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# Measuring Community Connectedness among Diverse Sexual Minority Populations

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*Theory and research agree that connectedness to the lesbian, gay, bisexual, and transgender (LGBT) community is an important construct to account for in understanding issues related to health and well-being among gay and bisexual men. However, the measurement of this construct among lesbian and bisexual women or racial and ethnic minority individuals has not yet been adequately investigated. This study examined the reliability and validity of an existing measure of connectedness to the LGBT Community among a diverse group of sexual minority individuals in New York City, and whether differences in connectedness existed across gender and race or ethnicity. Scores on the measure demonstrated both internal consistency and construct stability across subgroups defined by gender and race or ethnicity. The subgroups did not differ in their mean levels of connectedness, and scores on the measure demonstrated factorial, convergent, and discriminant validity, both generally and within each of the subgroups. Inconsistencies were observed with regard to which scores on the measure demonstrated predictive validity in their associations with indicators of mental health and well-being. The scale is a useful tool for researchers and practitioners interested in understanding the role of community connectedness in the lives of diverse populations of sexual minority individuals.*

Feeling connected to one's community represents an extension of the fundamental human need to belong, is associated with positive individual and social outcomes (Baumeister & Leary, 1995), and is central to establishing collective identity (Ashmore, Deaux, & McLaughlin-Volpe, 2004; Gamson, 1997). Among sexual minorities—lesbian, gay, and bisexual individuals—connectedness to a community of similar others is important to understanding involvement, identity, and related health outcomes (Kertzner, Meyer, Frost, & Stirratt, 2009; Meyer, 2003; Omoto & Snyder, 2002). To date, studies employing measures of connectedness to the lesbian, gay, bisexual, and transgender (LGBT) community have focused primarily on gay and bisexual male populations that were primarily White (e.g., Herek & Glunt, 1995; Proescholdbell, Roosa, & Nemeroff, 2006; Stall et al., 2001). Researchers have not yet established a reliable and valid way to assess this construct across the diverse subgroups of sexual minorities. We present an analysis of a measure of connectedness to the LGBT community (Herek & Glunt, 1995; Stall et al., 2001) and discuss the reliability, validity, and distribution of scores among White, Black, and Latino sexual minority men and women.

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## Defining and Measuring Community Connectedness

Community connectedness is defined as the convergence of individuals' desires to belong to a larger collective, establish a mutually influential relationship with that collective, satisfy their individual needs and be rewarded through their collective affiliation, and construct a shared emotional connection (McMillan, 1996; McMillan & Chavis, 1986; Whitlock, 2007). Theorists have distinguished *community connectedness* from

*community participation* (Ashmore et al., 2004; Gamson, 1997). Community participation refers to behavioral participation in a community, such as through recreational activities or professional groups. Community connectedness can be conceptualized as a more cognitive/affective construct. The differences between community connectedness and participation present distinct methodological issues for researchers: Community participation can be operationalized as concrete behaviors (e.g., the number of organizations to which an individual belongs), but community connectedness reflects cognitive and affective components of community affiliation, such as ideological solidarity, that are more difficult to operationalize.

One of the most widely used measures of community connectedness is the Sense of Community Index (SCI) developed by Perkins and colleagues (Long & Perkins, 2003; Perkins, Florin, Rich, Wandersman, & Chavis, 1990). This 12-item scale was developed for use in the general population and is focused on assessing community connectedness in relation to geographically specific neighborhoods. However, researchers have questioned the psychometric properties of the scores resulting from this measure (Chipuer & Pretty, 1999; Long & Perkins, 2003). Measures like this one, which are theoretically grounded in general notions of community that are specific to geographic neighborhoods, may not adequately assess connectedness to the LGBT community given LGBT communities face particular concerns not common within the general population. Furthermore, one's sense of community is not always restricted to geographically specific neighborhoods. It often exists at the neighborhood, town and/or city level, as well as at the level of geographically undefined psychological constructs (Omoto & Snyder, 2002).

### Measuring Connectedness to the LGBT Community

Some attempts have been made at designing a psychometrically sound measure of community connectedness specific to sexual minority communities. One example is the Psychological Sense of Community among Gay Men Scale (Proescholdbell et al., 2006). This 26-item measure includes items from the SCI and other measures designed for use within the general population, which were adapted for the purposes of assessing psychological sense of community specifically among gay men. Although this measure demonstrates sound psychometric properties, there are several issues that may decrease its value for use in research among sexual minority populations. For example, its length may be prohibitive in large-scale community surveys, the items were not originally generated with specific concern for LGBT community issues, and its adaptation was limited to gay male communities. Other measures, such as the Identification and Involvement with the Gay Community Scale (IGCS; Vanable, McKirnan, & Stokes, 1992), are brief and have been constructed with the original intent of measuring similar constructs specific to the gay community. However, this measure includes items designed to assess both community connectedness (e.g., feeling connected) and community participation (e.g., attending gay-themed events). Investigators who wish to distinguish between the constructs of *connectedness* and *participation* will find measures such as the IGCS insufficient.

Another measure of connectedness to the LGBT community addresses many of these conceptual and measurement concerns. The Urban Men's Health Study (UMHS)—a study of randomly sampled gay and bisexual men in Chicago, Los Angeles, New York, and San Francisco—included a community affiliation scale (Barrett & Pollack, 2005; Stall et al., 2001) that was based on the community consciousness subscale of a larger measure of community and identity developed by Herek and Glunt (1995) in a study of primarily White gay and bisexual men in Sacramento, CA. Previous versions of this scale have been referred to as measures of "affiliation with the community" (Barrett & Pollack, 2005; Stall et al., 2001) and "community cohesion" (Mills et al., 2001). In these uses of the scale, it has been conceptualized as measuring connectedness to the LGBT community in conjunction with separate measures of behavioral community participation and perceived exclusion. The fact that this scale is brief, that it was designed explicitly to assess issues particular to sexual minority communities, and that it distinguishes connectedness from participation, make it potentially ideal for use in research on diverse sexual minority populations. However, published accounts of the use of this scale provide little to no information on its psychometric properties. Furthermore, the UMHS sampled primarily White men who have sex with men (MSM); thus, the utility of this scale within and across racial or ethnic and gender-specific sexual minority subpopulations is unknown.

