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Negative Attitudes Toward Same-Sex Behavior Inventory: An Internalized Homonegativity Measure for Research with Bisexual, Gay, and other Non-Gay Identified Men who have Sex with Men

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Abstract

Substantial evidence exists about the negative role of internalized homonegativity on the health and well-being of lesbian women and gay men. However, existing measures of internalized homonegativity assume a gay or lesbian sexual identity ("I wish I wasn't gay") and therefore may be inappropriate for non-gay identified individuals, including bisexual people. Therefore, we developed and tested the psychometric properties of the Negative Attitudes Towards Same-Sex Behavior Inventory (NATSBI) which was designed to assess one's negative attitudes towards their same-sex behavior, regardless of their self-identification. Using data from an ethnically-diverse sample of 203 non-gay identified behaviorally-bisexual men, we examined the factor structure, construct validity, and reliability of the NATSBI. A factor analysis of the NATSBI yielded three subscales: (1) personal homonegativity, (2) disclosure discomfort, and (3) privacy preference, with very good internal consistency reliability estimates for both subscales ($\alpha = .90$, $\alpha = .89$, and $\alpha = .$ 84, respectively). The reliability was also strong within each of various demographic subgroups within the sample (e.g., race/ethnicity, age, sexual identity). The correlations of the NATSBI with various constructs (e.g., self-esteem, depression, emotional support) provided evidence of the concurrent (i.e., construct) validity of the NATSBI. These findings on the reliability and validity of the NATSBI suggest that it is possible to assess internalized homonegativity based on sexual behavior rather than assuming specific sexual identity labels. As such, we propose the NATSBI for use in studies that focus on bisexual and other non-gay-identified MSM, as well as studies that anticipate including non-gay-identified MSM.

Keywords

Internalized homonegativity; same-sex behavior; bisexuality; scale development

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INTRODUCTION

To this day, same-sex sexual behaviors are highly stigmatized because of pervasive homophobic and biphobic beliefs, attitudes, and institutions. Homophobia and biphobia (or homonegativity and binegativity) encompass prejudice, stereotypes, differential and unfair treatment, and violence towards lesbian/gay and bisexual individuals, respectively (Herek, 2004; Ochs, 1996). These societal beliefs and attitudes are internalized by individuals who self-identify as non-heterosexual (e.g., bisexual, gay) and/or engage in same-sex sexual behavior (Shidlo, 1994). Various terms have been used to describe these negative beliefs and attitudes toward homosexual features in oneself and in other people, including internalized homophobia (Shidlo, 1994), internalized homonegativity (Mayfield, 2001), internalized sexual stigma (Herek, 2007; Herek, Gillis, & Cogan, 2009), and internalized heterosexism or oppression (Szymanski & Kashubeck-West, 2008). Many researchers and practitioners prefer the term internalized homonegativity because it emphasizes the wider societal factors that shape one's negative attitudes and beliefs about homosexual or bisexual features (e.g., same-sex sexual behavior), rather than personal and "irrational" fear or phobia (Berg, Munthe-Kaas, & Ross, 2016; Herek, 2007; Hudson & Ricketts, 1980; Mayfield, 2001; Russell, 2007; Szymanski & Carr, 2008).

The detrimental effects of internalized homonegativity or binegativity on various mental and physical health outcomes have been well-documented, particularly lesbian and gay people, and to a lesser extent, bisexual individuals. Among others, internalized homonegativity is associated with poorer mental health (e.g., depression and anxiety; Kaysen et al., 2014; Lewis, Derlega, Griffin, & Krowinski, 2003; McLaren, 2016; Meyer, 2003; Molina et al., 2015; Puckett, Levitt, Horne, & Hayes-Skelton, 2015; Rosario, Schrimshaw, Hunter, & Gwadz, 2002; Szymanski & Kashubeck-West, 2008), lower well-being and social support (Balsam & Mohr, 2007), nondisclosure of bisexual identity (Stokes, McKirnan, & Burzette, 1993), greater concealment and lower identity affirmation (Costa, Pereira, & Leal, 2013; Mohr & Kendra, 2011; Pistella et al., 2016), self-esteem (Kimmel & Mahalik, 2005; Rowen & Malcolm, 2003; Szymanski & Gupta, 2009; Szymanski & Kashubeck-West, 2008), substance abuse (Brubaker, Garrett, & Dew, 2009; Hequembourg & Dearing, 2013), suicide and suicidal ideation (McLaren, 2016; Paul et al., 2002), risky sexual behavior (Amola & Grimmett, 2015; Crosby, Salazar, Mena, & Geter, 2016; Newcomb & Mustanski, 2011; Ross, Kajubi, Mandel, McFarland, & Raymond, 2013) and difficulty in intimate relationships (Balsam & Szymanski, 2005; Frost & Meyer, 2009; Otis, Rostosky, Riggle, & Hamrin, 2006). Some researchers even suggested that avoidance of relationships and intimacy, anonymous sex, hypersexual behavior, and substance use can all serve as a distraction from dealing with one's internalized homonegativity (Coleman, Rosser, & Strapko, 1992).

