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What is the Role of the Community? Examining Minority Stress Processes among Gay and Bisexual Men

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What is the Role of the Community?

Examining Minority Stress Processes among Gay and Bisexual Men

by

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Abstract

Gay and bisexual men suffer from higher rates of mental health disorders than their heterosexual counterparts. Minority stress theory provides the framework for much research that seeks to explain this discrepancy. More recently, several studies have also examined the role of connection with the gay community and have demonstrated conflicting outcomes. Operationalizing gay community connectedness in terms of 2 separate measures, this study examines and compares the role that each of these factors plays in affecting gay and bisexual men's mental health. Three hundred and seventy-one gay and bisexual men in New York City filled out surveys that included measures of minority stress factors, gay community connectedness, and mental health outcomes. Factor analysis showed that the community connectedness scale loaded onto 2 sub-factors, community identification and community involvement. Linear regression models adjusting for potential confounding factors showed that community involvement was a significant predictor of improved mental health outcomes as was the interaction between community involvement and internalized homonegativity. Among men with low to moderate internalized homonegativity, those with greater community involvement had better mental health outcomes; however among those with high levels of internalized negativity there was no significant difference in mental health outcomes between men with differing levels of community involvement. Future research would benefit from developing an updated and highly reliable measure of community involvement.

Community, Identity, and Social Support:

Community Connectedness and Mental Health among Gay and Bisexual Men

A significant body of research has demonstrated a higher prevalence of mental health symptoms among the gay and bisexual men than among heterosexuals (Cochran, 2001; Fergusson, Horwood, Ridder, & Beautrais, 2005; Meyer, 2013; Pakula, Shoveller, Ratner, & Carpiano, 2016). According to Meyer (2013), evidence has accumulated over the past two decades establishing this difference in prevalence due to improved methodology in studies of psychiatric epidemiology. For example, several large-scale survey-based studies demonstrated that participants who reported a history of same-sex sexual behavior were at higher risk for mental disorders (Cochran, 2001). Additionally, studies that defined sexual identity according to self-identification and composite measures presented similar results. Results from a large scale cross-sectional survey conducted in Canada showed that self-identified gay men were 2.5 times as likely to report having an anxiety disorder and 2.9 times as likely to report both an anxiety and mood disorder as their heterosexual counterparts; in both cases, these rates were higher for gay men than lesbians (Pakula, Shoveller, et al., 2016). A large-scale study based in New Zealand yielded similar results defining sexual identity in terms of a composite measure of self-identification, reported sexual behavior, and reported feelings of attraction (Fergusson et al., 2005). This paper will draw on minority stress theory to examine some of the factors affecting the mental health of gay and bisexual men, focusing on the interaction between minority stress factors and community connectedness.

Minority Stress Theory

Minority stress theory (Meyer, 1995) provides the theoretical framework for much of the literature aimed at explaining and documenting the causes behind the higher rate of mental health

disorders among gay and bisexual men. This theory elaborates on social stress theory, which

posits that the impact of stress on mental health cannot be understood in terms of isolated events

affecting individuals but must also consider the contexts and patterns of these events over time

(Pearlin, 1989). These contexts and patterns are largely determined by social conditions, which

are in turn determined by social structures including stratification—that is, the segmentation of a

general population into social classes arranged hierarchically, including race/ethnicity, gender,

and sexuality. Thus, minority stress refers to the additional stress experienced by members of a

particular social class that occupies a marginalized or oppressed position due to the associated

harmful social conditions. Minority stress theory conceptualizes the processes by which social

conditions that are specific to the minority position negatively impact mental health.

Minority stress theory identifies different forms of stigma, society's negative regard

toward a minority group, that serve as stressors (Herek, 2007). Some of these stressors,

categorized as distal, are objective and external to the affected individuals. Others are considered

proximal stressors, meaning that rely on perception and appraisals specific to the individual

(Meyer, 2013). One such distal stressor is enacted sigma, which takes the form of harmful

behaviors such as discrimination, harassment, and violence. By contrast, internalized stigma is a

proximal stressor that involves individuals incorporating societal negative regard toward sexual

minorities into their own values and self-perception. While enacted and internalized stigma are

not the only types of minority stressors identified in the literature, this paper will focus on these

factors since there is extensive research documenting their negative impact on mental health

(Feinstein, Goldfried, & Davila, 2012; Hatzenbuehler, 2009; Igartua, Gill, & Montoro, 2003;

Newcomb & Mustanski, 2010; Pachankis, Rendina, et al., 2015; Pascoe & Richman, 2009).

Research on the gay and bisexual men has demonstrated significant evidence of the negative impact of enacted stigma in the form of sexual orientation discrimination in this context (Feinstein et al., 2012; Huebner, Rebchook, & Kegeles, 2004; Moody, Parsons, & Grov, 2017; Pachankis, Rendina, et al., 2015). Comprehensive meta-analyses have documented the negative impact of sexual orientation discrimination on both mental and physical health (Pascoe & Richman, 2009). Further, as the study of minority stress among gay men and the LGB population at large progressed, some work has highlighted this factor as holding particular theoretical significance in relation to other minority stress factors such as anticipated and enacted stigma. Building on the work of Meyer, Hatzenbuehler (2009) developed a more complex conceptual framework for understanding how minority stress impacts mental health among gay men, incorporating work on general psychological processes with the conceptualization of group-specific factors proposed by Meyer. This model highlighted the causal relevance of discrimination as a distal factor which serves as an antecedent to other, proximal factors which ultimately impact mental health. Some work applied this framework by testing models in which these proximal factors serve as mediators in the relationship between sexual orientation discrimination and mental health. For example, two recent studies used path analysis to examine how sexual orientation discrimination functioned as an antecedent to other psychological factors such as internalized stigma, anticipated stigma (another type of minority stressor), and emotion dysregulation and how these in turn correlated with mental health outcomes operationalized as depressive and social anxiety symptoms (Feinstein et al., 2012; Pachankis, Rendina, et al., 2015). Because the literature offers significant support for the negative effects of sexual orientation discrimination, this paper will specifically examine this factor.