### Diversity in Connectedness to the LGBT Community

Not all sexual minority individuals feel, or have the opportunity to feel, connected to the LGBT community (Barrett & Pollack, 2005; Valocchi, 1999). Thus, it is important to understand whether subgroups of sexual minorities differ from one another in terms of the degree to which they feel connected to a LGBT community. The UMHS demonstrated that community connectedness varies greatly by social status, with working-class individuals generally demonstrating less connectedness to the community than more affluent individuals (Barrett & Pollack, 2005). The UMHS also found that individuals in neighborhoods with historically high representations of gay men were more likely to feel connected to the community than individuals in other neighborhoods (Mills et al., 2001).

Female and racial or ethnic minority group members may feel less connected to the LGBT community than White male sexual minority individuals because many aspects of the LGBT community are primarily White and male oriented (Han, 2007). Racial and ethnic minorities may feel invisible and marginalized, and are often subject to racism in White LGBT communities (Binnie & Skeggs, 2004; Han, 2007). Therefore, it is important to note that the term *LGBT community* as we use it should not be understood as referring to one (White) community, but as referring to the diversity of LGBT communities (Meyer & Ouellette, 2009; Moore, 2010). This allows consideration of differences among subgroups of sexual minority individuals, but does not presume that only White sexual minority people have a community. For example, Black sexual minorities have a long history of creating and being involved with LGBT communities of color (Hawkeswood, 1996; Silberman, 2001). However, racial and ethnic minority individuals experience unique challenges to the development of their sexual minority identity because they must contend with marginalization from their larger racial and ethnic minority community, as well as the predominantly White LGBT community (Kraft, Beeker, Stokes, & Peterson, 2000; Martinez & Sullivan, 1998). Theories of additive burden and social stress further indicate that due to their dually and triply stigmatized statuses, sexual minority men and women of color are at risk for incrementally negative health outcomes (Meyer, Schwartz, & Frost, 2008).

Additionally, although colloquial discussions often refer to a singular ''LGBT community,'' research and theory suggest that individuals and groups vary widely in their definitions of *community* and *communities* (cf. Rothblum & Sablove, 2005). An intersectionality perspective on the communities of sexual minority men and women of color further suggests differences in the ways groups of sexual minorities define and experience community connectedness. Studies of Black lesbians, for example, have demonstrated the ways in which norms surrounding sex and gender roles typical of White lesbian communities (e.g., the butch and femme dichotomy) do not adequately apply to the experiences of Black lesbians (e.g., Wilson, 2009). Thus, dimensions of diversity may interact to define unique expectations and experiences of community at the intersections of race or ethnicity and gender (i.e., Black lesbians) that are not adequately accounted for by expected commonalities within more broadly conceived categories of race and ethnicity (i.e., Black) and gender (i.e., lesbians) alone.

Finally, research suggests that bisexually-identified individuals may feel less connected to the LGBT community than lesbians and gay men (Balsam & Mohr, 2007). Others have theorized that bisexuals may experience other sexual minorities, as well as heterosexuals, as suspicious and rejecting of their bisexual identity (Dodge & Sandfort, 2006; Greene, 2003). Some empirical studies have shown that bisexuals demonstrate higher rates of adversity and mental health problems, as well as lower levels of social well-being, than other sexual minorities (e.g., Jorm, Korten, Rodgers, Jacomb, & Christensen, 2002; Kertzner et al., 2009; Meyer, Dietrich, & Schwartz, 2008). Even further, Kertzner et al. demonstrated that lower levels of social well-being among bisexuals were significantly attenuated after accounting for the fact that bisexuals felt less connected to the LGBT community than lesbians and gay men. Thus, lack of community connection may potentially account for diminished well-being among bisexuals.

## Community Connectedness, Mental Health, and Well-Being among Sexual Minorities

In his model of minority stress processes among sexual minority individuals, Meyer (2003) pointed out the importance of connectedness to the LGBT community as a group-level coping resource. Specifically, feeling part of a community of similar others may allow sexual minorities to make positive social comparisons to other people like them, instead of making negative comparisons, based on heterosexist stigma, to members of the outgroup (Crocker & Major, 1989; Herek & Glunt, 1995; Meyer, 2003). For these reasons, connectedness to the LGBT community may play an ameliorative role in the relationship between minority stress (i.e., stigmatization, prejudice, and discrimination) and mental health (Major & O'Brien, 2005; Meyer, 2003). Developmentally, the process of establishing a connection to the LGBT community is thought to coincide with and be invaluable to sexual minority individuals' coming out processes and abatement of internalized homophobia (e.g., Corrigan & Matthews, 2003; Galatzer-Levy & Cohler, 2002).

The positive effects of community connectedness have been demonstrated in various studies regarding mental health and well-being (Kertzner et al., 2009; Ramirez-Valles, Fegus, Reisen, Poppen, & Zea, 2005), safer sex practices (Herek & Glunt, 1995; Ramirez-Valles & Brown, 2003), sexual risk (Flowers, Duncan, & Frankis; 2000; Ramirez-Valles, 2002), medication adherence among HIV-positive MSM (Stall et al., 2001), and coping with chronic sorrow among HIV-positive men and women (Lichtenstein, Laska, & Clair, 2002). Omoto and Snyder (2002) further suggested that feeling psychologically connected to the LGBT community, and groups within (e.g., people living with HIV or AIDS), is an important impetus to volunteerism and support provision among sexual minorities, which are important components to improving community-level health and well-being.