Other studies have shown that bisexual individuals report higher levels of internalized homonegativity compared to non-bisexual individuals (Cox, Berghe, Dewaele, & Vincke, 2010; Kuyper & Fokkema, 2011; Sarno & Wright, 2013). Specifically, among bisexual individuals, internalized binegativity was found to be positively associated with depression (Paul, Smith, Mohr, & Ross, 2014), psychological distress and a greater number of antibisexual experiences (Brewster & Moradi, 2010), and inversely related to life satisfaction

(Sheets & Mohr, 2009), outness (level of being out as bisexual; Paul et al., 2014), identity congruence (Hoang, Holloway, & Mendoza, 2011), and sexuality-specific support from friends and family (Sheets & Mohr, 2009). Moreover, the internalization of homonegative and binegative attitudes may impede the development of a healthy and positive sexual identity (Firestein, 2007; Fox, 1991).

Despite the pervasive negative effects of internalized homonegativity on the health and wellbeing of lesbian women and gay men, the applicability of this construct to bisexual and other non-gay identified individuals remains unclear as most research on this construct has been conducted primarily with gay-identified men (Israel & Mohr, 2004; Newcomb & Mustanski, 2011; Russell & Bohan, 2006), and to a lesser extent with lesbian-identified women (Szymanski & Chung, 2001). This issue raises concerns about the measurement of internalized homonegativity and its validity when used in samples comprised of people other than gay men, such as bisexual men and other men who have sex with men (MSM) who do not identify as gay. It could be argued that Shidlo's (1994) definition of internalized homophobia (i.e. homonegativity) noted earlier uses the term "homosexual features," which may include same-sex sexual behavior. As such, the construct of internalized homonegativity may include one's negative attitudes towards their own same-sex sexual behavior. However, most measures of internalized homonegativity assume the relevance of this construct only to people who self-identify as gay or lesbian, regardless of their sexual behavior.

Previously, only two valid and reliable scales have been developed that include a subscale assessing internalized homonegativity or binegativity among bisexual individuals. The first, the Lesbian, Gay, and Bisexual Identity Scale (LGBIS; Mohr & Kendra, 2011) is a measure that assesses facets of sexual minority identity, including an internalized homonegativity subscale, that was validated, and is therefore, appropriate for use with bisexual individuals. The second, the Bisexual Identity Inventory (BII; Paul et al., 2014) measures various facets of bisexual identity, including a subscale assessing internalized binegativity, and was validated with bisexual individuals. Despite the applicability of the LGBIS and BII to bisexual individuals, they both assume a bisexual self-identification which limits their applicability to non-bisexual identified individuals. They are also limited in their use with mixed sexual orientation samples (e.g., gay and bisexual men) in that the item content must be tailored for participants of each sexual identity rather than a single scale that is applicable to all identity groups.

The reliance on measures of internalized homonegativity or binegativity that assume a bisexual or gay identity is particularly problematic when studying subgroups of behaviorally bisexual men, some of whom may not identify as bisexual. For example, behaviorally-bisexual men who identify as heterosexual may be particularly likely to experience high levels of internalized homonegativity (Schrimshaw, Siegel, Downing, & Parsons, 2013; Reback & Larkins, 2010), as well as potential consequences of internalized heterosexism (e.g., less disclosure, greater psychological distress; Kalichman, Roffman, Picciano, & Bolan, 1998; Stokes, McKirnan, Doll, & Burzette, 1996; Vrangalova & Savin-Williams, 2014), making them a critically understudied segment of the bisexual population. Yet studies of this bisexual subgroup (or studies of bisexuals that include this subgroup) are hampered

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because existing measures (that assume a gay or bisexual identification) would be inappropriate for this subgroup of bisexuals. For these reasons, examining and developing valid and reliable measures for assessing internalized negative attitudes towards same-sex behavior among individuals who do not necessarily identify as gay or bisexual are warranted.

