



Published in final edited form as:

Community Ment Health J. 2010 February ; 46(1): 56. doi:10.1007/s10597-009-9209-4.

Perceived Mental Illness Stigma and HIV Risk Behaviors Among Adult Psychiatric Outpatients in Rio de Janeiro, Brazil

Katherine S. Elkington, PhD¹, Karen McKinnon, MA², Claudio Gruber Mann, RN³, Pamela Y. Collins, MD^{2,4}, Cheng-Shiun Leu, PhD¹, and Milton L. Wainberg, MD^{1,2}

¹ HIV Center for Clinical and Behavioral Studies, New York State Psychiatric Institute and Columbia University, New York, NY

² New York State Psychiatric Institute and Columbia University, New York, NY

³ Psychiatric Institute of the Federal University of Rio de Janeiro, Brazil

⁴ Columbia University Mailman School of Public Health, Department of Epidemiology

Abstract

We examined the associations between perceived mental illness stigma and HIV risk and protective behaviors among adults with severe mental illness (SMI) in Rio de Janeiro, Brazil. We measured mental illness stigma across three domains (“Personal Experiences,” “Perceived Attractiveness,” and “Relationship Discrimination”), and examined the relationship between experiences of stigma in each domain and HIV risk and protective behaviors over the past three months in 98 outpatients with SMI. Those who reported greater “Relationship Discrimination” stigma were significantly more likely to be sexually active and to have unprotected sex; they were significantly less likely to report deliberately having fewer partners as a way to protect themselves from HIV. The role of stigma in unprotected sexual behavior should be examined further and considered in any HIV prevention intervention for people with SMI.

Keywords

Severe mental illness; HIV sexual risk behaviors; perceived mental illness stigma; psychiatric outpatients

Worldwide, rates of HIV infection (1.9%-3.1%) are sharply elevated in most samples of people with severe mental illness (SMI) compared to the general population (Cornos & McKinnon, 1997; Rosenberg et al., 2001a), with rates as high as 23.8% among those with SMI who also are homeless and/or have a substance use disorder (Rosenberg, et al 2003a, b; Empfield et al., 1993; Silberstein et al., 1994). SMI refers to a heterogeneous group of psychiatric conditions, typically characterized by psychosis, acute or persistent in duration; functional disability; and a history of hospitalization and/or maintenance medication (McKinnon & Rosner, 2000). Studies show that 40%-70% of adults with SMI are sexually active in the past three to six months and that the majority of those who are active engage in high rates of HIV risk behaviors such as unprotected sex, sex with multiple and/or high risk partners, sex exchange, and substance use before sex (Collins, Holman, Freeman, & Patel, 2006; Meade & Sikkema, 2005; Wainberg et al., 2008;). In Brazil, rates of HIV infection (0.8%-1.6%) among adult

psychiatric patients (Almeida & Pedroso, 2004; Guimarães et al., 2008) are higher than the estimated general population rate (0.6%) (Ministry of Health of Brazil National Coordination for STD and AIDS, 2005), and people with SMI have been identified by the Ministry of Health as a population particularly vulnerable to HIV/AIDS. Studies examining sexual risk behaviors among SMI patients in Brazil found 42% to 63% were sexually active in the past three to 12 months, and of those, 72% to 83% reported unprotected sexual activity and 27% to 31% reported multiple partners (Guimarães et al., 2008; Oliveira, 1997; Wainberg et al., 2008).

Diagnosis and symptoms of mental illness, the defining characteristic of this population, have been associated with HIV risk behaviors among psychiatric samples, though inconsistently (Brunette et al., 1999; Cournos, McKinnon, Meyer-Bahlburg, Guido, & Meyer, 1993; Hanson et al., 1992; Kelly et al., 1995; Levounis, Galanter, Dermatis, Hamowy, & De Leon, 2002; McKinnon et al., 1996; Otto-Salaj & Stevenson, 2001; Rosenberg et al., 2001b). To understand the relationship between psychiatric condition and HIV risk behavior, efforts are underway to identify other factors that may contribute to HIV risk among those with SMI (Meade & Sikkema, 2005, 2007). The stigma associated with mental illness (MI stigma) has been suggested, theoretically and through direct and indirect evidence, as one such potential factor that may increase HIV risk-taking in those with SMI (Collins et al., 2008; Wainberg et al., 2007).

There is substantial evidence in the literature that, worldwide, those with SMI are rejected and discriminated against (Angermeyer & Matschinger, 1997; Guimon, Fischer, & Sartorius, 1999; Link, Struening, Rahav, Phelan, & Nuttbrock, 1997; Ohaeri & Abdullahi, 2001; Thara & Srinivasan, 2000; Villares & Sartorius, 2003). Link and Phelan (Link & Phelan, 2001) theorize that stigma occurs as a process of discrimination and rejection at individual (e.g., experiences of rejection by others) and structural (e.g., poor access to services, denial of housing, residing in poor neighborhoods) levels, and also as a result of social-psychological responses of the stigmatized individual (e.g., lost of mastery, decreased self-esteem, negative self-view). Such experiences of rejection and discrimination may impose tremendous challenges to finding partners and maintaining longer-term relationships, a tendency which ultimately could contribute to finding partners in high-risk situations (Cournos, McKinnon, & Rosner, 2001). Moreover, saddled with the label “mentally ill,” persons with SMI appear to internalize the devaluing attitudes of the society at large and view themselves as “less-than” (Link, 1987; Link, Cullen, Struening, Shrout, & Dohrenwend, 1989; Link, Cullen, Wozniak, & Wozniak, 1987). Internalized stigma and a devalued sense of self may increase the likelihood that adults with SMI become involved in relationships with an unequal power or status differential, reducing their ability to negotiate and engage in safer sex practices with partners (Wright, Gronfein, & Owens, 2000). Studies show that adults with SMI who are less assertive have more partners and are less likely to use condoms (Kelly et al., 1995; Somlai et al., 1998; Weinhardt, Carey, & Carey, 1998).