Following the research reviewed earlier, it is likely that feeling connected to the LGBT community is an important factor to consider in the study of sexual

minority individuals' mental health and well-being. It is further necessary to consider the role of community connectedness in indicators of the negative aspects of mental health, such as depressive symptoms, alongside positive or functional aspects of mental health, such as psychological and social well-being (Kertzner et al., 2009). Specifically, functional indicators of mental health in the forms of psychological well-being focus on the degree to which individuals are able to achieve their full potential and actualize their authentic selves (Keyes, Shmotkin, & Ryff, 2002; Ryan & Deci, 2001), whereas social well-being refers to the degree to which individuals experience adequate fit within their social worlds (Keyes, 1998). Increased attention has been paid to functional well-being in sexual minority individuals' lives in recent years (Riggle, Rostosky, & Danner, 2009), with a particular focus on the role that community connectedness has in determining these outcomes of positive mental health (Kertzner et al., 2009).

## This Study

We present a study of a measure of connectedness to the LGBT Community (see Table 1) adapted from the measure of community affiliation used in the UMHS (Barrett & Pollack, 2005; Stall et al., 2001). We sought to answer the following research questions: (a) Are scores produced from this measure reliable and valid? (b) Do scores from the measure demonstrate consistent reliability and validity *across* various subgroups of sexual minority individuals based on gender and race or ethnicity? and (c) Are there racial or ethnic and/or gender and/or sexual orientation differences in levels of connectedness to the LGBT community?

## Method

### Participants and Procedures

This study was conducted as part of Project STRIDE: a large-scale National Institute of Mental Health-funded research project conducted in the New York City area among diverse populations defined by sexual orientation, race or ethnicity, and gender. The study used a longitudinal design with measures at baseline and during a one-year follow up. Ninety-four percent of the participants completed both baseline and follow-up interviews. Five hundred twenty-four individuals participated in Project STRIDE: 396 sexual minority (i.e., lesbian, gay, and bisexual) and 128 heterosexual individuals. This article reports on the data from the 396 sexual minority participants only.

**Table 1.** *Connectedness to the LGBT Community Scale Items and Factor Loadings*

| | Factor Loadings | | | |
|---|---|---|---|---|
| | | Second-Order Solution | | |
| | First-Order Solution | Overarching Factor: Connectedness | | |
| Item | Factor 1: Connectedness | Factor 1: Closeness | Factor 2: Positivity | Factor 3: Problem-Focused |
| 1. You feel you're a part of NYC's LGBT community. | .71 | .73 | | |
| 2. Participating in NYC's LGBT community is a positive thing for you. | .77 | | .82 | |
| 3. You feel a bond with the LGBT community. | .76 | .81 | | |
| 4. You are proud of NYC's LGBT community. | .55 | | .57 | |
| 5. It is important for you to be politically active in NYC's LGBT community. | .59 | | | .72 |
| 6. If we work together, gay, bisexual and lesbian people can solve problems in NYC's LGBT community. | .30 | | | .43 |
| 7. You really feel that any problems faced by NYC's LGBT community are also your own problems. | .55 | | | .68 |
| 8. You feel a bond with other [same gender similar others].[a] | .50 | .52 | | |
| Second-Order Factor Loadings | — | .89 | .99 | .74 |

*Note.* Participants were asked to indicate to what extent they agreed with the item statements on a scale ranging from 1 (*agree strongly*) to 4 (*disagree strongly*). Standardized factor loadings were obtained using confirmatory factor analysis in AMOS 18® (IBM Corporation, Somers, NY). All factor loadings were statistically significant at $p < .001$. NYC = New York City; LGBT = lesbian, gay, bisexual, and transgender.

[a]Item was drawn from Herek and Glunt (1995); all other items were taken from the Urban Men's Health Study (Barrett & Pollack, 2005; Stall et al., 2001).

The recruitment strategy called for a venue-based stratified sampling of sexual minority participants. Given the primary aims and practical concerns of the larger study, transgender individuals were not included in the study. Recruitment was done by research workers who approached potential study participants in recruitment venues and personally asked them to participate. In any given venue, all potential participants were approached for eligibility screening, regardless of their perceived sexual orientation. No passive recruitment, such as using large-scale advertising campaigns, was used.

Sampling venues were selected to ensure a wide diversity of cultural, political, racial or ethnic, and sexual representation within the demographics of interest. To control for venue biases, a cap of 25% was established for the number of participants taken from each of five following *venue types*: (a) 14% were recruited from bars (i.e., establishment where alcohol was served), (b) 9% from non-bar establishments (i.e., indoor commercial establishments where no alcohol was served, such as coffee shops, gyms, book stores, art galleries, and sex shops), (c) 18% from outdoors (i.e., parks and streets), (d) 10% from groups (i.e., community organizations and groups organized around a variety of activities or interests, such as sports, politics, culture, and racial or ethnic or national interests), and (e) 23% from events (e.g., Gay Pride). To avoid excessive biasing of the sample, some venues were purposefully excluded from our sample (e.g., groups or events that had a therapeutic function, such as 12-step programs or HIV and AIDS support groups). Some venues were oriented toward the LGBT community (e.g., gay bars, Gay Pride, and LGBT coffee shops), whereas others were considered general venues (e.g., chain book stores and coffee shops or public parks). This allowed for a sampling of individuals with varying levels of involvement in the LGBT community. The diversity of the sample was further enriched through the use of snowball sampling in which participants were given letters of invitation to pass along to potential participants, such as friends and colleagues. A total of 25% of participants were recruited via snowball and referral methods.

Individuals were eligible to participate in the study if they (a) self-identified as male or female and were assigned that sex at birth; (b) self-identified as heterosexual or straight or as a sexual minority (i.e., lesbian, gay, bisexual, or used other terms conveying such identification, such as queer); (c) self-identified as White, Black, or Latino or used other terms conveying such identifications (e.g., Hispanic or African American); (d) were between the ages of 18 and 59; (e) resided in New York City for two years or more (to minimize confounding stress related to acculturation to an urban environment); and (f) were able to speak English well enough to engage in casual conversation. To avoid issues of nonindependence in the dataset, individuals were not eligible to participate in the study if a close family member or relationship partner already participated in the study. The cooperation rate for the study was 79% and the response rate was 60% (American Association for Public Opinion Research, 2005).