Additionally, a great deal of research has specifically focused on the link between internalized stigma and mental health among gay and bisexual men, often referred to as internalized homonegativity (Igartua et al., 2003; Longares, Escartín, & Rodríguez-Carballeira, 2016; McLaren, 2016; Newcomb & Mustanski, 2010; Perez, 2016; Soo Hoong Yean, 2017). For example, Igartua et al. (2003) demonstrated that internalized homonegativity predicted scores on Beck's inventories for depression and anxiety. McLaren (2016) demonstrated that internalized homonegativity was associated with both depressive symptoms and suicidal ideation. Further, in a meta-analysis, Newcomb and Mustanski (2010) found a significant overall effect for the association between internalized homonegativity and mental health even when utilizing a strict conceptualization of mental health outcomes based on symptomology of depression and anxiety. Other work has emphasized the importance of addressing internalized homonegativity in psychotherapy with gay men (Malyon, 1993; Millar, Wang, & Pachankis, 2016). Because the literature offers significant evidence of the negative effects of internalized homonegativity, this paper will also focus on this factor.

In addition to describing the processes by which social conditions negatively impact minorities, minority stress theory also has also identified factors that can moderate or ameliorate the effects of these stressors. Synthesizing previous theoretical work and citing examples from empirical research, Meyer (2013) described how identifying with a minority group could moderate minority stress processes. Historical accounts of the establishment of gay and lesbian identities and communities have demonstrated how this process helped counteract the negative effects of stigma (D'Emilio, 1998). Further, empirical evidence has shown how minority identity itself can be a stress-ameliorating factor; for example, Branscombe, Schmitt, and Harvey (1999) demonstrated an association between minority group identification and the dual outcomes of

increased self-esteem and decreased negative emotions. Further, other studies have suggested

that minority identity could lead to stronger connections with the minority community which

positively impacted self-esteem by both altering self-perceptions and increasing social support

(Hershberger & D'Augelli, 1995; Ramirez-Valles, Fergus, Reisen, Poppen, & Zea, 2005).

Ramirez-Valles et al. (2005) found evidence that involvement with HIV and LBGT community

organizations buffered the negative impact of stigma on self-esteem, depression, and feelings of

loneliness among men who have sex with men. Other work demonstrated an association between

social support and improved mental health among gay men (Bartoshuk, 2009; Lyons, Pitts, &

Grierson, 2013; Perez, 2016; Sattler, Wagner, & Christiansen, 2016). Thus, identification and

contact with a minority community have emerged as stress-ameliorating factors and moderators

of minority stress processes in the literature.

In recent years, several studies have specifically examined the role that of connection

with gay community in the lives of gay and bisexual men, both as an independent factor affecting

mental health, and in relation to minority stress processes (Davids, Watson, Nilsson, &

Marszalek, 2015; Kousari-Rad & McLaren, 2013; Lelutiu-Weinberger et al., 2013b; Morris,

McLaren, McLachlan, & Jenkins, 2015; Pakula, Carpiano, et al., 2016; Puckett, Levitt, Horne, &

Hayes-Skelton, 2015; Reed & Miller, 2016). These studies yielded conflicting results as to

whether community connectedness ameliorates or exacerbates the effects of minority stress.

Further, examining these studies revealed a distinction between two ways of conceptualizing and

operationalizing community connectedness: either in terms of perceived role and relationship to

the community or in terms of reported participation in community activities and spaces. For

example Davids et al. (2015) explicitly distinguished between these different conceptualizations,

using separate scales for each. While this study did not examine minority stress or mental health

outcomes, several others that used similar conceptualizations of community connectedness examined these factors. In examining the effects of community connectedness, this paper will distinguish between these two dimensions, identifying them as community identification and community involvement.

The distinction between these two factors was also apparent in other recent studies many of which specifically focused on gay community identification. Kousari-Rad and McLaren (2013) employed a scale meant to measure respondents' "level of valued involvement, acceptance and perceived fit" (p.932) in the gay community, a factor they identified as "sense of belonging." The authors found evidence that body image dissatisfaction was associated with lower self-esteem among gay men only when sense of belonging to the gay community was high. Similarly, Pakula, Carpiano, et al. (2016) reported that gay and lesbian participants with a stronger sense of community belonging showed greater odds of reporting a mood disorder. Other studies examining the effect of this factor demonstrated more positive outcomes. Morris et al. (2015) used a mediation model to demonstrate that sense of belonging to the gay community was associated with a general sense of belonging which was in turn associated with fewer depressive symptoms. (Lelutiu-Weinberger et al., 2013a) assessed identification with the gay community using three items from the Identification and Involvement with the Gay Community (IIGC) Scale which inquired about the importance of having gay friends, the extent to which being gay made respondents feel like part of a community, and how important being attracted to men was to their sense of identity. The authors reported that stronger identification with the community was associated with less sexual risk for younger gay men. Thus, various studies that examined the effects of gay community identification yielded conflicting outcomes.

Other studies included measures of gay community involvement, demonstrating evidence of positive outcomes. Puckett et al. (2015) measured overall community connectedness with two scales including the full version of the IIGC scale. Five items on this scale asked specifically about the frequency with which respondents participated in community activities and spaces such as community organizations and bars/clubs. The authors presented evidence that community connectedness mediated the relationship between internalized homonegativity and psychological stress such that internalized homonegativity was associated with lower community connectedness which in turn was associated with greater psychological distress. Reed and Miller (2016) examined differences among Black gay and bisexual men who either were or were not exposed to several syndemic factors including sexual abuse, substance use, depression, and risky sex. The authors showed that men not exposed to these syndemic factors reported involvement with gay community spaces and organization while those exposed to syndemic factors did not. Thus, various studies examining the effect of community connectedness on gay men differed both in terms of their conceptualization of this factor and their outcome.