Although research has documented the negative effects of MI stigma in the work and social lives of adults with SMI, to date, only five studies have examined the role of MI stigma in the sexual lives and HIV risk behaviors of this population. Two qualitative US studies examining the social context of sexual decision-making of adults with SMI found possibly discrepant results: that sexual intimacy and relationship stability were difficult to achieve in the face of social isolation and stigma (Gordon, Carey, Carey, Maisto, & Weinhardt, 1999), which might suggest the possibility of increased risk, yet experiences of stigma were prominent reasons for sexual inactivity among a sample of sexually inactive outpatients (Wright, Wright, Perry, & Foote-Ardah, 2007), suggesting a possible “protective” effect. A third qualitative study among Latina women with SMI in the US found that stigma related to mental illness, in the context of poverty, gender discrimination, and ethnic minority status, led women to engage in sexual relationships that they experienced as disempowering and unsatisfying, and that facilitated HIV

risk behavior (Collins, von Unger, & Armbrister, 2008). Even in Brazil, where sexuality and sexual expression are an integral part of the culture, and openness about sexuality and sexual identity has helped to break down the stigma surrounding both homosexuality and HIV (Berkman, Garcia, Muñoz-Laboy, Paiva, & Parker, 2005), evidence exists that stigma about having a mental illness impinges on the sexuality of adults in psychiatric treatment. An ethnographic study of two psychiatric institutions in Brazil found that patients exhibited internalized stigma about their mental illness and believed that they were not in a position to choose partners or practice safer sex activities (Wainberg et al., 2007). Structural stigma in the form of punitive policies toward patient sexuality also was present. However, none of these studies quantitatively measured mental illness stigma or linked experiences of stigma to specific HIV sexual risk behaviors.

The only peer-reviewed study that explicitly examined stigma and sexual risk behavior found that women with SMI in the US who believed having a mental illness limited partner choice and devalued their position in a relationship were more likely to engage in sexual risk behavior compared to those who did not report such strong beliefs (Collins et al., 2008). This study did not include men nor examine the protective behaviors that those with SMI deliberately engaged in to reduce the likelihood of contracting or transmitting HIV (e.g., avoiding sex). Thus, as part of a larger study designed to examine the feasibility of conducting a randomized controlled trial of an HIV prevention intervention for patients with SMI in Brazil, we sought to examine the relationship between MI stigma and specific HIV risk and protective behaviors in order to improve our ability to promote healthy sexuality and reduce HIV and other sexual health risk behaviors among adults with SMI.

We sought to determine whether greater perceived mental illness stigma would be associated with a greater likelihood of engaging in HIV sexual risk behaviors and a lower likelihood of engaging in HIV sexual protective behaviors. Based on both theoretical and empirical prior research (Link, 1987; Collins et al., 2008), we expected that domains capturing internalized stigma would be more strongly associated with sexual risk than those capturing external manifestations of stigma.

Methods

Setting and Recruitment Procedures

Participants were adults with SMI attending the outpatient psychiatric clinic and the day treatment program of the Instituto de Psiquiatria da Universidade Federal do Rio de Janeiro (UFRJ/IPUB), a university-based public psychiatric treatment setting; patients with primary substance use disorder are not treated in these settings. Data were collected in baseline interviews conducted between October 2004 and August 2005. All study procedures were approved by Institutional Review Boards of both New York State Psychiatric Institute and UFRJ/IPUB. Patients were either self-referred or referred by their mental health care providers. There are no known conflicts of interest for any of the authors.

Participants

Participants were eligible if they were: 1) 18 years of age or older; 2) had a clinical diagnosis of schizophrenia, schizoaffective disorder, bipolar disorder, major depressive disorder (MDD) with psychotic features, or psychosis not otherwise specified; 3) not acutely suicidal; and 4) capable of giving written informed consent. After describing the study to participants, we obtained written informed consent. Patients who declined to participate or who did not meet the inclusion criteria were referred to ongoing sexual health drop-in groups that were part of the standard clinical care.

Of the 221 patients (110 females/111 males) screened, 139 who were interested and who had capacity to participate gave written informed consent. Of these, 37 were ineligible to participate due to diagnosis, or suicidal ideation; four additional participants were excluded from analyses due to responses that were rated by interviewers as unreliable. The study sample comprised the remaining 98 patients. Additional study procedure details have been published elsewhere (Wainberg et al., 2008).

Assessment Procedures and Measures

All assessments were conducted in face-to-face interviews in clinical settings where privacy and confidentiality could be assured. Interviewers were male or female clinical psychologists experienced working with the population and with issues relating to sexual health.