Interviewed individuals resided in 128 out of 176 New York City zip codes, and no more than 3.8% resided in any one zip code area. The geographic distribution of participants is presented in Figure 1. Table 2 contains demographic information for the sample. The table is separated by subgroups defined by gender and race or ethnicity. Participants completed one-on-one in-person interviews that lasted an average of 3.82 hr ($SD = 55$ min). They were compensated $80. The interview contained a number of quantitative and qualitative measures. Data analyzed in this study were obtained through the measures listed below. Each of the measures was administered identically at both baseline and one-year follow-up interviews.

## Measures

*Connectedness to the LGBT Community Scale.* We assessed connectedness to the LGBT community using the eight-item measure presented in Table 1. The latent construct of connectedness to the LGBT community was assessed through agreement with the eight items that are indicators of various ways one can feel connected with the LGBT community. The first seven items comprised the version of the measure used in the UMHS study. The types of community connection assessed by the items are (a) how close participants felt to the LGBT community (Items 1 and 3), (b) how positive their connections were (Items 2 and 4), and (c) whether they felt their connections were rewarding and had problem solving potential (Items 5, 6, and 7). Item 8, part of a measure designed by Herek and Glunt (1995), was added to the seven-item UMHS scale in this study to assess feelings of closeness with community members who were same-gendered similar others—an aspect of community connectedness not captured by the other items. Although the items draw on different aspects of components of community connectedness (i.e., positivity, closeness, and problem-focused), they were considered to be indicators of an overarching latent construct of connectedness to the LGBT community.

Interviewers read the following instructions to participants: ''These are questions about the LGBT community of New York City. By LGBT community, I don't mean any particular neighborhood or social group, but in general, groups of gay men, bisexual men and women, lesbians, and transgender individuals.'' Participants were then read aloud the eight items and asked the degree to which they agreed with each item on a scale ranging from 1 (*agree strongly*) to 4 (*disagree strongly*). Responses were recoded such that higher scores indicated greater feelings of connectedness.

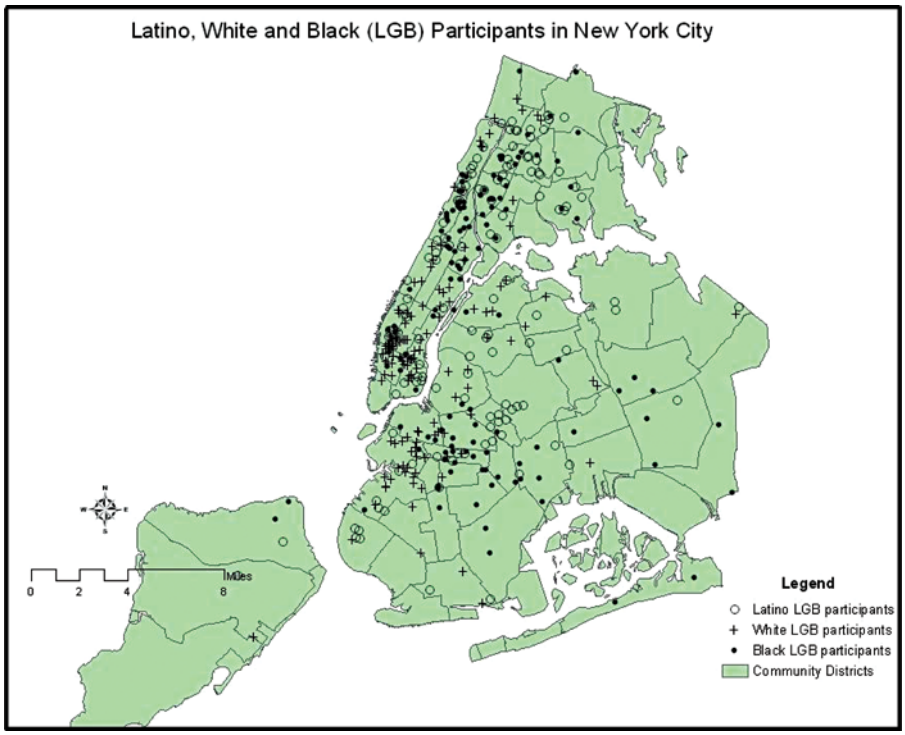


**Figure 1.** Geographic distribution of Latino, White, and Black lesbian, gay, and bisexual (LGB) participants (color figure available online)

Although the scales used in this report and the UMHS study were different (i.e., this study added Item 8), it is possible to compare reliability and mean statistics from the two. Scores on the connectedness scale in the UMHS study were internally consistent with an alpha of .78. Cronbach's alpha for the total STRIDE sample was .81. The mean response for the seven items used in the UMHS was 3.27 and 3.30 for STRIDE's eight-item scale.

*Behavioral participation in the LGBT community.* Based on a measure developed by Mills et al. (2001), this instrument assessed the various groups and organizations participants were members of or participated in. Nine preliminary questions asked participants to state whether (''yes'' or ''no'') they had attended meetings or participated in some other way in different organizations and clubs in the past 12 months. These included things like professional or business meetings, a gym or health club, and religious congregations. If participants answered yes to any of the preliminary questions, they were then asked to identify if the group or organization they attended was heavily attended by other sexual minority individuals. These follow-up questions were also dichotomous yes–no responses. A total score for behavioral participation in the LGBT community was created by counting the number of LGBT organizations and memberships participants endorsed.