Current Study

While research has examined the effect of both community identification and community involvement on minority stress processes and gay men's mental health, no single study both differentiated between these two factors and compared their effects using equivalent models and samples. The goal of the current study is to examine how both gay community identification and gay community involvement affect the influence of minority stress processes and how these effects may differ. Drawing on data gathered from a sample of gay and bisexual men in New York City, I will investigate the association between minority stress factors and mental health outcomes, the association between these separate factors of community connectedness and

mental health outcomes, and the interactions between minority stress factors and community

connectedness factors and their association with mental health outcomes. Accordingly, I will test

the following hypotheses:

1) Minority stress factors, specifically internalized and enacted stigma, are associated with

negative mental health outcomes (operationalized as symptoms of depression and anxiety) and

are significant predictors of poorer mental health when adjusting for potential confounding

variables.

2) Community identification and community involvement are associated with improved mental

health outcomes and are significant predictors of better mental health when adjusting for possible

confounding variables.

3) Community identification and community involvement moderate the effect of minority stress

factors on mental health by acting as a buffer against the negative impact of minority stress. The

interaction of these factors is a significant predictor of mental health outcomes when adjusting

for potential confounding variables.

Method

This paper draws on data gathered at the baseline assessments of *Pillow Talk,* a

longitudinal study that examined how sexual compulsivity affects outcomes related to sexual risk

among highly sexually active (i.e. at least 9 sexual partners in the last 90 days) gay and bisexual

men in New York City. The study aimed to compare men with similar levels of sexual behavior

but differing levels of sexual compulsivity. This thesis presents analyses of the dataset of 371

participants who completed the baseline assessment in full with valid data for all relevant

variables.

Participants and Procedures

Beginning in February of 2011, participants were enrolled utilizing a combination of recruitment strategies: (1) respondent-driven sampling; (2) internet-based advertisements on social and sexual networking websites; (3) email blasts through New York City gay sex party listservs; and (4), active recruitment in New York City venues such as gay bars/clubs, concentrated gay neighborhoods, and ongoing gay community events. Eligibility criteria were defined as: (1) at least 18 years of age; (2) biologically male and self-identified as male; (3) a minimum of 9 different male sexual partners in the prior 90 days, with at least 2 in the prior 30 days; (4) self-identification as gay, bisexual, or some other non-heterosexual identity (e.g., queer); (5) able to complete assessment in English, and (6) daily access to the internet in order to complete internet-based portions of the study (7) no significant cognitive or psychiatric impairment.

Participation included both at home and in office assessments. Participants completed a structured phone interview to confirm eligibility, and then received a link to complete an at-home computer-assisted self-interview (CASI) to be completed before their first in-office assessment. The research team obtained informed consent from each participant for both in office and at home assessments. All procedures were reviewed and approved by the Institutional Review Board of the City University of New York. Although participants also completed follow-up assessments at 6, 12, and 24 months, the data for this paper were drawn from the baseline CASI.

Measures

Demographics. Participants were assessed on a variety of demographic measures including education, employment status, HIV status, relationship status, sexual identity, and race/ethnicity.

Sexual Orientation Discrimination. Discrimination experienced in daily life (e.g. prejudice, harassment) is a common form of minority stress; we measured this factor using a modified version of the Everyday Discrimination Scale, a 9-item Likert-type scale originally designed to assess participants' experiences of discrimination associated with racism in their day to day lives (Williams, Yan, Jackson, & Anderson, 1997). The scale has been adapted to assess discrimination associated with sexual orientation using the prompt: *In your day-to-day life how often have any of the following things happened to you because of your* <u>*sexual orientation*</u>. Each item presented a possible instance of discrimination (e.g. "You are treated with less respect than other people," "You are called names or insulted"). Respondents indicated the frequency of each item on a scale from 1 (*never)* to 6 (*almost every day).* Higher scores indicate greater experience of discrimination. The scale demonstrated good internal consistency within this sample (α = 0.95).

Internalized Homonegativity. Another form of minority stress we included was self-directed negative feelings about one's own sexual minority identity. We measured this factor using the Internalized Homophobia Scale, a 9-item Likert-type scale that inquires about negative feelings surrounding being gay or bisexual (e.g. "I wish I weren't gay or bisexual," "I feel that being gay is a personal shortcoming for me"). Respondents were instructed, "*Please read the following statements about being gay or bisexual and indicate your level of agreement from strongly disagree to strongly agree."* They responded using a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly agree*). Overall, higher scores indicated more internalized homonegativity and a more negative view (lower valence) of homosexual identity. The scale demonstrated good internal consistency (α = .89).

Identification and Involvement with the Gay Community. To measure gay community

involvement, we used the Identification and Involvement with the Gay Community (IIGC) scale,

an 8-item Likert-type scale (Vanable, McKirnan, & Stokes, 1998). The first four items were

introduced with the prompt, *"For each question, select the response that is most accurate for you*

personally." Responses are indicated on a 5-point scale from 1 (*strongly disagree*) to 5 (*strongly*

agree) and assess the extent to which respondents identify with the gay community (e.g. "Being

attracted to men is important to my sense of who I am"), including one reverse scored item ("I

feel very distant from the gay community"). The last four questions asked participants to indicate

how often they participate in various activities specifically related to the gay community (e.g.

"How often do you read a gay or lesbian oriented paper or magazine, such as the Advocate or

other local gay/bisexual papers?" "How often do you go to a gay bar?"). Participants responded

on a 5-point scale from 1 (*never*) to 5 (*several times a week or daily*). Overall, higher scores

indicated greater gay community involvement.