More generally, a large proportion of research (especially health-related research) has shifted its focus from the sexual identity of the person (e.g., gay) to their sexual behavior (e.g., man who have sex with men; MSM) (Young & Meyer, 2005). For example, in HIV-related studies, sexual behavior (e.g., condomless sex among MSM) may be the variable of interest, regardless of the participants' sexual identity. Therefore, these studies may include participants who do not identify as gay or bisexual, but nonetheless, engage in same-sex sexual behavior. Likewise, studies focusing on non-gay-identified individuals (e.g., bisexual, pansexual, queer, questioning) would require the use of an internalized homonegativity measure that does not presuppose a gay self-identification (Schrimshaw et al., 2013). Despite the change in research from a focus on exclusively gay/lesbian identified participants to include individuals with more diverse identities, the conceptualization and measurement of internalized homonegativity are still focused on negative attitudes toward one's own gay/lesbian identity. This mismatch between the conceptualization and measurement of internalized homonegativity raises methodological concerns with regard to the construct validity of the measures (DeVellis, 2016).

Considering the research gaps and measurement concerns discussed above, the present study's aim was to develop and validate a scale measuring respondents' negative attitudes toward their same-sex sexual behavior, regardless of their self-identification. In this paper, we present the Negative Attitudes Toward Same-Sex Behavior Inventory, a modified version of the Revised Nungesser Homosexual Attitudes Inventory (RNHAI; Shidlo, 1994), as well as the assessment of the scale's psychometric properties among a diverse sample of non-gay identified behaviorally-bisexual men.

METHOD

Participants

As part of a larger mixed-methods study of non-gay identified behaviorally-bisexual men, a total of 203 men participated in the study, of which 115 (57%) self-identified as bisexual. Eligible men had to: 1) be 18 years of age or older; 2) not identify as gay; 3) report having had anal or oral sex with a man in the past year; 4) report having had vaginal, anal, or oral sex in the past year with a woman who (at the time) they were married to or had a relationship with (e.g., girlfriend or regular sexual partner) lasting three months or longer; 5) not have disclosed their same-sex behavior to any of their female partners with whom they had sex in the past year; 6) reside in the New York City area. Sample characteristics are presented in Table 1.

The study sought to examine a subgroup of behaviorally bisexual men who did not disclose their sexual orientation to female partners, as it was anticipated that such concealment would have negative implications for social support, internalized homonegativity, mental health,

substance use, and sexual risk behaviors. Bisexual men in a relationship with a female partner are less likely than men who are not in a relationship to disclose their same-sex behavior to friends and family, as well as female partners (Kalichman et al, 1998; Stokes et al., 1996). Thus, the decision was made to focus on men who were in a relationship (or had recently been in one) with a woman and who had not disclosed to any of their female partners in the past year. No constraints were placed on the level of emotional commitment of this relationship; thus, men were included if they reported a regular sexual (but not necessarily romantic) relationship with a woman. Quota sampling was employed to obtain approximately equal numbers of African American, Latino, and White men, and as many Asian and Native American men as possible.

Procedure

Given that bisexual men are considered a hard-to-reach population (Fisher, Purcell, Hoff, Parsons, & O'Leary, 2006), multiple recruitment strategies were employed to obtain the desired sample size. The 203 men who completed data collection were recruited through various sources, specifically, 57% through Internet-based sampling, followed by print advertisements (19%), having a recruitment card passed on to them by a non-participant (14%), and venue-based sampling (10%). A targeted sampling approach (Watters & Biernacki, 1989) was employed in which venues or websites were randomly selected as recruitment sites from a larger sampling frame. These venues included gay bars, cruising parks, bathhouses, porn video stores, LGB organizations, and community-based HIV organizations. For venue recruitment, an ethnically diverse team of male recruiters approached every man who entered a venue and handed them a card containing study information. Targeting all men in venue helped to eliminate recruiter bias and the perception that individuals were singled out for the study. In addition, men were told "If the card does not apply to you, please pass it on to a friend." This was intended to reduce the stigma of taking a card and allowed for nonparticipant friend referrals since non-gay-identified MSM are more likely to be reached through friend referrals (Fisher et al., 2006). For internet recruitment, study information was posted in several sections of Craigslist.org. Recruitment on various other websites was also attempted, but proved unsuccessful. Advertisements were also placed in a free, daily newspaper with a general readership distributed throughout New York City.

Recruitment materials stated that we were looked to interview men who had sex with both men and women and whose female partners did not know about their sex with men. Recruitment materials also stated the investigators' university affiliation, emphasized confidentiality, and that the participants would receive a \$75 honorarium. Where possible, we provided the study website address for more information and a telephone number for participants to call to be screened for eligibility. Because Craigslist prohibits the posting of telephone numbers or web addresses, participants were asked to email the researchers in order to obtain the telephone number and website address.