Mental Illness Stigma and Sexuality—The Stigma of Psychiatric Illness and Sexuality among Women (SPISEW) questionnaire (Collins et al., 2008) was used to measure mental illness stigma related to sexuality. The SPISEW was developed specifically for adult women with SMI and is based on the prior work of Link (Link, 1987). The measure assesses: 1) direct personal experiences of stigma (e.g., being called names), and also internalized stigma, or social-psychological responses to stigma, which include 2) perceived attractiveness stigma (e.g. beliefs that having a mental illness made them less attractive to others) and 3) relationship discrimination stigma (e.g., belief that having a mental illness restricts partner choice or made them less valuable romantic partners). We omitted two domains of the SPISEW which were not specific to sexuality: ethnic discrimination and general discrimination. We retained, translated into Portuguese, and back-translated into English for verification purposes the remaining three domains to measure mental illness stigma as it pertains to sexuality in Brazil. *Personal experiences of mental illness stigma*, a 6-item subscale, assesses whether or not an individual has had direct personal experiences of stigma (e.g., “Has anyone spoken badly to you because you have been a patient at a psychiatric clinic?” “Has anyone called you crazy?” “Has anyone made fun of you because you have a MI?”). Participants responded yes or no; we found adequate reliability (Cronbach $\alpha=.70$) and computed a mean composite score. High scores indicate personal experiences of stigma across numerous situations. *Perceived attractiveness*, a 4-item subscale, assesses the degree to which individuals with SMI perceive themselves as less attractive due to their mental illness (e.g., “I am an attractive man/woman” “Having a MI makes me feel less attractive” “Having a MI prevents me from attracting sexual partners”). Participants responded on a 3-point Likert-type scale (1=Disagree; 2=Undecided; 3=Agree); we found acceptable reliability (Cronbach $\alpha=.64$) and computed a mean composite score. High scores indicate strong beliefs that they themselves or others perceive them as less attractive due to having a MI. *Relationship devaluation and discrimination*, a 6-item subscale, assesses beliefs that having a mental illness restricts opportunities for romantic relationships (e.g., “Most people would be reluctant to date a person hospitalized for MI,” “People think men/women with MI are sexually undesirable,” “Most people would not marry someone with MI”). Participants responded on a 3-point Likert-type scale (1=Disagree; 2=Undecided; 3=Agree); we found adequate reliability (Cronbach $\alpha=.73$) and computed a mean composite score. High scores indicate strong beliefs that having a mental illness restricts relationship opportunities. We refer to the stigma subscales as “Personal Experiences,” “Perceived Attractiveness,” and “Relationship Discrimination.”

Psychiatric diagnosis—Psychiatric diagnosis was obtained by research team psychiatrists using the *Mini International Neuropsychiatric Interview – PLUS (MINI PLUS)*, a structured psychiatric assessment developed and validated for DSM-IV and ICD-10 diagnosis with Brazilian patients (Amorim, 2000; Sheehan et al., 1998). Four mutually exclusive diagnoses were examined for the current analysis: schizophrenia (yes/no), bipolar disorder (yes/no), MDD with psychotic features (yes/no), and other psychotic disorders (i.e. psychosis NOS,

schizoaffective disorder). Secondary or co-morbid substance use disorder diagnosis (yes/no) also was assessed using the MINI.

Suicidality—Suicidality of potential participants was determined by the suicide question of the Hamilton Depression Rating Scale (Hamilton, 1960).

Psychiatric symptoms—Psychiatric symptoms were assessed with the *Brief Psychiatric Rating Scale* (BPRS), a semi-structured clinical interview that rates 18 distinct items on 7-point scales from 1=Absent to 7=Extreme; the measure has been used with Brazilian patients with good internal consistency (Crippa, Sanches, Hallak, Loureiro, & Zuardi, 2002). For ANOVA analysis, BPRS scores were dichotomized based on clinical cut-offs (Leucht et al., 2005): ≥ 41 (moderate to marked illness severity) versus ≤ 40 (mild to moderate illness severity).

HIV Sexual Risk and Protective Behavior—Sexual risk behaviors *in the past three months* were obtained using the *Sexual Risk Behavior Assessment Schedule* (SERBAS), a structured interview eliciting number and types (e.g. high-risk) of partners, frequency of vaginal and anal sex occasions, frequency of unprotected sex occasions, frequency and type of substance used before sex, and frequency and types of sex exchange practices (exchange sex for drugs, shelter, money etc; exchange money, drugs, shelter for sex). The SERBAS has undergone adaptation and psychometric testing for use with a variety of populations, including SMI patients (McKinnon, Cournois, & Meyer-Bahlburg, 1993; Susser et al., 1998). For the current study, the SERBAS underwent cultural adaptation to encompass risk behaviors and contexts specific to the patient population in Brazil (e.g., transvestism, transgenderism, the beach as a common place to meet partners and have sex) and local sexual terms. After back-translation and language validation, test-retest reliability was established, showing excellent three-month reliability for being sexually active ($\kappa=1.0$) and fair to good agreement on frequency of anal and vaginal sex, including unprotected occasions (intra-class correlation=0.5-1.0) (Pinto, Wainberg, Linhares-Veloso, Mattos, & Meyer-Bahlburg 2007). The HIV sexual risk behaviors examined in the current study include: vaginal or anal sexual activity (yes/no); any unprotected anal or vaginal sexual occasions (yes/no); multiple sexual partners (2+) (yes/no); use of drugs or alcohol before sex activity (yes/no); and sex exchange practices (yes/no).

Finally, exploratory questions regarding participants' HIV protective behaviors (i.e. had fewer sex occasions (yes/no), had fewer partners (yes/no), made specific attempts to use condoms more frequently (yes/no) *in the past three months*) were asked to determine whether participants had engaged in behaviors deliberately as a means of reducing the risk of contracting or transmitting HIV.

Data Analysis

We conducted our analysis in three steps. We first examined differences within each of the three MI stigma subscales (Personal Experiences, Perceived Attractiveness, and Relationship Discrimination) by key demographic and clinical characteristics using t-tests and one-way ANOVA tests. The natural logarithmic transformation was used to normalize each subscale score for above tests; note that we increased the “Personal Experiences” stigma subscale score (raw range 0-1) by a constant of one unit before the log-transformation as such shift in scales avoids a possible undefined value (i.e. $\text{Log}(0)$) after transformation. We present non-transformed means in the text and Table 1 but all test statistics reflect analysis conducted on transformed mean scores. Second, we examined the association between MI stigma and HIV sexual risk and protective behaviors using multiple logistic regression. In each regression analysis, all three stigma factors were entered into the model simultaneously to examine the relative contribution of multiple domains of stigma on sexual risk and protective behaviors.