Mental Health. To measure mental health as an outcome, we used selected sub-scales of

the Brief Symptoms Inventory (BSI), which is a 53-item self-report scale used to measure nine

primary symptom dimensions. In the present study, we selected the subscales for depression and

anxiety. The BSI measures the experience of symptoms in the past seven days including the day

the BSI was completed. Respondents were instructed to, "*Please indicate how much you were*

distressed by each of the following over the past week" and must respond to each of the six

depression-related items (e.g. "feeling blue," "feelings of worthlessness") and six anxiety-related

items (e.g. "feeling fearful," "feeling so restless you couldn't sit well") on scale from 0 (*not at*

all) to 4 (*extremely*). Higher scores on each subscale indicated worse symptoms. We chose these

two dimensions because they are among the most common mental health symptoms and because

of their frequent use in previous literature. Scores from each of the two subscales were combined to yield the outcome variable and the combined scale showed good internal consistency (α = 0.93).

Data Analysis Plan

I conducted data analyses for this study in a several stages. First, I ran descriptive statistics on the demographics of the sample including the mean and standard deviation for each of the measures for every demographic group. Next, I used principal component factor analysis to examine the underlying factor structure of the seven items from the IIGS scale using oblique (Promax) rotation. Two distinct factors emerged with eigenvalues above one for both factors. Each factor corresponded to the hypothesized components of identification and involvement. I then created subscale scores by averaging the scores on each of the relevant items corresponding to the two factors identified as evidenced by a factor loading greater than 0.5 for the given factor. I ran a series of bivariate Pearson's correlations among five measures: the two subscales of the IIGC (i.e., identification and involvement), the two minority stress variables (i.e., internalized homonegativity and discrimination), and BSI scores.

I then ran four separate regressions for each of the two identification/involvement subscales and for each of the scales corresponding to the two minority stress factors as predictors of BSI scores. Seven variables corresponding to demographic factors were included in each regression to adjusting for confounding effects. Each regression included the main effect of the minority stress factor, the main effect of one factor related to the gay community, and the interaction between these factors.

Before conducting the regressions, I centered each of these variables around their means to reduce potential multicollinearity between the main effects and the interaction term. A

significant effect for the interaction term in the regression was considered evidence of a significant moderating effect. In such cases, I plotted significant interactions using the regression equation derived from our model. Two lines were plotted, with one representing the association between the minority stress factors and BSI score for individuals with a community identification/community involvement score (the moderator) one standard deviation below the mean, the other representing the association between minority stress factors and BSI score for individuals with identification/involvement score one standard deviation above the mean. In this way, I could observe how the effect of minority stress on mental health differed according to changes in identification or involvement with the gay community.

Results

Table 1 summarizes the demographic characteristics of the sample. The sample was diverse with regard to race/ethnicity, with about half identifying as White ($n = 107$, 50.4%), one-fifth identifying as Black ($n = 75$, 20.2%), and the remainder split between those identifying as Latino ($n = 51$, 13.7%) and other race/ethnicities ($n = 58$, 15.6%). The sample was largely well-educated with the majority having at least a 4-year degree ($n = 213$, 57.4%). In terms of sexual identity, participants by and large identified as gay ($n = 220$, 94.8%); the remainder identified as bisexual ($n = 46$, 5.2%). The majority of the sample was employed either full or part-time ($n = 211$, 56.9%). Participants were nearly evenly split in terms of HIV-status, with just over half being HIV-negative ($n = 204$, 55%). The sample ranged in age from 18 to 73 ($M = 37.68$, $SD = 11.36$).

Table 2 presents descriptive statistics and factor loadings for each of the seven IIGC items including eigenvalues, percentage of variance accounted for by each factor, item factor loadings for the 2-factor solution with Promax rotation, and the internal consistency coefficient

(Cronbach's α) for each factor. The factor analysis revealed two distinct subscales and the factors corresponded to the separate constructs of gay identification and gay community involvement evinced in the literature. The first three items loaded onto one factor corresponding to the construct of gay identification which accounted for 42% of the variance while the last four loaded onto a second corresponding to gay community involvement and accounted for an additional 15% of the variance; both factors had eigenvalues greater than 1. The first three items making up the identification factor showed strong internal consistency ($\alpha = 0.81$) while the last four items comprising the Involvement factor showed weaker internal consistency ($\alpha = 0.58$).

Table 1 also shows means and standard deviations for scores on each of the minority stress factor scales, community identification, community involvement and the BSI for each demographic group. ANOVAs with post-hoc analysis revealed significant differences in these scores across several demographic categories. Those who had not completed high school reported higher homonegativity while those with at least a four-year college degree reported the least internalized homonegativity. Participants who identified as bisexual also reported more internalized homonegtivity than those who identified as gay/queer/homosexual. Those who identified as white reported less than participants who identified as Black, Latino, or other races. Examining sexual orientation discrimination, I found that participants who were employed reported on average less sexual orientation discrimination as did those in a relationship. There were significant differences in community identification across levels of education, employment status, HIV status, and race/ethnicity. Participants with at least a 4-year college degree on average reported greater community identification than those without one. Participants who were employed, HIV negative, and those that did not identify as bisexual also reported greater community identification. Participants who were employed reported greater community

identification than those who were not employed. Those who identified as Black or Latino

reported less identification than white or other racial and ethnic groups. There were significant

differences Community Involvement across levels of education, HIV status, and sexual identity.

Participants with at least a 4-year college degree reported greater community involvement than

those without one while those who with some college education had greater community

involvement that those who had not completed high school. Participants who were HIV negative

and did not identify as bisexual also reported greater community involvement.