Of a total of 685 men screened for eligibility, 397 (58%) were determined to be eligible. Of the 288 men determined to be ineligible, 57% had told a female partner about his same-sex behavior, 26% had no relationship with a woman in the past year, 14% identified as gay or

homosexual, and 13% had been recruited by another study participant. Other reasons for ineligibility (< 10% each) include multiple racial/ethnic identifications, no sex with a man in the past year, no sex with a woman in the past year, no relationship with a woman that lasted 3 months, not living in the New York area, previously participated in the study, identified as female, and under age 18. Out of the 397 eligible men, 324 (82%) men were willing to participate and scheduled an interview. Eighty-eight (27%) of these men failed to show for their interviews and were never able to be rescheduled, resulting in 236 completed interviews. Thirty-three (14%) were excluded from analysis after providing data in their interviews that contradicted their screening data and rendered them ineligible. This resulted in a final sample of 203 eligible men for analysis.

Eligible men were invited to our research offices where they completed a signed informed consent and then a brief interviewer-administered questionnaire (IAQ) that elicited basic demographic data and information to confirm their study eligibility (e.g., sexual identity, sexual behavior with female and male partners in the past year). Next, men were asked to complete a set of quantitative measures administered via audio computer-assisted self-interviewing (ACASI). Finally, men participated in a semi-structured qualitative interview. For the current report, all measures were assessed via ACASI, with the exception of the demographic and descriptive variables described below. Data collection lasted an average of 3.1 hours (SD = 48 minutes; M = 12 minutes for the IAQ, 41 minutes for ACASI, and 134 minutes for the interview) and all were interviewed between August 2007 and March 2010. At the completion of the data collection, participants received \$75 cash and were reimbursed for their transportation costs. All procedures described above were approved by the institutional review boards of the participating universities.

Measures

Demographic Variables.—Participants' were asked about their age, race/ethnicity, household income, education level, marital status, and whether they lived with a female partner.

Internalized homonegativity.—The Negative Attitudes Toward Same-Sex Behavior Inventory (NATSBI) was created based on the Nungesser Homosexual Attitudes Instrument (NHAI; Nungesser, 1983). The NHAI is the first published internalized homonegativity measure, and is the most widely-used scale to measure the construct to this day. For the purposes of this study, we used only two subscales of the NHAI, namely the personal homonegativity and disclosure discomfort subscales. The third subscale measures attitudes toward homosexuality in general rather than toward one's own sexuality, and therefore was excluded because it does not specifically assess internalized homonegativity as it was conceptualized in this study and others. Although Nungesser (1983) conceived of discomfort with disclosure as being a manifestation or indicator of the same negative attitudes toward one's sexual orientation as personal homonegativity, others (e.g., Gonsiorek, 1988) have suggested such discomfort may be a reflection of the realistic assessment of the social environment and the potential risks of disclosure. Given that both subscales have been found to be important predictors of health and well-being in LGB populations (e.g., Rosario et al., 2002; Rosario, Schrimshaw, & Hunter, 2006), we chose to examine both subscales

regardless of whether researchers conceptualized them as part of a single construct or separate constructs. The NHAI contains multiple theoretical domains and the item content taps into multiple possible aspects of internalized homonegativity including fear of disclosing to others, seeking help to change sexuality, and perceived ability to maintain a long-term relationship with a man (Shidlo, 1994). Such diverse item content lends confidence that the NHAI captures various aspects of the construct. Further, the NHAI was later revised by Shidlo (RNHAI; 1994) to update and further improve the content validity such that the measure would better capture societal changes in the public attitude toward homosexuality.

Like other measures of internalized homonegativity, both the NHAI and the RNHAI were developed with samples of gay men (Newcomb & Mustanski, 2011). As such, much of the item content assumes that the participant identifies as gay. Therefore, we further modified the RNHAI (Shidlo, 1994) to assess negative attitudes toward one's same-sex behavior (rather than toward one's gay identity) using a response scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree), such that higher scores reflect higher endorsement of negative attitudes towards same-sex behavior. In order to make the RNHAI appropriate for use with this non-gay identified sample, the RNHAI items were modified from assessing negative attitudes and discomfort toward their sexual identity (e.g., "I wish I wasn't gay") to assessing negative attitudes toward their same-sex behavior (e.g., "I wish I didn't have sex with men") to create the NATSBI. As such, this measure should not be conceived of as a measure of negative attitudes about the men's bisexual identity or bisexual behavior, but rather attitudes about their same-sex behaviors. A total of seven of the original fifteen items of the personal homonegativity subscale were excluded in this study for various reasons: three items were removed because they assessed suicidality (e.g., "I have tried killing myself because I couldn't accept my homosexuality"), two other items were excluded because they referenced the "gay community" which may be inappropriate for this study's sample of nongay identified men (i.e., "I do not feel that I am part of the gay community" and "It's important to me to be part of the gay community"), another item was not included because it was deemed inappropriate for this sample as it referenced a long-term relationship with another man ("I do not think I will be able to have a long-term relationship with another man"), and one item was excluded because it was found to have an extremely low item-total correlation in Shidlo's (1994) validation research (i.e., "I find it important that I read gay books or newspaper"). Thus, the resulting personal homonegativity subscale in this study included eight items from the original RNHAI. One item from the original personal homonegativity was further modified as it referenced engaging in counseling, rather than seeking help more broadly, and was found to have a somewhat low item-total correlation in the original RNHAI development study (Shidlo, 1994). Therefore, the item "I have been in counseling because I wanted to stop having sexual feelings for other men" was modified to "I have sought out help because I wanted to stop having sex with other men." In addition, five of the original 14 items of the disclosure discomfort subscale were excluded because they are inappropriate for a sample a non-gay identified behaviorally-bisexual men (e.g., "If others knew of my homosexuality, I wouldn't worry particularly that they would think of me as effeminate"), resulting in a 9-item subscale of disclosure discomfort.