*Collective Self-Esteem Scale.* The collective self-esteem scale (Luhtanen & Crocker, 1992) was used to assess individuals' evaluation of their collective identity and group memberships, generally conceived. Four domains of collective self-esteem were assessed, each using four items. These were membership esteem, public collective self-esteem, private collective self-esteem, and importance to identity. Items included, ''I often regret that I belong to some of the social groups that I do.'' and ''Others respect the social groups that I belong to.'' Respondents rated the extent to which they agreed with each of the 16 statements on a scale ranging from 1 (*strongly agree*) to 7 (*strongly disagree*). This study did not hypothesize differential relationships between the Connectedness to the LGBT Community Scale and the four subscales of collective self-esteem. Thus, collective self-esteem was analyzed in aggregate. Cronbach's alpha for the aggregate measure was .87. Responses were coded so that higher scores reflected greater collective self-esteem.

*Group identity.* Following Williams, Spencer, and Jackson (1999), the study measured strength of group identity, on a four-point scale, as the extent to which respondents indicated that they felt close in their ideas and feelings to groups based on their sexual orientation (i.e., ''the gay community'') and race or ethnicity (''the African American'' and ''Latino'' communities). Each group identity was assessed using one item only. Possible responses ranged from 1 (*very close*) to 4 (*not close at all*). Responses were recoded so that higher scores reflected stronger group identities.

**Table 2.** *Demographics for Project STRIDE's Lesbian, Gay, and Bisexual Sample*

| | White Men ($n = 67$) | | White Women ($n = 67$) | | Black Men ($n = 67$) | | Black Women ($n = 64$) | | Latino Men ($n = 64$) | | Latina Women ($n = 67$) | | Total ($n = 396$) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Continuous Variables** | ***M*** | ***SD*** | ***M*** | ***SD*** | ***M*** | ***SD*** | ***M*** | ***SD*** | ***M*** | ***SD*** | ***M*** | ***SD*** | ***M*** | ***SD*** |
| Age | 34.04 | 10.08 | 32.37 | 9.76 | 31.34 | 7.66 | 31.86 | 9.41 | 31.91 | 8.61 | 33.01 | 9.78 | 32.43 | 9.24 |
| **Categorical Variables** | ***n*** | % | ***n*** | % | ***n*** | % | ***n*** | % | ***n*** | % | ***n*** | % | ***n*** | % |
| Bisexual | 4 | 6.0 | 10 | 14.9 | 12 | 17.9 | 18 | 28.1 | 12 | 18.8 | 15 | 22.4 | 71 | 17.9 |
| Employment status | | | | | | | | | | | | | | |
| Employed | 56 | 83.6 | 52 | 77.6 | 48 | 71.6 | 40 | 62.5 | 46 | 71.9 | 44 | 65.7 | 286 | 72.2 |
| Unemployed | 5 | 7.5 | 5 | 7.5 | 11 | 16.4 | 15 | 23.4 | 15 | 23.4 | 13 | 19.4 | 64 | 16.2 |
| Student | 12 | 17.9 | 21 | 31.3 | 10 | 14.9 | 16 | 25.0 | 4 | 6.3 | 11 | 16.4 | 74 | 18.2 |
| Other | 4 | 6.0 | 1 | 1.5 | 7 | 10.4 | 7 | 10.9 | 9 | 14.1 | 9 | 13.4 | 37 | 9.3 |
| Education level | | | | | | | | | | | | | | |
| ≤High school diploma | 10 | 14.9 | 3 | 4.5 | 17 | 25.4 | 18 | 28.1 | 18 | 28.1 | 20 | 29.9 | 86 | 21.7 |
| Relationship status | | | | | | | | | | | | | | |
| In a relationship >1 year | 14 | 20.9 | 22 | 32.8 | 9 | 13.4 | 25 | 39.0 | 10 | 15.6 | 18 | 26.9 | 98 | 24.7 |
| Parental status | | | | | | | | | | | | | | |
| Have children | 1 | 1.5 | 3 | 4.5 | 10 | 14.9 | 27 | 42.2 | 5 | 7.8 | 23 | 34.4 | 69 | 17.4 |
| Live with children | 0 | 0.0 | 0 | 0.0 | 1 | 1.5 | 15 | 23.4 | 0 | 0.0 | 16 | 23.9 | 32 | 8.1 |
| Immigration | | | | | | | | | | | | | | |
| Born in the United States | 60 | 89.6 | 56 | 83.6 | 57 | 85.1 | 58 | 90.6 | 41 | 64.1 | 56 | 83.6 | 328 | 82.8 |

*Note.* Employment categories are not mutually exclusive; percentages may add to more than 100%.

*Social network characteristics and social supports.* The study included an instrument adopted from Fisher (1977) by Martin and Dean (1987) for use among gay or bisexual men to assess social support. Respondents provided the first name or initials of individuals who provided them with support in various capacities and domains in the year prior to the interview. For each person named in respondents' support networks, respondents were asked basic demographic information regarding the person's gender, sexual orientation, relationship, race and ethnicity, age, educational level, and whether the individuals currently lived with them. This measure allowed identification of network size (i.e., the number of people named as providing support) and the representation of sexual minority individuals in participants' social support networks.

*Internalized homophobia.* This scale assessed the extent to which sexual minority individuals did not accept their sexual orientation, were uneasy about their same-sex desires, and sought to avoid homosexual feelings (Martin & Dean, 1987). The scale consisted of nine items. For example, one item read, "How often have you wished you weren't gay/lesbian/bisexual?" Participants rated the frequency with which they experienced such thoughts and feelings in the year prior to the interview on a four-point scale ranging from 1 (*often*) to 4 (*never*). Scores on this measure demonstrated adequate reliability ($\alpha = .84$). Responses were recoded so that higher scores reflected more internalized homophobia.

*Depressive symptoms.* The Center for Epidemiological Studies–Depression (CES–D) Scale (Radloff, 1977) is a 20-item measure of depressive symptoms experienced over a one-week period prior to the survey. Items were phrased in such a way that participants were asked how often during the past week they "could not get going," "felt depressed," "felt hopeful about the future," and "felt people dislike you." Participants responded on a four-point scale ranging from 1 = (*rarely or none of the time [<1 day]*) to 4 (*most or all of the time [5–7 days]*). The CES–D is one of the most widely used measures of depressive symptoms. Internal consistency for scores on the CES–D in this study was .92. Total scores were computed such that higher scores indicated more depressive symptoms.