Table 3 presents the results of the bivariate Pearson correlations. There was a significant

positive correlation between the two minority stress factors ($r = 0.19, p < .01$). Internalized

homonegativity was negatively correlated with scores on both community involvement ($r = -0.25, p < .01$) and community identification ($r = -0.25, p < .01$), whereas sexual orientation

discrimination was positively correlated with scores on the community identification subscale ($r = 0.12, p < .05$) and not significantly correlated with community involvement. Both internalized

homonegativity ($r = 0.32, p < .01$) and sexual orientation discrimination ($r = 0.28, p < .01$) were

correlated with poorer mental health, indicating that participants who reported more internalized

homonegativity and sexual orientation discrimination also reported more symptoms of anxiety

and depression. Because age was a continuous variable, I examined its associations with other

factors using bivariate correlations as well however neither of the minority stress factor was

significantly associated with age. The community connectedness subscales (identification and

involvement) were positively correlated with each other ($r = 0.46, p < .01$). Gay community

involvement scores were also negatively correlated with mental health symptoms ($r = -0.11, p < .05$) such that those who reported greater gay community involvement also reported fewer

symptoms of depression and anxiety. Community identification was not significantly correlated

with mental health. Age was positively correlated with community identification ($r = 0.12$, $p <$ .05) but not with involvement and was negatively correlated with symptoms of depression and anxiety ($r = -0.18$, $p < .01$).

I tested the interactions between each of the minority stress factors and the 2 factors derived from the IIGS as predictors of symptoms of mental health using 4 separate regressions; results are presented in Tables 4, 5, 6, and 7. Tables 4 and 5 show results for the gay community involvement sub-scale while tables 6 and 7 show results for the gay identification sub-scale. The regressions also include seven demographic variables to adjust for confounding effects of demographic factors.

In a regression model with no interaction term, (not shown) sexual orientation discrimination was a significant predictor of symptoms of depression and anxiety such that each 1-point increase in this scale was associated with a 0.02 increase on the BSI ($\beta = -0.25$, $p < .01$). Gay community involvement was a significant predictor of symptoms of depression and anxiety such that each 1-point increase in the gay community involvement sub-scale was associated with a 0.15 decrease in BSI ($\beta = -0.14$, $p = .01$) while gay community identification was not a significant predictor of symptoms of depression and anxiety. In a second model with no interaction term, (not shown) internalized homonegativity was a significant predictor of symptoms of depression and anxiety such that each 1-point increase in score on the IHP Scale was associated with a 0.36-point increase on the BSI ($\beta = 0.34$, $p < .01$). Community identification and community involvement were both non-significant.

In models that included sexual orientation discrimination, a term for either of the community connectedness subscales, and their interaction, (Tables 4 and 6) significant main effects remained the same. In models that included internalized homonegativity, a term for either

of the community connectedness subscales, and their interaction, (Tables 5 and 7) the main effect

of internalized homonegativity increased slightly such that each 1-point increase in score on the

IHP Scale was associated with a 0.38-point increase on the BSI ($\beta = 0.36$, $p < .01$) Finally, as

shown in Table 5 there was a significant interaction between internalized homonegativity and

gay community involvement as predictors of symptoms of depression and anxiety ($\beta = 0.12$, $p = 0.01$).

The significant interaction between internalized homonegativity and gay community

involvement as predictors of symptoms of depression and anxiety is presented graphically in

Figure 1. Each line shows the association between internalized homonegativity and poorer

mental health at differing levels of gay community involvement as predicted by the model. For

people with high levels of gay community involvement (one standard deviation above the mean),

the model predicted a BSI score of 0.52 for those scoring one standard deviation below the mean

on the IHP Scale and a BSI score of 1.31 for those scoring one standard deviation above the

mean on the IHP Scale. When the gay community involvement was low (one SD below the

mean), the model predicted a BSI score of 0.82 for those scoring one standard deviation below

the mean on IHP and a BSI score of 1.23 for those scoring one standard deviation above the

mean on IHP. While both lines showed a positive slope, the line that corresponded to high levels

of gay community involvement had a greater slope than that corresponding to low levels of gay

community involvement. Thus, when internalized homonegativity was low, the model predicted

better mental health for those with more gay community involvement however this effect became

weaker as internalized homonegativity increased such that there was no predicted difference in

mental health outcomes for men with high levels of internalized homonegativity.

Discussion

The purpose of this study was to examine how community identification and community involvement interact with minority stress processes to affect mental health among gay and bisexual men, including how these different dimensions of community connectedness may differ in their effects. Using data from a sample of gay and bisexual men in New York City, I found statistical evidence to support the conceptualization of gay community connectedness in terms of two sub-factors, identification and involvement, as well as evidence that at least one of these sub-factors, community involvement, affected mental health outcomes both independently and through an interaction with the minority stress factor of internalized homonegativity. In looking at the directionality of those effects, a complex picture emerged. Bivariate Pearson correlations and linear regressions adjusting for potential confounding factors suggested that community involvement had a beneficial impact on mental health outcomes, predicting fewer symptoms of depression and anxiety. While linear regression models that included an interaction term suggested internalized homonegativity affected men with higher community involvement more strongly, plotting this interaction revealed that this is because men with low internalized homonegativity and high community involvement had best mental health outcomes while the positive effect of community involvement decreased and eventually became negligible for men with high internalized homonegativity, who had similar levels of depression and anxiety regardless of their levels of community involvement. Overall, evidence suggested that community involvement affected mental health in a complex though ultimately positive way.

The finding that the response items designed to measure gay community connectedness load onto to sub-factors corresponding to community identification and community involvement and that these sub-factors differ in their associations with other factors suggests that

conceptualizing community connectedness and a single factor may be limiting. While at least one study explicitly differentiates between these two factors in analyzing their psychological impact on gay and bisexual men (Davids et al, 2015) others have either examined them together (Puckett et al, 2015) or focused on respondents' "sense of belonging" or identification with the community without inquiring about actual frequency of participation in community events and spaces (Kousari-Rad & McLaren, 2013; Pakula et al, 2016; Morris et al, 2015; Lelutiu-Weinberger et al, 2013). Including and differentiating between both factors in future research may help address unresolved questions about the impact of community connectedness on gay and bisexual men's mental health as the previous research has yielded varied and contradictory outcomes.