Depression, Anxiety, and Positive Affect.—In order to better assess the full range of both positive and negative psychological states, the study employed the depressive symptoms (4 items; e.g., "How much of the time, during the past month, have you felt downhearted and blue?"), anxiety-related symptoms (9 items; e.g., "During the past month, have you been anxious or worried?"), and positive affect (10 items; e.g., "During the past month, how much of the time were you a happy person?") subscales of the Mental Health Inventory (MHI; Veit & Ware, 1983). Previous studies have demonstrated the reliability and validity of this measure among gay and bisexual men (Elizur & Ziv, 2001; Kuyper & Fokkema, 2011; Shilo, Antebi, & Mor, 2015). Respondents were asked to indicate how often they experienced any of the listed symptoms during the past thirty days using a six-point Likert scale ranging from 1 (All of the time) to 6 (None of the time) for most of the items. The Depression, Anxiety, and Positive Affect subscales demonstrated very good internal consistency reliability estimates in this study ($\alpha = .89$; .90, and .94, respectively). All items were reverse scored, then the mean score for each subscale was computed, such that higher scores indicated greater frequency of depressive symptoms, anxiety-related symptoms, and positive affect.

Self-Esteem.—The Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965), a ten-item scale to assess respondents' self-esteem was employed as it was previously used among gay and bisexual men (Huebner, Rebchook, & Kegels, 2004). Prior studies have reported the RSE's validity (Robins, Hendin, & Trzesniewski, 2001) and internal consistency reliability estimates ranging from .72 to .88 (Gray-Little, Williams, & Hancock, 1997). Items were presented on a 4-point Likert scale ranging from 1 (*Strongly disagree*) to 4 (*Strongly agree*), and 5 of the items were reverse-coded (e.g., "All in all, I am inclined to feel that I am failure"). The mean self-esteem score was computed, such that higher scores indicated higher levels of self-esteem ($\alpha = .88$).

General Emotional Support and Emotional Support for Same-Sex Behavior.-

Perceived general emotional support was assessed using five items from the Social Support Survey (Sherbourne & Stewart, 1991) which has demonstrated reliability and validity among gay and bisexual men (Fleishman et al., 2000). In order to measure emotional support regarding same-sex behavior, we modified the same five items by specifying this type of support. A sample item assessing general emotional support: "Someone to share your most private thoughts and concerns with" was modified to "Someone to share your most private thoughts and concerns about your sex with men with" to assess emotional support regarding same-sex behavior. Both measures employed a 5-point Likert scale ranging from 1 (*None of the Time*) to 5 (*All of the Time*). For both measures, the mean score was computed such that higher scores indicating greater general emotional support ($\alpha = .94$) or greater emotional support for their same-sex behavior ($\alpha = .98$).

Disclosure to Friends and Family.—We used a modified version of Zea and colleagues' (2005) measure of disclosure of HIV status to assess respondents' direct and indirect disclosure of same-sex behavior to members of their social network (i.e., mother, father, best male friend, and best female friend). For each of these four social network members, participants were asked "Does your [mother/father/best male friend/best female

friend] know that you have sex with men?" responding as either yes, no, or not applicable (e.g., mother passed away). For those who indicated yes, a follow-up question was asked: "Who told your [mother/father/best male friend/best female friend] that you have sex with men?" Participants responded as either he had told her, someone else told her, or she found out some other way. Disclosure to female sexual partners was not assessed because per eligibility requirements, none of this study's participants had disclosed their same-sex behavior to any of their female sexual partners in the past year. For analysis purposes, we defined disclosure as both direct disclosures (e.g., had told the person) as well as indirect disclosures (i.e., whether or not each person knows that the participant has sex with men regardless of how they found out). Level of direct disclosure to friends and family was computed as a count of the number of family and friends "told" ($\alpha = .63$) and level of indirect disclosure was computed as a count of the number of family and friends who know; $\alpha = .$ 67). Responses to both subscales ranged between 0–4 as a count, with higher scores reflecting disclosure of same-sex sexual behavior to a greater number of friends and family.