*Psychological well-being.* As developed by Ryff (1989) and Ryff and Keyes (1995), an 18-item assessment of psychological well-being was included to assess a positive component of mental health. This measure assessed psychological well-being across six domains: self-acceptance, positive relations with others, autonomy, environmental mastery, purpose in life, and personal growth. Participants' scores on the aggregate psychological well-being scale were reliable at $\alpha = .75$. Subscales were not analyzed separately because of low subscale reliability; and, instead, an aggregate score was analyzed based on dividing the total score by the number of items in the scale (Springer, Hauser, & Freese, 2006). Higher scores on this variable indicated greater psychological well-being.

*Social well-being.* As formulated by Keyes (1998), this 15-item scale examined respondents' perception of their social environment and included five dimensions of social coherence, integration, acceptance, contribution, and actualization. Internal consistency reliability for scores on the total scale was .78. As was done with the psychological well-being measure, an aggregate social well-being score was computed for each participant by dividing their total score on the 15 items by the number of items in the scale. Higher scores indicate greater social well-being.

## Analytical Plan

We started by conducting a confirmatory factor analysis (CFA) to ensure that the scale was in fact measuring an overarching construct of community connectedness, both for the total sample and for subgroups based on gender and race or ethnicity. We then assessed the reliability of the measure for all participants and for each of the subgroups based on gender and race or ethnicity. Reliability assessment included an examination of the scale's properties, item-total correlations, internal consistency, and stability correlation coefficients. We tested the construct validity of the measure by testing associations that were indicative of convergent, discriminant, and predictive validity. Indicators of convergent validity were hypothesized to be significant positive correlations with behavioral connectedness, collective self-esteem, gay group identity, and the number of sexual minority individuals who were in a participant's social support network, as well as a significant negative relationship with internalized homophobia. Indicators of discriminant validity were hypothesized to be lack of association with a general indicator of sociability and social support (i.e., the size of individuals' social support networks) and non-gay group identities. Indicators of predictive validity were considered positive and negative indicators of mental health and well-being. Specifically, we hypothesized that the connectedness measure would correlate negatively with depressive symptoms, and positively with both psychological and social well-being. Validity correlations were performed for the sample as a whole and separately for the subgroups defined by gender and race or ethnicity. Finally, we performed an analysis of variance test to examine group differences in connectedness to the LGBT community across the subgroups based on gender and race or ethnicity. We also conducted an independent samples *t* test to examine differences between bisexual and

lesbian or gay identified individuals. Because bisexuals were not equally distributed across the subgroups (see Table 2), we were not able to incorporate bisexual identity into our stratified approach to psychometric analyses.

## Results

### CFA

CFA was conducted to ensure that the Connectedness to the LGBT Community Scale was assessing an overarching construct of community connectedness. A second-order factor model was fit to the data using AMOS 18® (IBM Corporation, Somers, NY). This model contained an overarching second-order latent construct of community connectedness, as well as three first-order latent factors representing the item content categories of closeness, positivity, and problem-focused aspects of community connectedness. Because the significance level of the overall model chi-square can misrepresent the adequacy of model fit in large samples, the root mean square error of approximation (RMSEA; values below .08) and the comparative fit index (CFI; values above .95) were used as additional indicators of adequate model fit (Hu & Bentler, 1999). The specified model fit the data adequately, $\chi^2(17,\ N = 396) = 51.55$, $p < .001$; RMSEA = .072; CFI = .961. This model was compared to a more parsimonious first-order factor model containing one single factor of connectedness. The original second-order factor model fit the data better than the single factor model, $\chi^2(20,\ N = 396) = 118.60$, $p < .001$; RMSEA = .112; CFI = .890. These results indicated that the items reflected three potential subdomains of community connectedness that were nested within a single underlying latent construct of connectedness. The factor loadings for both models are presented in Table 1. The minimum factor loading required to conclude that any given item loaded on a given factor was set at .30 (Tinsley & Tinsley, 1987).

Measurement invariance across the subgroups defined by gender and race or ethnicity was examined using the criteria outlined by Cheung and Rensvold (2002) via the multiple group analysis function in AMOS 18. Specifically, the unconstrained second-order CFA model described earlier was compared to alternative models in which elements of the measurement model were constrained to be equal across groups, thus providing a test of the assumption of measurement invariance across subgroups. Differences $> .01$ in CFI for compared models were taken to indicate a violation of the assumption of measurement invariance (Cheung & Rensvold, 2002). The unconstrained model did not substantially differ from an alternative model in which the factor loadings were constrained to be equal across subgroups (Measurement Weights Constrained–Unconstrained; $\Delta CFI = -.004$, $\Delta RMSEA = -.004$), thus indicating that the magnitude of the factor loadings did not differ substantially across subgroups. Furthermore, the unconstrained model did not differ from a model in which the second-order relationships were constrained to be equal across subgroups (Structural Weights Constrained–Unconstrained; $\Delta CFI = -.009$, $\Delta RMSEA = -.009$), suggesting that the relationships between the three factors and the underlying latent construct of connectedness did not substantially differ across subgroups.

### Reliability

Corrected item-total correlations were all found to be in the acceptable range, with all eight items correlating between .32 and .68 with the total scale score. Item 6 demonstrated the lowest corrected item-total correlation. However, if removed, the scale's internal consistency would not significantly improve, and the item demonstrated adequate factor loadings in the previous factor analysis.