The results of this study suggest an overall positive impact of community connectedness as community involvement significantly predictes better mental health outcomes. This finding is corroborated by Puckett, Levitt, Horne, and Hayes-Skelton (2015) and Reed and Miller (2016), both of whom demonstrate associations between reported community involvement and improved mental health outcomes. Moreover, given that community involvement is a significant predictor of mental health outcomes in this model while community identification is not, the results suggest that it may be important to include this specific factor in future research on community connectedness and mental health outcomes among gay and bisexual men. One explanation for this finding may be that men with greater community involvement receive greater social support. There is evidence that social support mitigates the effects of minority stress and is linked to improved mental health outcomes among LGBT youth (Hershberger & D'Augelli, 1995; McConnell, Birkett, & Mustanski, 2016) and gay men (Bartoshuk, 2009; Lyons et al., 2013; Perez, 2016; Sattler et al., 2016; Yoshikawa, Wilson, Chae, & Cheng, 2004) and is associated

with improved health behaviors and reduced depressive symptoms among HIV-positive adults

(Grov, Golub, Parsons, Brennan, & Karpiak, 2010; Mizuno, Purcell, Dawson-Rose, & Parsons,

2003).

The implications of the interaction between internalized homonegativity and gay

community involvement are complex. While the direction of the interaction implies that

community involvement exacerbates the negative effects internalized homonegativity on mental

health it is important to interpret this finding in light of the overall positive effect of community

involvement on mental health. Plotting the interaction helps clarify some nuances of the finding,

specifically that the model predicts better mental health outcomes for men with a high level of

community involvement at low to moderate levels of internalized homonegativity. The difference

in predicted mental health outcomes between men with high and low levels of community

involvement narrows, however, as internalized homonegtivity increases. Further, it is important

to interpret this interaction in light of the overall negative association observed between gay

community involvement and internalized homonegativity. This association is logical: men with

increasingly negative attitudes toward homosexuality are likely to interact less with other LGB

people and thus to participate less in activities or spaces specific to the gay community; it is also

corroborated by Puckett, Levitt, Horne, and Hayes-Skelton (2015). Thus while the model does

not predict improved outcomes for men with high internalized homonegativity and high

community involvement, the cases which these conditions apply to would be relatively rare.

The results of the present study highlight the importance of addressing the roles of both

community involvement and internalized homonegativity in mental health interventions and

general mental health treatment of gay and bisexual men. Recent studies demonstrate the

efficacy of therapy that specifically targets minority stress factors among this population

(Pachankis, Hatzenbuehler, Rendina, Safren, & Parsons, 2015; Parsons et al., 2016) The findings of the current study suggest that while community involvement can be beneficial, the role it plays in men's psychological health may relate to the level of internalized homonegativity. It has been noted that, while seeking social support can be an important strategy in combating the psychological impact of minority stress among gay and bisexual men, some men struggle find this support in the gay community (Pachankis, 2014). For clinicians working with men facing this struggle, addressing internalized homonegativity may prove to be a productive direction especially if internalized homonegativity counteracts potential positive effects of community involvement on mental health. Once internalized homonegativity is successfully reduced, working to improve community involvement may be more effective and could further improve mental health.

Strengths, Limitations and Future Directions

While several elements of the study design were important in allowing us to arrive at these results, some also created limitations. Recruiting participants in a large urban area yielded a diverse sample in terms of race, ethnicity, and income, though it also may have limited the generalizability of these findings to gay and bisexual men in smaller cities and rural areas. Using cross-sectional data did not allow us to consider the temporal relationship between factors in establishing causality. The use of self-report measures facilitated large-scale data collection and these measures were highly valid for assessing constructs that directly relate to respondents' experiences, such as sexual orientation discrimination or gay community involvement. However, in evaluating internal, subjective factors these measures can be limited. To measure internalized homonegativity, for example, future studies may benefit from employing other techniques such as the implicit measures used by Millar et al. (2016). Additionally, future studies could use web-

based recruitment and survey techniques along with stratified sampling to recruit a national

sample, which would address some of these limitations of generalizability while maintaining

demographic diversity. A web based study could also allow for longitudinal data collection and

potentially employ implicit measures, thus addressing the limitations on inferring temporal

causality and construct validity of cross-sectional self-report data.

Finally, adapting an existing measure by splitting it into two subscales allowed us to

independently measure and compare constructs that previously literature failed to differentiate.

Because the scale was not originally designed this way, however, one of the scales revealed low

internal consistency. The significant results this scale yielded point to a need to develop

improved measures for the construct of community involvement in future work. Specifically, the

current measure could be improved by accounting for different forms of involvement with the

gay community including how these have evolved in the years since the measure was first

developed. One qualitative study demonstrated significant variation in how respondents

conceived of the gay community, both in terms of who comprised the community and what the

spaces and activities it centered on (LeBeau & Jellison, 2006). While the current measure

focused on bars and LGBT organizations as the primary means of community participation,

many other community spaces and activities have become available to gay and bisexual men

including online social groups as well as gay-owned businesses and organized social activities

unrelated to the bar/club scene. An improved measure could include items that inquire about this

wider range of activities. Another approach would be to inquire about community involvement in

a more general way that could be applied to the different forms involvement takes. Items could

focus on the frequency of social engagement and/or different types of social relationships with

LGBT people (e.g. close friendships, activity partners). In this way, the scale could measure

community involvement that is not limited to more traditional gay activities and spaces.

Conclusion

While the effects of minority stress processes on mental health have been well

documented among gay and bisexual men, the effect of community connectedness and it's

interaction with minority stress factors is less clear as previous studies have shown conflicting

outcomes. Drawing on data from a sample of gay and bisexual men in New York City, this study

aimed to further examine this effect by conceptualizing community connectedness in terms of

two sub-factors, identification and involvement. Results suggested that community involvement

impacts mental in health in complex ways: while it was beneficial as an independent factor, this

beneficial effect decreased as levels of internalized homonegativity increased. More research is

needed to understand the effect of community connectedness on mental health by differentiating

between the sub-factors of identification and involvement and employing valid and highly

reliable measures for each construct.