Concealment.—Participants' level of concealment of their same-sex sexual behavior was assessed using a modified version of the Self-Concealment Scale (SCS; Larson & Chastain, 1990). Since the original SCS assessed concealment in general ("There are things I haven't shared with anyone"), we modified its items to focus on concealment of same-sex behavior ("I haven't shared with anyone that I have sex with other men") and used the original 5-point Likert response scale (1 = Strongly Disagree to 5 = Strongly Agree). The original SCS comprised of 10 items that assess concealment in general, and it was found to be valid and reliable for use with bisexual and gay men (Potoczniak et al., 2007). A factor analysis conducted as part of a previous study with this sample (Schrimshaw et al., 2013) revealed that 7 of the ten items loaded on a single factor (Eigenvalue = 3. 52, explaining 35.2% of the variance) with factor loadings ranging between .58 and .79. The remaining 3 items (e.g., "Hiding the fact that I have sex with men has been really stressful") were dropped from the scale given their low loadings (between –.25 and .13). The mean of the 7 items was computed such that higher scores indicated greater concealment ($\alpha = .81$).

Data Analysis

Descriptive statistics were computed for all variables. All analyses were performed on the full sample of eligible cases using casewise deletion unless otherwise noted. We first conducted a principal axis factor (PAF) analysis with the initial seventeen NATSBI items using exploratory factor analysis (EFA) procedures in SPSS (Version 24). PAF analysis was used to reveal the latent constructs that account for the shared variance among the scale items. This procedure was recommended for the development of new scales, and was found to be superior to a principal components analysis (PCA) in estimating factor loadings and number of factors to retain (Worthington & Whittaker, 2006). An oblique rotation (Promax) was used as it is recommended for when factors are expected to be correlated (Tabachnick & Fidell, 2007). Factors with eigenvalues exceeding 1.0 were retained. The number of factors were further confirming by analyzing the corresponding scree plot.

After removing one item due to low factor loadings, we conducted another PAF analysis using the remaining 16 modified items, and following the same procedures described above. Item-total correlations were performed to examine whether any of the final 16 items is inconsistent with the average of the other items. Internal consistency reliability estimates of both subscales were analyzed using Cronbach's alpha for both the full sample and various subgroups. To assess the construct (i.e., concurrent and discriminant) validity of the NATSBI, we examined the correlations of NATSBI scores with other theoretically- and empirically-relevant constructs (i.e., measures) included in this study using two-tailed Pearson correlations.

RESULTS

Exploratory Factor Analysis

A Principal Axis Factor (PAF) analysis of all 17 of the provisional items of the NATSBI revealed the presence of three factors with eigenvalues exceeding 1.0. Specifically, the first factor had an eigenvalue of 6.82, the second 3.05, and the third 1.20, explaining 40.12%, 17.95%, and 7.04% of the variance, respectively. The scree plot was simultaneously analyzed to confirm the retention of three factors. Items with factor loadings greater than .45 were considered to load on the factor. Eight items loaded on one factor, reflecting the personal homonegativity subscale, 5 items loaded on the second factor, reflecting the disclosure discomfort of the original RNHAI, and 3 items loaded on a third factor, reflecting the new privacy preference subscale. No items were found to double load based on the criteria of a secondary loading greater than .35. However, one item had low factor loadings on both the second (.27) and third (.39) factors, and was removed.

The remaining 16 modified items were subjected to a second PAF. All three factors had an eigenvalue exceeding 1.0. Specifically, the first factor had an eigenvalue of 6.63, the second 2.89, and the third 1.19, explaining 41.46%, 18.09%, and 7.46% of the variance, respectively. The scree plot was also examined to confirm the retention of three factors. Eight items loaded on the first factor, reflecting the personal homonegativity subscale, five items loaded on the second factor, reflecting the disclosure discomfort of the original RNHAI, and three items loaded on the third factor, the privacy preference subscale. Factor loadings, item wording, and item descriptive statistics of the 16 items included in the final version of the NATSBI are presented in Table 2.

Internal Consistency Reliability

The reliability analyses of the NATSBI were conducted separately for each of the three subscales. The personal homonegativity demonstrated a high internal consistency estimate ($\alpha = .90$), which is identical to Cronbach's alpha of the original RNAHI reported by Shidlo (1994). The Cronbach's alpha for both the disclosure discomfort and privacy preference subscales were very good ($\alpha = .89$ and .84, respectively). Item-total correlations are shown in Table 2 along with the factor structure loadings and item descriptive statistics.