Intercorrelations between the three stigma domains ranged from $r=0.08-0.3$. Tests of multicollinearity revealed variance inflation factors (VIF) ranging between 1.01 and 1.12, suggesting that all stigma domains could be present in the same model. We also included as covariates in the model those clinical or demographic variables that might confound the relationship between stigma and sexual risk or protective behaviors in this population: gender, age, BPRS score, and presence of co-morbid substance use disorder. Third, we examined the interactions between each of the covariates significantly associated with stigma (step 1) and the three stigma domains to ascertain if the relationship between stigma and HIV risk behavior was moderated by key clinical or demographic variables.

Results

Demographic and Clinical Characteristics

Almost half (49.0%) of the sample was male, the mean age was 41.8 years (standard deviation [sd]=11.1 years), the majority was white (45.8%) and most were single (72.4%). Half of the sample (50.0%) had a diagnosis of schizophrenia, 27.6% had bipolar disorder, 10.2% had MDD with psychotic features, and 12.2% had other psychotic disorders; 11.3% had a co-morbid substance use disorder. The mean BPRS symptom score was 35.8 (sd=9.8), indicating moderate impairment. A total of 41.8% of the sample reported engaging in sexual activity and of those, 92.7% reported unprotected sex, 26.8% reported multiple partners, 19.5% reported sex exchange and 39.0% reported drug or alcohol use before sexual activity in the past three months. Approximately 14% reported engaging in increased attempts to use condoms, 30.6% of the sample reported engaging in fewer sex occasions, and 8.2% reported having fewer partners deliberately to reduce the likelihood of contracting or transmitting HIV in the past three months (Wainberg et al., 2008).

Stigma

The mean (sd) scores on the stigma subscales were: Personal Experiences, 1.62 (0.31); Perceived Attractiveness, 1.69 (0.63); and Relationship Discrimination, 2.23 (0.60). There were no significant differences between mean scores on the stigma subscales, indicating that no particular type of stigma was more frequently reported or experienced. Table 1 presents mean scores of all three stigma domains by demographic and clinical characteristics. Having a BPRS score ≥ 41 ($t=2.41$; $df=96$, $p<0.05$) was associated with greater scores on the Personal Experiences stigma subscale. Being male ($t=2.04$; $df=96$, $p<0.05$) and having a BPRS score ≥ 41 ($t=3.36$; $df=96$, $p<0.01$) was significantly associated with greater scores on Perceived Attractiveness stigma subscale (indicating perceived unattractiveness). There were no other differences.

Stigma and HIV Risk and Protective Behaviors

Table 2 presents the adjusted odds ratios for the associations of the three stigma subscales with sexual activity and HIV sexual risk and protective behaviors. Each one-point increase in score on the Relationship Discrimination subscale, indicating greater experience of stigma in that domain, significantly increased the odds of engaging in sexual activity (Adjusted Odds Ratio [AOR]=3.65; 95% Confidence Interval [CI]=1.42-9.36, $p<0.01$), and unprotected sex (AOR=2.55; 95% CI=1.11-5.87, $p<0.05$). Those with higher scores on the Relationship Discrimination subscale were significantly less likely than those with lower scores to report having fewer partners (AOR=0.25; 95% CI=0.07-0.91, $p<0.05$) as a deliberate method of protecting oneself or others against HIV. Personal Experiences stigma and Perceived Attractiveness stigma were not significantly associated with any measured risk or protective behavior. We found no interaction effects of gender, BPRS score, and co-morbid substance use disorder by any of the three stigma domains for either sexual risk or protective behaviors.

Discussion

This study demonstrates that men and women with SMI in Brazil experience stigma across multiple domains, and that certain of these experiences are associated with an increased likelihood of engaging in sexual activity and unprotected sexual behavior that place them at risk for acquiring or transmitting HIV. Participants reported experiences of direct stigmatization such as being called names or being treated badly due to having a mental illness (“Personal Experiences”), in combination with more internalized stigma experiences such as beliefs that individuals with SMI are less sexually and physically attractive (“Perceived Attractiveness”) and that having a mental illness restricts opportunities for romantic relationships (“Relationship Discrimination”).

Psychiatric patients with a BPRS score that indicated greater symptom severity reported greater Personal Experiences and Perceived Attractiveness stigma. This may suggest that greater symptom severity is noticeable to others and thus results in greater discrimination and rejection, which in turn is internalized by both men and women who consider themselves less attractive to potential romantic/sexual partners. Future research on the type, severity, and temporality of specific psychiatric symptoms' severity and their relationship to stigma and HIV risk/protective behaviors is needed.

After accounting for differences in BPRS score and other key covariates, we found that individuals with SMI who held stronger beliefs that having a mental illness restricted their opportunities in relationships (i.e. Relationship Discrimination stigma) were more likely to be sexually active and to engage in unprotected sexual activity. Those with greater Relationship Discrimination stigma may be more likely to engage in sexual activity as a method of obtaining and maintaining a relationship, and may be less willing or able to negotiate use of condoms with their partners. We also found that those with greater Relationship Discrimination stigma were *less likely* to decrease their number of partners to reduce the risk of HIV transmission. These findings replicate and extend the work of Collins et al. (2008), who found relationship stigma to be associated with sexual risk behaviors for women with SMI in the US.

Although the cultural milieu in Brazil is generally perceived to be more open about sexual matters, our study shows that mental illness stigma nevertheless is a common experience among people with SMI in Brazil, and that sexual risk taking among SMI in Brazil is associated with at least some aspects of this stigma. Further, the associations between stigma and sexual risk do not appear to be dramatically different between Brazilian men and women with SMI and US women with SMI (Collins et al., 2008), though findings from only two studies clearly are suggestive rather than definitive.

What our findings suggest is that adults with SMI do internalize the pejorative or discriminating attitudes of the broader society in ways that color how they perceive their ability to enter into romantic or sexual relationships. And it is this internalized stigma as opposed to more direct experiences of stigma and rejection (e.g., name calling) that has an association with HIV risk behavior. Faced with the difficult prospect of finding a romantic or sexual partner due to both societal and internalized stigma, individuals with SMI may place a premium on engaging in and maintaining risky sexual relationships as a method of avoiding social isolation and as a way of achieving social status or a sense of belonging.