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Table 1

Mean and Standard Deviation of Scores on Relevant Measures by Demographic Categories

	N (371)	%	Internalized Homophobia Scale		Experience of Discrimination Scale		Community Identification		Community Involvement		BSI	
			M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Education			$F = 7.76**$ (*df* = 3, 369)		$F = 1.65$ (*df* = 3, 367)		$F = 10.55**$ (*df* = 3, 367)		$F = 5.97**$ (*df* = 3, 367)		$F = 1.18$ (*df* = 3, 367)	
Some high school	44	11.9	2.11[a]	1.06	21.52	12.59	3.33[a]	1.01	3.02[a]	0.72	1.15	1.00
Some college	114	30.7	1.74[b]	0.80	18.76	8.53	3.70[a]	0.98	3.00[b]	0.87	0.94	0.86
4-year college degree	124	33.4	1.52[c]	0.69	17.96	7.31	3.94[b]	0.79	3.29[c]	0.75	0.94	0.82
Graduate School	89	24.0	1.50[c]	0.66	18.97	9.54	4.17[b]	0.78	3.40[c]	0.68	0.87	0.75
Employment Status			$F = 2.71$ (*df* = 1, 369)		$F = 9.74**$ (*df* = 1, 369)		$F = 4.27*$ (*df* = 1, 369)		$F = 2.87$ (*df* = 1, 369)		$F = 3.66$ (*df* = 1, 369)	
Employed (full/part time)	211	56.9	1.55	0.73	17.65	8.10	3.93	0.93	3.26	0.76	0.82	0.75
Not employed	160	43.1	1.84	0.92	20.48	9.89	3.74	0.88	3.12	0.81	1.11	0.93
HIV Status			$F = 0.63$ (*df* = 1, 369)		$F = 0.91$ (*df* = 1, 369)		$F = 4.20*$ (*df* = 1, 369)		$F = 7.40**$ (*df* = 1, 369)		$F = 0.94$ (*df* = 1, 369)	
Negative	204	55.0	1.63	0.81	18.58	8.67	3.93	0.91	3.30	0.78	0.91	0.81
Positive	167	45.0	1.69	0.78	19.46	9.40	3.74	0.91	3.07	0.77	0.99	0.88
Relationship Status			$F < .01$ (*df* = 1, 369)		$F = 4.24*$ (*df* = 1, 369)		$F = 0.54$ (*df* = 1, 369)		$F = 0.04$ (*df* = 1, 369)		$F = 0.11$ (*df* = 1, 369)	
Single	297	80.1	1.65	0.80	19.34	9.29	3.84	0.92	3.20	0.79	0.95	0.84
Partnered	74	19.9	1.66	0.78	17.00	7.57	3.87	0.87	3.18	0.77	0.93	0.84
Sexual Identity			$F = 38.54**$ (*df* = 1, 369)		$F = 2.53$ (*df* = 1, 369)		$F = 21.81**$ (*df* = 1, 369)		$F = 8.70**$ (*df* = 1, 369)		$F = 2.38$ (*df* = 1, 369)	
Gay, Queer or Homosexual	325	87.6	1.56	0.72	19.14	8.93	3.93	0.88	3.24	0.78	0.97	0.85
Bisexual	46	12.4	2.30	0.99	16.96	9.46	3.48	0.95	2.88	0.73	0.77	0.77
Race/Ethnicity			$F = 5.41**$ (*df* = 3, 367)		$F = 0.65$ (*df* = 3, 3679)		$F = 5.21**$ (*df* = 3, 3679)		$F = 1.64$ (*df* = 3, 367)		$F = 2.31$ (*df* = 3, 367)	
Black	75	20.2	1.88[a]	0.92	19.63	10.46	3.68[a]	1.03	3.21	0.83	0.91	0.88
Latino	51	13.7	1.74[a]	0.80	18.16	7.46	3.49[a]	1.03	2.97	0.69	1.14	0.90
White	187	50.4	1.50[b]	0.70	18.60	8.56	3.99[b]	0.85	3.23	0.81	0.86	0.78
Other	58	15.6	1.80[a]	0.79	19.41	9.62	3.91[a,b]	0.71	3.27	0.67	1.10	0.90

Note: For factors with more than 2 groups means with differing superscripts within columns differed significantly ($p < 0.05$). LSD-adjusted post hoc analyses were used. $*p < .05$ $**p < .01$

Table 2
Factor Analysis for Selected Items of the Identification and Involvement with the Gay Community Scale

Item no.	Item	2-factor solution	
		identification	involvement
1	It is very important that some of my friends are bisexual/gay.	0.84	-0.02
2	Being gay/bisexual makes me feel like part of a community.	0.80	0.15
3	Being attracted to men is important to my sense of who I am.	0.88	-0.10
4	I feel very distant from the gay community (reverse scaled).	0.09	0.58
6	How often do you attend gay/lesbian organizational activities?	0.04	0.74
7	How often do you go to a gay bar?	0.10	0.70
8	How many gay men would you call personal friends?	0.07	0.63
	Eigenvalue	2.89	1.07
	% of variance	41.29	15.27
	Cronbach's α	0.81	0.58

Table 3
Bivariate Correlations

Measure	1	2	3	4	5	6
1. Internalized Homoneg.	_					
2. Discrimination	.19**	_				
3. Gay Com Inv.	-.25**	.05	_			
4. Gay Com Id.	-.25**	.12*	.46**	_		
5. BSI	.32**	.28**	-.11*	-.02	_	
6. Age	.10	-.08	-.03	.12*	-.18**	_
Mean	1.65	18.87	3.20	3.85	0.95	36.81
Standard Deviation	0.79	9.01	0.78	0.91	0.84	11.27
Cronbach's α	0.89	0.94	0.58	0.81	0.93	_

