiety \((F=4.226, P<0.001)\). The more stigma PLWHA perceived, the more anxiety they experienced. Depression, unsafe sexual behavior and other demographic characteristics were not statistically significant (Table 3).

### Table 2  Relationships among perceived stigma and mental health, unsafe sexual behaviors

<table>
<thead>
<tr>
<th>Index</th>
<th>Depression</th>
<th>Anxiety</th>
<th>Fixed sexual partner</th>
<th>Disclosure</th>
<th>Condom use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceive stigma</td>
<td>0.256**</td>
<td>0.322**</td>
<td>0.107</td>
<td>0.131*</td>
<td>-0.035</td>
</tr>
<tr>
<td>Disclosure concerns</td>
<td>0.153**</td>
<td>0.247**</td>
<td>0.065</td>
<td>0.136*</td>
<td>0.030</td>
</tr>
<tr>
<td>Concern with public attitudes about people with HIV</td>
<td>0.244**</td>
<td>0.307**</td>
<td>0.092</td>
<td>0.118*</td>
<td>-0.040</td>
</tr>
<tr>
<td>Personalized stigma</td>
<td>0.234**</td>
<td>0.234**</td>
<td>0.100</td>
<td>0.129*</td>
<td>-0.070</td>
</tr>
<tr>
<td>Negative self-image</td>
<td>0.294**</td>
<td>0.370**</td>
<td>0.080</td>
<td>0.106*</td>
<td>-0.027</td>
</tr>
</tbody>
</table>

\*\(P<0.05\), \**\(P<0.01\)

### Table 3  Effect of perceived stigma on mental health and unsafe sexual behaviors

<table>
<thead>
<tr>
<th>Variables</th>
<th>(b)</th>
<th>SE</th>
<th>(t)</th>
<th>(P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>87.030</td>
<td>12.046</td>
<td>7.225</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Gender</td>
<td>-1.978</td>
<td>2.800</td>
<td>-0.706</td>
<td>0.480</td>
</tr>
<tr>
<td>Age</td>
<td>0.223</td>
<td>0.137</td>
<td>1.635</td>
<td>0.103</td>
</tr>
<tr>
<td>Educational level</td>
<td>0.915</td>
<td>1.301</td>
<td>0.703</td>
<td>0.482</td>
</tr>
<tr>
<td>Marital status</td>
<td>-1.649</td>
<td>1.606</td>
<td>-1.027</td>
<td>0.306</td>
</tr>
<tr>
<td>Family income</td>
<td>0.556</td>
<td>1.041</td>
<td>0.534</td>
<td>0.590</td>
</tr>
<tr>
<td>HIV risk factors</td>
<td>2.564</td>
<td>1.707</td>
<td>1.502</td>
<td>0.134</td>
</tr>
<tr>
<td>Fixed sexual partner</td>
<td>2.076</td>
<td>2.589</td>
<td>0.802</td>
<td>0.423</td>
</tr>
<tr>
<td>Disclosure</td>
<td>4.093</td>
<td>2.661</td>
<td>-1.538</td>
<td>0.125</td>
</tr>
<tr>
<td>Condom use</td>
<td>-1.256</td>
<td>1.411</td>
<td>-0.891</td>
<td>0.374</td>
</tr>
<tr>
<td>Depression</td>
<td>0.006</td>
<td>0.255</td>
<td>0.024</td>
<td>0.981</td>
</tr>
<tr>
<td>Anxiety</td>
<td>0.991</td>
<td>0.286</td>
<td>3.464</td>
<td>0.001</td>
</tr>
</tbody>
</table>