We failed to find evidence that greater experiences of stigma are associated with decreased likelihood of engaging in sexual activity, a finding which contrasts with qualitative studies conducted in the US (Wright et al., 2007) that identified rejection and stigma as prominent reasons for abstaining from sexual activity. This difference may be a result of the current sample comprising both sexually active *and* inactive participants and our use of quantitative methods; Wright et al. (2007) qualitatively interviewed non-sexually active participants only. Our sample

size lacked sufficient power to examine whether experiences of stigma differed between those who were sexually inactive, those who were sexually active and did not engage in any sexual risk behavior, and those who engaged in sexual risk. We strongly urge future studies of the effects of mental illness stigma on sexual behaviors to include sexually inactive as well as sexually active people with SMI in order to deepen our understanding of the stability of these factors over time. In addition, it is critical that research into sexual behaviors elicits not only behaviors that increase HIV risk but those practices that people engage in deliberately to avoid contracting or transmitting HIV, as both must be addressed effectively in any intervention.

Study Limitations

Our data relating to sexual activity and stigma were based on self-reports and are therefore subject to response bias, although we used sexual behavior measures with documented test–retest reliability among persons with SMI (Pinto et al., 2007). Results from the current study may not generalize to adults with SMI who do not receive psychiatric treatment, those with higher levels of functioning, and/or those who do not reside in Brazil. We also assessed stigma using an adapted measure developed initially for adults with SMI in the US, and use of these measures elsewhere will require further adaptation and refinement to increase specificity for the target population. As the data are cross-sectional, the current study is unable to reveal underlying causal or temporal relationships between stigma and sexual behavior. Finally, the lack of findings in differences by gender and other key demographic variables in the association between sexual risk behaviors and stigma may have been due to a lack of statistical power; additional studies are needed to address the role of these variables, including understanding whether and how gender plays a role in the association between MI stigma and sexual risk behavior.

Despite these limitations, this study provides important information for HIV intervention and clinical practice and highlights areas for further research. HIV prevention interventions for those with SMI that focus on increasing skills such as condom negotiation may be enhanced if they also address the internalized devaluation of “the mentally-ill self” as an unworthy romantic and sexual partner. Targeting and altering beliefs that one “cannot chose, but must be chosen” (Wainberg et al., 2007) may increase self-efficacy, the foundation upon which stronger negotiation skills can be developed.

We identified an important link between Relationship Discrimination stigma and HIV risk and protective behaviors. Greater understanding of the pathways through which mental illness stigma impacts decreased self-esteem, mastery and quality of life (Link, Struening, Neese-Todd, Asmussen, & Phelan, 2001; Rosenfield, 1997; Wright et al., 2000), and impairment in social functioning (Perlick et al., 2001), which may, in turn, increase risk behaviors and reduce protective behaviors may improve our ability to provide effective HIV prevention interventions to people with SMI. Although this study represents an important first step, we did not find an association between other domains of stigma and HIV risk and protective behaviors, a finding that may be a function of measurement error. Further refinement of a MI stigma instrument that assesses experiences of stigma in multiple domains related to sexuality and sexual behavior is needed to broaden our understanding of the relative impact of psychiatric symptoms, side effects of psychiatric medications, and treatment system factors that may mediate or moderate the relationship between stigma and HIV risk behaviors.

Conclusions

The current study fills an important gap in the literature about the potential impact of MI stigma on sexual behavior in a population particularly affected by HIV worldwide. Feeling devalued and believing that having a mental illness restricts opportunities for romantic/sexual relationships appears to increase the likelihood of engaging in certain risk behaviors among

people with SMI. HIV prevention interventions for those with SMI must address the experiences of specific types of MI stigma as it pertains to sexuality and sexual activity. However, to reduce MI stigma and HIV risk among those with SMI, it will not be sufficient to intervene only with patients. We found that HIV-related behaviors among adults with SMI who are outpatients in Rio de Janeiro, Brazil are prevalent among those with both direct experiences of MI stigma and internalized beliefs about mental illness and sexuality. Sources of stigma are likely to be many, and may include providers (Wainberg et al., 2007). Increasing provider comfort and skills in addressing patient sexuality and HIV risk, and also in reducing stigmatizing beliefs concerning patients' right to have and expect a healthy sexuality also is necessary. Continued education must occur so that mental health and other health care providers, as well as the larger society, are aware of the negative outcomes of MI stigma that may impinge upon not only the quality of relationships of people with SMI, but also upon their health and longevity.

Acknowledgments

This research was supported by Grant R01 MH65163 (Milton L. Wainberg, M.D.) from the National Institute of Mental Health and a center grant from the National Institute of Mental Health to the HIV Center for Clinical and Behavioral Studies at NY State Psychiatric Institute and Columbia University (P30-MH43520; Principal Investigator: Anke A. Ehrhardt, Ph.D.). The authors gratefully acknowledge the enormous contributions made to the PRISSMA Project by people receiving care at IPUB and PINEL and by mental health care providers and other staff at these institutions. PRISSMA team members: Paulo Mattos, Suely Oliveira, Diana Pinto, Denise Feijó, Tatiana Dutra, Carlos Linhares, Alfredo Gonzalez, André Nunes, Fernanda Gomes, Abmael de Sousa Alves, Alexander Ramalho, Débora Salles, Denise Corrêa, Erínia Belchior, Márcia Silviano, Maria Tavares, Vandrê Matias Vidal. Dr. Elkington was also supported by a NRSA grant T32 MH19139, Behavioral Sciences Research in HIV Infection, Anke A. Ehrhardt, PhD, Program Director.