As can be seen in Table 3, scores on the total connectedness scale were internally consistent for the total sample (Cronbach's $\alpha = .81$). Internal consistency reliability coefficients for the subfactors of closeness, positivity, and problem-focused aspects of the connectedness construct did not indicate that the data demonstrated adequate internal consistency with regard to all three subdomains (alphas were .73, .63, and .63, respectively). Given these subdomains were not initially intended to represent analyzable subscales of the measure of connectedness and that scores on these factors did not demonstrate adequate internal consistency reliability, subsequent analyses focused solely on aggregate scores on the community connectedness measure. Internal consistency reliability for scores on the total measure was next examined across the six subgroups based on gender and race or ethnicity. Cronbach's alphas ranged from .75 to .88 (see Table 3). Scores on the scale also demonstrated a great deal of stability over time, with correlations between two assessments taken one year apart at .73 for the total sample and ranging from .64 to .80 for the six subgroups.

### Validity

Table 3 also presents correlations between the Connectedness to the LGBT Community Scale with indicators of convergent, discriminant, and predictive validity.

*Convergent validity.* Taken together, the connectedness scale demonstrated good convergent validity, given that it was significantly and moderately to highly correlated with collective self-esteem, strength of one's gay group identity, internalized homophobia, and behavioral connectedness to the LGBT community. These relationships held without exception for the total sample and each of the subgroups. Connectedness was significantly correlated with the number of sexual minority

**Table 3.** *Reliability and Validity of Connectedness to the LGBT Community Scale*

| | Descriptives | | Reliability | | Convergent Validity | | | | | Discriminant Validity | | | Predictive Validity | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subgroups | *M* | *SD* | Internal Consistency | Correlation at 1-Year Follow Up | Collective Self-Esteem | LGB Group Identity | Internalized Homophobia | Behavioral Participation | Number of LGB in Social Network | Size of Social Network | Black Group Identity | Latino Group Identity | Depression | Psychological Well-Being | Social Well-Being |
| White Men | 26.31 | 3.48 | .75 | .66*** | .50*** | .43*** | −.32** | .25* | .30* | .11 | — | — | −.20 | .32** | .45*** |
| White Women | 26.35 | 3.77 | .78 | .72*** | .33** | .55*** | −.45*** | .47*** | .12 | −.01 | — | — | −.06 | .32** | .32** |
| Black Men | 25.75 | 4.93 | .88 | .80*** | .52*** | .73*** | −.37** | .37** | .08 | .04 | −.04 | — | −.10 | .09 | .26* |
| Black Women | 27.00 | 3.91 | .78 | .64*** | .46*** | .66*** | −.37** | .30* | −.06 | −.09 | .11 | — | .03 | .12 | .29* |
| Latino Men | 26.39 | 4.33 | .82 | .77*** | .54*** | .63*** | −.36** | .40*** | .17 | .12 | — | .04 | .09 | .11 | .21 |
| Latina Women | 26.75 | 4.23 | .80 | .74*** | .27* | .64*** | −.35** | .29* | .23 | .15 | — | .25 | −.22 | .24* | .46*** |
| Total | 26.42 | 4.13 | .81 | .73*** | .43*** | .62*** | −.37*** | .32*** | .13** | .04 | .02 | .14 | −.05 | .17* | .31*** |

*Note.* LGBT = lesbian, gay, bisexual, and transgender.
*$p < .05$. **$p < .01$. ***$p < .001$.

people in individuals' social support networks for the total sample, but the size of this correlation was small. This relationship was strongest among White gay men. Connectedness was not significantly correlated with the number of sexual minority people in one's network for the other subgroups.

*Discriminant validity.* Evidence for discriminant validity was observed across the subgroups. Connectedness was distinct from a measure of general sociability—the number of people in individuals' social support networks (inclusive of both sexual minority and nonsexual minority individuals) was not correlated with community connectedness. It was also distinct from non-gay African American and Latino group identities—neither was significantly correlated with connectedness to the LGBT community.

*Predictive validity.* Correlational analyses demonstrated only mixed evidence regarding mental health outcomes. Connectedness to the LGBT community was not associated with depression, but was correlated with increased psychological and social well-being. Regarding psychological well-being, we found more robust associations with connectedness among White men and White and Latina women, but not among the other subgroups in the study.

### Group Differences in Connectedness

Means and standard deviations in connectedness to the LGBT community for each intersectional subgroup defined by race or ethnicity and gender are reported in Table 3. There were no gender (men and women) and race or ethnicity (White, Black, and Latino) differences in participants' feelings of connectedness to the LGBT community, $F(1, 395) = 0.33$, $p = .28$ and $F(2, 395) = 0.11$, $p = .69$, respectively; and no gender and race or ethnicity interaction, $F(2, 395) = 0.21$, $p = .47$. We also looked at differences between groups defined by bisexual identity. We found significant differences between gay or lesbian and bisexual identified participants such that bisexuals ($M = 3.08$, $SD = 0.56$) had lesser connectedness than gay men and lesbians ($M = 3.32$ $SD = 0.51$), $t(394) = 3.61$, $p < .001$.

## Discussion

Our findings indicate that scores on a modified version of the Connectedness to the LGBT Community Scale (Barrett & Pollack, 2005; Herek & Glunt, 1995; Stall et al., 2001) demonstrated very good levels of reliability (both internal consistency and stability over time), as well as convergent and discriminant validity. This remained true across the subgroups in the study indicating that scores on the scale are generally reliable and valid for racially and ethnically diverse populations of male and female sexual minority individuals. Our findings also demonstrate the factorial validity of this measure. They suggest that the items in this measure are indicative of an overarching construct of community connectedness that does not structurally vary across multiple and diverse subgroups within sexual minority populations.

The study also demonstrates that the connectedness measure assesses a distinct construct. The scale assesses a feeling of connectedness that is related to, but not completely overlapping with, a general positive feeling (i.e., collective self-esteem) or negative feeling (i.e., internalized homophobia) about one's group membership or sexual identity. It is also related to, but not completely overlapping with, the construct of behavioral participation in the LGBT community.