### 3 Discussion

In this study, the score of perceived stigma of PLWHA were 112.80±18.11. The experience of discrimination was above the average level, and it was basically consistent with Yang’s research result [14]. In China, various forms of stigma and discrimination, such as avoiding interaction, refusal to receive treatment, and involuntary disclosure, were also reported. Lee and colleagues found that half of the participants believed that punishment was an appropriate response to PLWHA, that over half (56%) were unwilling to be friends with PLWHA, that 73% of participants thought PLWHA should be isolated, and that 85% agreed that PLWHA should not take care of other people’s children [2]. The majority of PLWHA were afraid of being discriminated, isolation and losing their friends. Therefore, PLWHA often kept the diagnosis a secret, so that this self-protective behavior helped them live a so-called normal life [15]. And they wanted others in the society to treat them like a normal person [16]. In the survey, some patients said “they try not to go to the hospital where they probably meet their relatives or friends, and they also put the drugs
into a box which people commonly know.” To some extent, they successfully pretended to be “a normal man”, it can reduce the discrimination in short term.\(^{(17)}\)

In our research, 57.9% participants had depression, and 52.1% participants were suffering from anxiety. The result was higher than Kuang’s and Chandra’s studies\(^ {\text{[18]-[19]}}\), which showed that 26.8% and 35.2% had depression and anxiety, and 40% and 35.2% were experiencing mental problems. The reason why rate of mental issues was higher may be that in our research, 45.5% PLWHA infected HIV through homosexual behavior. However, in our country homosexual had not been generally accepted by the society\(^ {\text{[20]}}\), they had higher levels of psychological stress and the risk of insanity\(^ {\text{[21]}}\), more anxiety and loneliness than heterosexuals\(^ {\text{[22]}}\).

In addition, perceived stigma was an important factor which led to psychological problems. The survey results showed that perceived stigma was positively associated with anxiety and depression, which was consistent with Lee et al\(^ {\text{[23]}}\) and Nyborg et al\(^ {\text{[24]}}\). The experience of discrimination can cause emotional disorder\(^ {\text{[25]}}\) and more psychological problems than the general population\(^ {\text{[26]}}\). Compared to people whose HIV was concealable, those with visible signs of HIV had been found to have greater psychological distress, more stigma experiences, and lower self-esteem, and this pattern appears to be due at least in part to differences in social support. The regression also showed that perceived stigma had impact on mental health, especial causing anxiety and 10.7% difference could be explained by mental health. The stronger discrimination they experienced, the higher the level of anxiety they had.

In this study, the unsafe sexual behaviors included 3 aspects: fixed sexual partners, disclosure and condom use. The results showed that the total score of perceived stigma and the score of its dimensions were associated with disclosure. The patients who perceived more stigma were unlikely to disclose their HIV infection to others, which was consistent with other research. Research showed that stigma against PLWHA may increase sexual violence, people feared to be rejected and sexual violence from their partners, which may make them unlikely to tell their own disease to the partner\(^ {\text{[19]}}\). Frequent disclosure of HIV status increased the likelihood that a person would eventually experience mistreatment and discrimination by range of people. Thus, avoiding disclosure may also lessen the likelihood that an HIV-positive person experiences discrimination. Besides, the perceived stigma was not related with other aspects of unsafe sexual behaviors. The possible explanation was that discrimination experience of PLWHA can produce great pressure on them, which may cause patients difficult to deal with self-care defects and difficult to use condoms\(^ {\text{[28]}}\). Discrimination against AIDS could damage the implementation of the safe sexual behaviors\(^ {\text{[6]}}\). Similarly, the use of condoms will be difficult for partners, it can cause low rate of condom use. But on the other hand, due to past experience of stigma, PLWHA were unwilling to make their partners or spouses to be infected with HIV, so PLWHA were likely to use condoms and implement safe sexual behaviors. In the regression model, despite 2.8% difference can be explained by unsafe sexual behaviors, the final results showed that the perceived stigma had no impact on unsafe sexual behaviors.

There were limitations in this study. Firstly, cross-sectional research was used to conduct the study, and all the participants were recruited from CDC, for those who did not come to CDC, we did not know their status, so our participants may not stand for all the PLWHA completely. Secondly, the participants were asked about sexual behaviors in the last 3 months, they could not remember all the behaviors clearly. Finally, we did not collect data about the number of sexual partners and HIV statue of their partners, so the inadequate data may have impact on our results. In further research, we needed to add more variables to determine relation between the perceived stigma and unsafe sexual behaviors.

### References

8. Heckman TG, Kelly JA, Somlai AM. Predictors of continued high-risk


(Edited by PENG Minning)