References

- Almeida R, Pedroso E. Vulnerabilidade e exposição a marcadores sorológicos dos vírus da imunodeficiência humana, hepatites B e C, vírus linfotrópico de células t humanas e sífilis em pacientes psiquiátricos internados em hospital público. *Revista Médica de Minas Gerais* 2004;14:244–250.
- Amorim P. Mini International Neuropsychiatric Interview (MINI): Validation of a short structured diagnostic psychiatric interview. *Revista Brasileira de Psiquiatria* 2000;22:106–115.
- Angermeyer MC, Matschinger D. Social distance towards the mentally ill: Results of representative surveys in the Federal Republic of Germany. *Psychological Medicine* 1997;27:131–141. [PubMed: 9122293]
- Berkman A, Garcia J, Muñoz-Laboy M, Paiva V, Parker R. A critical analysis of the Brazilian response to HIV/AIDS: Lessons learned for controlling and mitigating the epidemic in developing countries. *American Journal of Public Health* 2005;95:1163.
- Brunette MF, Rosenberg SD, Goodman LA, Mueser KT, Osher FC, Vidaver RM, et al. HIV Risk Factors among People with Severe Mental Illness in Urban and Rural Areas. *Psychiatric Services* 1999;50(4): 556–558. [PubMed: 10211741]
- Collins PY, Elkington KS, von Unger H, Sweetland A, Wright ER, Zybert P. The relationship of stigma to HIV risk behavior among women with severe mental illness. *Journal of Orthopsychiatry* 2008;78:498–506.
- Collins PY, Holman AR, Freeman MC, Patel V. What is the relevance of mental health to HIV/AIDS care and treatment programs in developing countries? A systematic review. *AIDS* 2006;20:1571–1582. [PubMed: 16868437]
- Collins PY, von Unger H, Armbrister A. Church ladies, good girls, and locas: Stigma and the intersection of ethnicity, gender, mental illness, and sexuality. *Social Science & Medicine* 2008;67:389–397. [PubMed: 18423828]
- Cournos F, McKinnon K. HIV Seroprevalence among People with Severe Mental Illness in the United States: A Critical Review. *Clinical Psychology Review* 1997;17:259–269. [PubMed: 9160176]

- Cournos F, McKinnon K, Meyer-Bahlburg H, Guido JR, Meyer I. HIV risk activity among persons with severe mental illness: Preliminary findings. *Hospital Community Psychiatry* 1993;44:1104–1106. [PubMed: 8288184]
- Cournos F, McKinnon K, Rosner J. HIV among individuals with severe mental illness. *Psychiatric Annals* 2001;31:50–56.
- Crippa JAS, Sanches RF, Hallak JEC, Loureiro SR, Zuairi AW. Factor structure of Bech's version of the Brief Psychiatric Rating Scale in Brazilian patients. *Brazilian Journal of Medical and Biological Research* 2002;35:1209–1213. [PubMed: 12424494]
- Empfield M, Cournos F, Meyer I, McKinnon K, Horwath E, Silver M, et al. HIV seroprevalence among homeless patients admitted to a psychiatric inpatient unit. *American Journal of Psychiatry* 1993;150:47–52. [PubMed: 8417579]
- Gordon CM, Carey MP, Carey KB, Maisto SA, Weinhardt LS. Understanding HIV-related risk among persons with a severe and persistent mental illness: Insights from qualitative inquiry. *Journal of Nervous and Mental Disease* 1999;187:208–216. [PubMed: 10221553]
- Guimarães, MDC.; Acurcio, FA.; Campos, LN.; Melo, APS.; Cherchiglia, ML.; Carmo, RA., et al. *Prevenção e atenção às IST/AIDS na saúde mental no Brasil: Análises, desafios e perspectivas*. Brasília: Ministério da Saúde, Secretaria de Vigilância em Saúde, Programa Nacional de DST e AIDS; 2008.
- Guimon, J.; Fischer, W.; Sartorius, N., editors. *The image of madness: The public facing mental illness and psychiatric treatment*. Basel, Switzerland: Karger; 1999.
- Hamilton M. A rating scale for depression. *Journal of Neurology, Neurosurgery and Psychiatry* 1960;23:56–62.
- Hanson M, Kramer TH, Gross W, Quintana J, Ping-Wu L, Asher R. AIDS awareness and risk behaviors among dually disordered adults. *AIDS Education and Prevention* 1992;4:41–51. [PubMed: 1543643]
- Kelly JA, Murphy DA, Sikkema KJ, Somlai AM, Mulry GW, Fernandez MI, et al. Predictors of high and low levels of HIV risk behavior among adults with chronic mental illness. *Psychiatric Services* 1995;46:813–818. [PubMed: 7583483]
- Leucht S, Kane JM, Kissling W, Hamann J, Etschel E, Engel R. Clinical implications of Brief Psychiatric Rating Scale scores. *British Journal of Psychiatry* 2005;187:366–371. [PubMed: 16199797]
- Levounis P, Galanter M, Dermatis H, Hamowy A, De Leon G. Correlates of HIV Transmission Risk Factors and Considerations for Interventions in Homeless Chemically Addicted and Mentally Ill Patients. *Journal of Addictive Diseases* 2002;21(3):61–72. [PubMed: 12095000]
- Link BG. Understanding labeling effects in the area of mental disorders: An assessment of the effects of expectations of rejection. *American Sociological Review* 1987;52:96–112.
- Link BG, Cullen FT, Struening E, Shrout PE, Dohrenwend BP. A modified label theory approach to mental disorders: An empirical assessment. *American Sociological Review* 1989;54:400–423.
- Link BG, Cullen FT, Wozniak JF, Wozniak JF. The social rejection of former mental patients: Understanding why labels matter. *American Journal of Sociology* 1987;91:1461–1500.
- Link BG, Phelan JC. Conceptualizing stigma. *Annual Review of Sociology* 2001;27:363–385.
- Link B, Struening E, Neese-Todd S, Asmussen S, Phelan J. The consequences of stigma for the self-esteem of people with mental illnesses. *Psychiatric Services* 2001;52:1621–1626. [PubMed: 11726753]
- Link B, Struening E, Rahav M, Phelan J, Nuttbrock L. On stigma and its consequences: Evidence from a longitudinal study with dual diagnoses of mental illness and substance abuse. *Journal of Health and Social Behavior* 1997;38:177–190. [PubMed: 9212538]
- McKinnon K, Cournos F, Meyer-Bahlburg H. Reliability of sexual risk behavior interviews with psychiatric patients. *American Journal of Psychiatry* 1993;150:972–974. [PubMed: 8494081]
- McKinnon K, Cournos F, Sugden R, Guido JR, Herman R. The relative contributions of psychiatric symptoms and AIDS knowledge to HIV risk behaviors among people with severe mental illness. *Journal of Clinical Psychiatry* 1996;57:506–513. [PubMed: 8968298]
- McKinnon K, Rosner J. Severe mental illness and HIV/AIDS. *New Directions in Mental Health Services* 2000;87:69–76.
- Meade CS, Sikkema KJ. HIV risk behavior among adults with severe mental illness: A systematic review. *Clinical Psychology Review* 2005;25:433–457. [PubMed: 15914265]