Although the study found evidence for the predictive validity of the scale, this evidence was mixed. The measure was moderately, though inconsistently, correlated with psychological well-being—an indicator of self-actualization one would expect would be associated with positive community affiliation (Ryan & Deci, 2001)—and with social well-being, which are both indicators of functional mental health (Keyes, 1998). However, the measure was not correlated with depression—a negative indicator of mental health. Predictive validity is a function of the accuracy of our theoretical prediction, as well as the measure's psychometric qualities. It is possible that connectedness is not associated with depressive symptoms and, therefore, was not a good test of the scale's predictive validity. Future research is necessary to determine whether these inconsistencies are a function of the measure. Additional outcomes of mental, as well as physical, health—both subjective and objective—would also help answer these questions. Future studies should further investigate the extent to which connectedness to the LGBT community explains unique variance in such outcomes, above and beyond other types of affiliation.

The findings from the CFA demonstrate the benefits of adding item number 8 regarding connections to same-gender similar others (developed by Herek & Glunt, 1995) to the UMHS version of the scale. This item's change in referent was incorporated to ensure the scale was able to assess connectedness in ways that may or may not fit within a more expansive notion of community implied by "NYC's LGBT community." This item allows for a more nuanced consideration of a case, for example, in which a gay man may identify only with other gay men but not with the LGBT community as a whole. That the item did not have distinct psychometric qualities suggests that this is not a common occurrence; that is, there is a strong relationship between participants' feelings toward their own gender or sexual orientation group and the larger construct of LGBT community. Thus, feeling connected to same-gender

similar others represents a relevant component of the larger construct universe of connectedness to the LGBT community.

Given these findings, we suggest that the measure offers advantages over other measures of connectedness to the LGBT community, such as the Psychological Sense of Community scale developed by Proescholdbell et al. (2006). For example, this measure is brief, making it ideal for use in large-scale population surveys; it was developed specifically for use within LGBT populations, not augmented from preexisting scales developed among heterosexual populations, so it is more sensitive to LGBT-specific themes. It is also adaptable, as instructional prompts can be modified to capture a sense of connectedness to the ''LGBT community'' in general, subsets of the community (e.g., ''gay men''); or geospecific communities, such as ''New York City's LGBT community,'' as examined in this study. Future research is necessary to confirm these claims.

The study demonstrated no significant differences in levels of connectedness based on race and ethnicity. This is perhaps related to the pliability of the measure. Respondents were asked about the ''LGBT community,'' but this was not defined for them. It is plausible that participants referred to the LGBT community with which they were most familiar, which, of course, should not be assumed to be a *White* LGBT community. For example, recent research has demonstrated that sexual minorities of color can have strong racial or ethnic *and* sexual identities (Meyer & Ouellette, 2009; Moore, 2010; Stirratt, Meyer, Ouellette, & Gara, 2008), suggesting the ability to feel connected to sexual minority communities that include and are inclusive of people of color. Findings of no difference in connectedness based on race and ethnicity may also be related to the fact that New York City has historically well-established sexual minority communities of color (Hawkeswood, 1996; Silberman, 2001).

However, it is important to remember that the scale was applied uniformly to all participants. It is possible that there are other important elements of identification and connection with the community that are unique to racial and ethnic communities. The scale in its current form would not capture such unique elements. Because the measure was developed among primarily White gay and bisexual men, studies are needed that would determine whether or not there may be unique aspects of community connectedness among sexual minority men and women of color that are not currently accounted for in the existing measure.

### Limitations

Given this sample was a community sample recruited with the incentive of helping to understand problems in the gay community, it is plausible that our sample overrepresents sense of connectedness to the community. Also, our results are limited by the context of New York City and may not be reflective of other, especially suburban and rural sexual minority communities. We assessed the sense of connectedness of our respondents—who were lesbian, gay, or bisexual—with the generic LGBT community. It is important to note, however, that we did not assess this among transgender people themselves. We cannot speculate on how the measure would perform for transgender individuals. As others have suggested, we were able to demonstrate differences in connectedness to the LGBT community by sexual orientation, with bisexuals reporting less connectedness (Balsam & Mohr, 2007). However, we did not design the study to assess differences by sexual identity and were not able because of sample size to assess this within the various intersectional subgroups. Finally, we did not include other important subgroups, such as Asian-American LGBT individuals, who may also be at risk for being marginalized from the larger LGBT community (e.g., Ridge, Hee, & Minichiello, 1999). Future studies should examine whether these and other geographic and sociohistorical differences among sexual minority individuals affect the reliability and validity of the measure, as community connectedness depends on the opportunities for and risks and rewards associated with such connections. For example, intergenerational and life-course differences should be expected and may affect the measure's properties (Frost & Meyer, 2009; Kertzner et al., 2009; Van Dyke & Cress, 2006).

The items in the measure were included to represent various subdomains of community connectedness. Although the subdomains represented first order factors within the second-order factor structure, the scores on these factors did not demonstrate adequate reliability, indicating that these factors should not be analyzed separately as subscales of community connectedness. Lack of internal consistency in this regard may be attributable to the small number of items in each factor, and future efforts should focus in determining whether these subdomains do represent separate constructs within the overarching construct of community connectedness. Tests of measurement invariance across subgroups may have been attenuated by the size of the subgroups; thus, future research should attempt to validate the proposed factor structure with larger subsamples (Costello & Osborne, 2005).

## Conclusion

Scores on the measure of Connectedness to the LGBT Community proved to demonstrate high degrees of reliability and validity. This instrument allows researchers to distinguish between a sense of connectedness to the LGBT community and other types of sociability, as well as more behavior-based aspects of connectedness. Additional research is necessary to further demonstrate

the measure's ability to account for the experiences of diverse groups of sexual minority individuals. Despite its possible limitations, this measure potentially gives researchers and practitioners a level of precision that more generalized measures do not allow for, and can help in investigations of more specific hypotheses regarding associations between connectedness and important outcomes among sexual minority individuals. Most importantly, the results suggest that the scale can potentially be used in diverse subgroups of sexual minorities in terms of gender and race or ethnicity. As community and social context increasingly become a focus of LGBT research and practice, the Connectedness to the LGBT Community Scale represents an instrument that can be of use to many investigators in the field.

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