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

Table 4
Linear Regression Analysis of Demographic Factors, Sexual Orientation Discrimination, Gay Community Involvement, and their Interaction as Predictors of Anxiety and Depression

	b	SE	β
Age	-0.01	<0.01	-0.17**
Sexual Orientation	-0.18	0.13	-0.07
HIV-Status	-0.03	0.10	-0.02
Race/Ethnicity	-0.10	0.09	-0.06
Employment Status	0.21	0.09	0.12*
Educational Attainment	0.11	0.10	0.06
Relationship Status	0.04	0.10	0.02
Sexual Orientation Discrimination	0.02	0.01	0.25**
Gay Community Involvement	-0.15	0.06	-0.14**
Interaction	0.01	0.01	0.07

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

Table 5
Linear Regression Analysis of Demographic Factors, Internalized Homonegativity, Gay Community Involvement, and their Interaction as Predictors of Anxiety and Depression

	b	SE	β
Age	-0.01	<0.01	-0.16**
Sexual Orientation	-0.45	0.13	-0.18**
HIV-Status	0.02	0.10	-0.01
Race/Ethnicity	-0.02	0.09	-0.01
Employment Status	0.23	0.09	0.14**
Educational Attainment	0.14	0.09	0.08
Relationship Status	-0.03	0.10	-0.02
Internalized Homonegativity	0.38	.060	0.36**
Gay Community Involvement	-0.08	.050	-0.07
Interaction	0.15	.060	0.12*

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

Table 6

Linear Regression Analysis of Demographic Factors, Sexual Orientation Discrimination, Gay Community Identification, and their Interaction as Predictors of Anxiety and Depression

	b	SE	β
Age	-.01	<0.01	-0.16**
Sexual Orientation	-0.13	0.13	-0.05
HIV-Status	0.05	0.10	0.03
Race/Ethnicity	-0.09	0.09	-0.05
Employment Status	0.22	0.09	0.13*
Educational Attainment	0.08	0.10	0.05
Relationship Status	0.05	0.10	0.02
Sexual Orientation Discrimination	0.02	0.01	0.24**
Gay Community Identification	-0.04	0.05	-0.04
Interaction	< 0.01	0.01	<0.01

*p<.05, **p<.01*

Table 7

Linear Regression Analysis of Demographic Factors, Internalized Homonegativity, Gay Community Identification, and their Interaction as Predictors of Anxiety and Depression

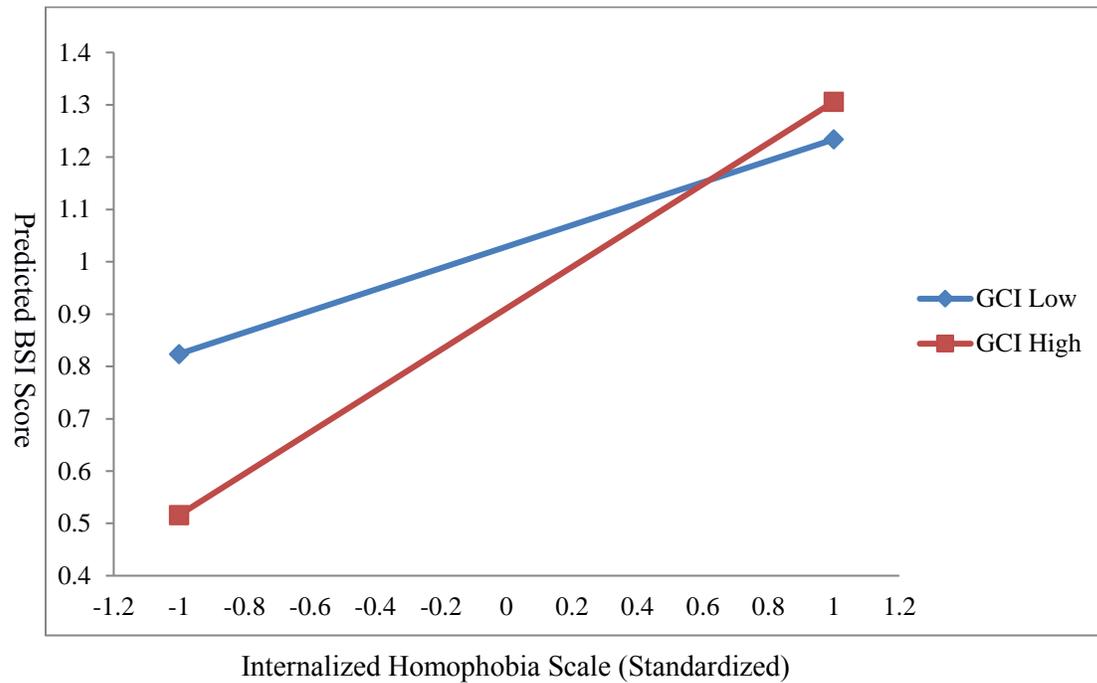|	b	SE	β
Age	-0.01	<0.01	-0.16**
Sexual Orientation	-0.40	0.14	-0.15**
HIV-Status	-0.06	0.10	-0.04
Race/Ethnicity	-0.01	0.10	-0.01
Employment Status	0.22	0.09	0.13*
Educational Attainment	0.10	0.09	0.06
Relationship Status	-0.02	0.10	-0.01
Internalized Homonegativity	0.38	0.06	0.36**
Gay Community Identification	-0.05	0.05	-0.05
Interaction	0.06	0.06	0.05

*p<.05, **p<.01*

Figure 1. The chart above shows the predicted scores on the Brief Symptoms Inventory, a compound measure of symptoms of depression and anxiety, as determined by scores on the Internalized Homophobia Scale. The 2 lines represent 2 different level of the moderating variable, Gay Community Involvement, corresponding to 1 standard deviation above and below the mean for the sample.