- Meade CS, Sikkema KJ. Psychiatric and psychosocial correlates of sexual risk behavior among adults with severe mental illness. *Community Mental Health Journal* 2007;43:153–169. [PubMed: 17143728]
- Ministry of Health of Brazil National Coordination for STD and AIDS. *Epidemiologic Newsletter – AIDS and STD, Year II, n. 1 - 01^a - 26^a*. Brasília. 2005. Retrieved July 23, 2006, from <http://www.aids.gov.br/main.asp?View={COA0AADB-861D-4F1D-B7ECA15D14B530DB}>
- Ohaeri JU, Abdullahi A. The opinion of caregivers on aspects of schizophrenia and major affective disorders in a Nigerian setting. *Social Psychiatry and Psychiatric Epidemiology* 2001;36:403–409.
- Oliveira, S. Avaliação do comportamento sexual, conhecimentos e atitudes sobre Aids, dos pacientes internados no instituto de psiquiatria da UFRJ. In: Venâncio, AT.; Erotildes, ML.; Delgado, PG., editors. *O Campo da atenção psicossocial*. Rio de Janeiro: Te Corá Ed; 1997.
- Otto-Salaj LL, Stevenson LY. Influence of psychiatric diagnoses and symptoms on HIV risk behavior in adults with serious mental illness. *AIDS Reader* 2001;11:197–204. 206–208. [PubMed: 11392677]
- Perlick DA, Rosenheck RA, Clarkin JF, Sirey JA, Salah J, Struening EL, et al. Adverse effects of perceived stigma on social adaptation of persons diagnosed with bipolar affective disorder. *Psychiatric Services* 2001;52:1627–1632. [PubMed: 11726754]
- Pinto D, Wainberg ML, Linhares Veloso C, Mattos PE, Meyer-Bahlburg HF. Sexual Risk Behavior Assessment Schedule for Adults (SERBAS): Translation and cross-cultural adaptation into Brazilian Portuguese. Tradução e adaptação transcultural para o Português Brasileiro. *Revista de Psiquiatria do Rio Grande do Sul* 2007;29:205–211.
- Rosenberg KP, Bleiberg KL, Kosci J, Gross C. A survey of sexual side effects among severely mentally ill patients taking psychotropic medications: Impact on compliance. *Journal of Sex & Marital Therapy* 2003a;29:289–296. [PubMed: 14504017]
- Rosenberg SD, Goodman LA, Osher FC, Swartz MS, Essock SM, Butterfield MI, et al. Prevalence of HIV, Hepatitis B, and Hepatitis C in People with Severe Mental Illness. *American Journal of Public Health* 2001a;91(1):31–37. [PubMed: 11189820]
- Rosenberg SD, Swanson JW, Wolford GI, Swartz MS, Essock SM, Butterfield M, et al. The fivesite health and risk study of blood-borne infections among persons with severe mental illness. *Psychiatric Services* 2003b;54:827–835. [PubMed: 12773596]
- Rosenberg SD, Trumbetta SL, Meuser LA, Goodman LA, Osher FC, Vidaver RM, et al. Determinants of Risk Behavior for Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome in People with Severe Mental Illness. *Comprehensive Psychiatry* 2001b;42(4):263–271. [PubMed: 11458300]
- Rosenfield S. Labeling mental illness: The effects of received services and perceived stigma on life satisfaction. *American Sociological Review* 1997;62:660–672.
- Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E, et al. The Mini-International Neuropsychiatric Interview (MINI): The development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *Journal of Clinical Psychiatry* 1998;59:22–33. [PubMed: 9881538]
- Silberstein C, Galanter M, Marmor M, Lifshutz H, Krasinski K, Franco H. HIV-1 among inner city dually diagnosed inpatients. *American Journal of Drug and Alcohol Abuse* 1994;20:101–114. [PubMed: 8192129]
- Somlai AM, Kelly JA, McAuliffe TL, Gudmundson JL, Murphy DA, Sikkema KJ, et al. Role play assessments of sexual assertiveness skills: Relationships with HIV/AIDS sexual risk behavior practices. *AIDS and Behavior* 1998;2:319–327.
- Susser E, Valencia E, Berkman A, Sohler N, Conover S, Torres J, et al. Human immunodeficiency virus sexual risk reduction in homeless men with mental illness. *Archives of General Psychiatry* 1998;55:266–272. [PubMed: 9510221]
- Thara R, Srinivasan TN. How stigmatizing is schizophrenia in India? *International Journal of Social Psychiatry* 2000;46:135–141. [PubMed: 10950361]
- Villares CC, Sartorius N. Challenging the stigma of schizophrenia. *Revista Brasileira de Psiquiatria* 2003;25:1–2. [PubMed: 12975671]