In order to examine potential differences in internal consistency reliability estimates for various demographic groups, we conducted separate reliability analyses for various

demographic groups, including race/ethnicity. These Cronbach's alphas and the corresponding 95% confidence intervals are presented in Table 3. In general, all three subscales of the NATSBI were found to have good internal consistency estimates for all demographic subgroups, ranging between $\alpha = .81$ and .94, with two exceptions. The Cronbach's alphas on the disclosure discomfort ($\alpha = .77$) and privacy preference ($\alpha = .70$) subscales were lower for heterosexually-identified compared to bisexually-identified participants. Regardless of these demographic differences, the internal consistency reliability estimates were acceptable to high for all demographic groups, with all estimates exceeding the .70 cut-off point (DeVellis, 2016).

Construct Validity

Since the NATSBI is designed to assess negative attitudes toward individuals' same-sex sexual behaviors, and not identity as traditionally measured, evidence of construct validity was examined. Based on previous studies discussed earlier in greater detail that documented the associations between internalized homonegativity or binegativity with various constructs and measures, construct validity of the NATSBI was tested by examining the associations with: (1) mental health indicators, specifically depression, anxiety, and positive affect (Balsam & Mohr, 2007; Brewster & Moradi, 2010; Kaysen et al., 2014; Lewis et al., 2003; McLaren, 2016; Meyer, 2003; Molina et al., 2015; Paul et al., 2014; Puckett et al., 2015; Rosario et al., 2002; Szymanski & Kashubeck-West, 2008); (2) disclosure and concealment of same-sex sexual behavior (Costa et al., 2013; Mohr & Kendra, 2011; Paul et al., 2014; Pistella et al., 2016; Stokes et al., 1993); (3) general emotional support and sex-specific emotional support (Balsam & Mohr, 2007; Sheets & Mohr, 2009), and (4) self-esteem (Kimmel & Mahalik, 2005; Rowen & Malcolm, 2003; Szymanski & Gupta, 2009; Szymanski & Kashubeck-West, 2008). Construct validity includes two main subtypes of validity: convergent and discriminant. Convergent validity refers to observed correlations between the NATSBI and other constructs that are theoretically related and therefore expected to be related to the NATSBI. Conversely, discriminant validity refers to the lack of correlation between the NATSBI and measures that that are not supposed to be related to it (DeVellis, 2016). Therefore, positive correlations between subscales of the NATSBI and measures of depression, anxiety, and concealment would provide evidence of the convergent validity of the NATSBI. Furthermore, negative associations between the two subscales of the NATSBI and measures of positive affect, self-esteem, overall emotional support, sex-specific emotional support, and disclosure to friends and family would provide further evidence of convergent validity of the NATSBI.

As shown in Table 4, personal homonegativity (as assessed by scores on the first subscale of the NATSBI) and disclosure discomfort (the second subscale of the NATSBI) demonstrated strong construct validity with other relevant measures. As would be expected, both subscales were positively correlated with measures of depressive and anxious symptoms and with greater concealment. Evidence of construct validity was also demonstrated by both subscales being - negatively correlated with measures of positive affect, self-esteem, sex-specific emotional support, and direct and indirect disclosure to friends and family. The third subscale, privacy preference, was negatively related to positive affect, sex-specific emotional support, direct and indirect disclosure of same-sex sexual behavior, and positively associated

with concealment. Thus, the new subscale, privacy preference, also demonstrated good construct validity. Inter-correlations between the study measures are also presented in Table 4.

DISCUSSION

In an effort to address the measurement concerns of internalized homonegativity among populations of bisexual-identified, non-bisexual identified, and other non-gay-identified individuals who engage in same-sex sexual behavior, the Negative Attitudes Toward Same-Sex Behavior Inventory (NATSBI) was developed and validated. Our findings in this sample of behaviorally bisexual men lend preliminary support to the construct validity of the 16item NATSBI, as well as reliability among various demographic groups (e.g., heterosexual-identified; Black and Latino; married to a woman) of behaviorally bisexual men. Thus, these findings provide initial, yet significant, evidence for use of the NATSBI to assess internalized homonegativity among behaviorally bisexual men, but may also be more broadly useful in samples of MSM with various sexual identifies (e.g., gay, bisexual, queer, heterosexual).

Consistent with the concern that motivated the development of the NATSBI regarding the applicability of traditional internalized homonegativity measures to certain groups of people who engage in same-sex behavior (i.e., non-bisexual/non-gay identified MSM), which could potentially lead to unreliable responses, we specifically examined subgroup differences in the reliability estimates of the NATSBI. Not only did we find very good internal consistency reliability estimates in the full sample on all three subscales of the NATSBI, our findings demonstrated very good reliability when examined separately by age, sexual identity, race/ ethnicity, marital status, relationship status, and education. This is particularly critical as it cannot necessarily be assumed that measures that are reliable for educated White MSM would be reliable for use among heterosexual-identified, young adult, or Black or Latino MSM. Although we did find a somewhat lower internal consistency estimates among heterosexual-identified men on the disclosure discomfort and privacy preference subscale, even these met or exceeded the generally accepted cut point of $\alpha = .70$ for adequate internal consistency reliability. Future research on the NATSBI (and other internalized homonegativity measures) would benefit from examining whether these groups consistently have lower internal consistency reliability estimates responses or whether this was due to outliers in this sample.