- Wainberg M, Gonzalez M, McKinnon K, Elkington K, Pinto D, Mann C, et al. Targeted ethnography as a critical step to inform cultural adaptations of HIV prevention interventions for adults with severe mental illness. *Social Science and Medicine* 2007;65:296–308. [PubMed: 17475382]
- Wainberg ML, McKinnon K, Elkington KS, Gruber CM, Mattos P, Pinto D, et al. HIV risk and protective behaviors among outpatients with severe mental illness in Rio de Janeiro, Brazil. *World Psychiatry* 2008;7:166–172. [PubMed: 18836542]
- Weinhardt LS, Carey MP, Carey KB. HIV-risk behavior and the public health context of HIV/AIDS among women living with severe mental illness and persistent mental illness. *Journal of Nervous Disease and Mental Illness* 1998;186:276–282.
- Wright ER, Gronfein WP, Owens TJ. Deinstitutionalization, social rejection, and the self-esteem of former mental patients. *Journal of Health and Social Behavior* 2000;41:68–90. [PubMed: 10750323]
- Wright ER, Wright DE, Perry BL, Foote-Ardah CE. Stigma and the sexual isolation of people with serious mental illness. *Social Problems* 2007;54:78–98.

Table 1
Mean (standard deviation) stigma domain scores by demographic and clinical characteristics (n=98)

	Stigma Domains						
	N (%) ^a	Mean (range 1-2)	(sd)	Mean (range 1-3)	(sd)	Mean (range 1-3)	(sd)
All	98 (100)	1.62	0.31	1.69	0.63	2.23	0.60
<i>Gender</i>							
Male	48 (49.0)	1.60	0.28	1.83 ^b	0.67	2.31	0.54
Female	50 (51.0)	1.64	0.33	1.57 ^b	0.56	2.16	0.66
<i>Age</i>							
18-35 years	32 (32.7)	1.57	0.32	1.66	0.66	2.20	0.70
36-46 years	34 (34.7)	1.63	0.29	1.63	0.56	2.23	0.57
47-70 years	32 (32.7)	1.65	0.31	1.80	0.67	2.28	0.55
<i>Race/ethnicity</i>							
Black	16 (16.3)	1.68	0.27	1.95	0.74	2.42	0.61
White	45 (45.9)	1.64	0.30	1.71	0.69	2.20	0.59
Multi-racial	37 (37.8)	1.56	0.33	1.57	0.46	2.20	0.62
<i>Diagnosis</i>							
Schizophrenia	49 (50.0)	1.57	0.32	1.83	0.64	2.25	0.61
Bipolar Disorder	27 (27.6)	1.65	0.30	1.54	0.59	2.20	0.67
MDD w/psychotic features	10 (10.2)	1.65	0.33	1.68	0.51	2.20	0.53
Other Psychotic Disorders	12 (12.2)	1.71	0.29	1.52	0.69	2.28	0.57
<i>Comorbid substance use disorder</i>							
Comorbid substance use disorder	11 (11.2)	1.79 ^b	0.31	1.66	0.69	2.08	0.58
No comorbid drug use disorder	86 (87.8)	1.59 ^b	0.30	1.69	0.63	2.26	0.61
<i>Marital Status</i>							
Single	71 (72.4)	1.62	0.31	1.73	0.65	2.22	0.60
Married/longterm relationship	13 (13.3)	1.62	0.26	1.63	0.45	2.37	0.60

		Stigma Domains						
		Personal Experience (range 1-2)		Attractiveness (range 1-3)		Relationship (range 1-3)		
		N (%) ^a	Mean	(sd)	Mean	(sd)	Mean	(sd)
Separated/divorced/Widowed		14 (14.3)	1.63	0.36	1.59	0.67	2.18	0.69
<i>BPRS score</i> ^c								
BPRS ≥ 41		67 (68.4)	1.57 ^b	0.30	1.55 ^b	0.55	2.21	0.62
BPRS ≤ 40		31 (31.6)	1.73 ^b	0.28	2.01 ^b	0.68	2.28	0.57

^a Percents do not total to 100 due to missing data or rounding error

^b Means with similar superscripts are significantly different from each at p<0.05.

^c Score greater than 40 on BPRS indicates severe symptoms

Table 2
Relationship between HIV sexual risk and protective behaviors and stigma (n=98)

Behaviors	Stigma Domains						
	Personal Experiences			Attractiveness			Relationship
	AOR ^a	95% CI	AOR ^a	95% CI	AOR ^a	95% CI	
Risk Behaviors							
Sexually active	1.14	0.19-6.95	0.63	0.26-1.55	3.65	1.42-9.36**	
Unprotected sex	0.93	0.17-5.10	0.98	0.43-2.22	2.55	1.11-5.87*	
Multiple partners	0.29	0.01-6.23	1.31	0.38-4.53	0.91	0.25-3.29	
Alcohol or drug use before sex	0.66	0.08-5.86	1.63	0.58-4.55	1.30	0.47-3.60	
Any sex exchange	1.89	0.57-62.45	3.21	0.73-14.12	0.90	0.16-5.20	
Protective Behaviors							
Fewer sex occasions	2.40	0.50-11.56	0.98	0.45-2.13	1.18	0.54-2.58	
Had fewer partners	4.76	0.36-62.25	1.68	0.50-5.66	0.25	0.07-0.91*	
Specific attempts to use more condoms	0.56	0.11-2.91	0.84	0.36-1.96	0.94	0.43-2.05	

^a Adjusted for gender, age, BPRS score, comorbid substance use disorder, and remaining stigma domains

* p<0.05

** p<0.01

AOR=Adjusted Odds Ratio CI=Confidence interval