In addition to the reliability of the NATSBI, we further investigated the convergent (i.e., construct) validity of the measure. The personal homonegativity and disclosure discomfort subscales of the NATSBI were significantly correlated with other psychological measures that are theoretically and empirically relevant to internalized homonegativity in both bisexual and non-bisexual individuals. Similar to this study's findings, prior studies have found that higher levels of internalized homonegativity were related to lower self-esteem (Kimmel & Mahalik, 2005; Rowen & Malcolm, 2003; Szymanski & Gupta, 2009; Szymanski & Kashubeck-West, 2008), lower levels of disclosure of sexual identity or samesex sexual behavior disclosure (Lingiardi, Baiocco, & Nardelli, 2012; Moradi et al., 2010; Rostosky & Riggle, 2002), decreased positive affect (Herek et al., 2009; Symanski & Gupta,

2009), and lower general emotional support (Lehavot & Simoni, 2011; Szymanski, Chung, & Balsam, 2001; Szymanski & Kashubeck-West, 2008). Positive associations between internalized homonegativity and numerous variables were also found in this study, including depression, anxiety, and concealment, thereby providing further evidence for these relationships as reported in past studies (Kaysen et al., 2014; Lehavot & Simoni, 2011; Lewis et al., 2003; Lingiardi et al., 2012; McLaren, 2016; Newcomb & Mustanski, 2011; Puckett et al., 2015; Rosario et al., 2002; Szymanski & Kashubeck-West, 2008; Walch, Ngamake, Bovornusvakool, & Walker, 2016). As such, these findings suggest that the NATSBI, despite being redesigned to assess attitudes toward same-sex behavior and disclosure of same-sex behavior, exhibits a pattern of correlations similar to those of other measures of internalized homonegativity.

The findings of the current study also revealed a third subscale assessing participants' preference for not disclosing and privacy about their same-sex sexual behavior. Unlike the items on the disclosure discomfort subscale (which all reflect negative emotional reactions to disclosure), endorsement of the privacy preference items reflect a preference for not disclosing (e.g., "wouldn't mind" - reverse scored) but lacked the strong emotional reactions present in the disclosure discomfort subscale. Consistent with this interpretation, whereas the personal homonegatively and disclosure discomfort subscales were correlated with measures of depression, anxiety, self-esteem, and general social support, the privacy preference subscale was not significantly correlated with these measures. Although the preference to not disclose by bisexual individuals (broadly definded) has been found to be motivated by fears of stigmatization and rejection (Mulick & Wright, 2002; Sarno & Wright, 2013; Schrimshaw, Downing, & Cohn, 2018) and a preference for privacy about one's sexuality, sexual behavior, and personal life (Schrimshaw, Downing, Cohn, & Siegel, 2014), others have suggested that nondisclosure and need for privacy are due to, or a component of, internalized homonegativity (Nungesser, 1983; Sarno & Wright, 2013). Consistent with this view, all three NATSBI subscales (including privacy preference) were negatively related to direct and indirect disclosure of same-sex sexual behavior and sex-specific emotional support, and positively associated with concealment.

Overall, these findings preliminarily suggest that the NATSBI assesses a new operationalization of internalized homonegativity, that is, negative attitudes towards same-sex sexual behavior. As such, the NATSBI may be useful in measuring internalized homonegative attitudes towards same-sex sexual behavior, and thereby facilitates further research elucidating the role of internalized homonegativity in the health and well-being of behaviorally-bisexual men and other non-gay identified MSM.

Implications

The findings of this study have several research and practical implications. Given that the NATSBI demonstrated very good internal consistency reliability and adequate construct validity without assuming a gay self-identification, we recommend its use in studies about or with both gay-identified and non-gay-identified individuals who engage in same-sex behavior, including bisexual and heterosexual MSM. We further propose using the NATSBI instead of previously established measures of internalized homonegativity (e.g., NHAI;

Nungesser, 1983) in research with general samples of individuals who engage in same-sex sexual behavior. Our findings lend initial support to the usefulness of the NATSBI in samples of individuals who engage in same-sex behavior from diverse racial/ethnic backgrounds, ages, sexual identities, and educational attainment, among other demographic characteristics. It should be noted that we do not propose that the NATSBI should replace all previously established measures of internalized homonegativity, but rather that researchers should select the most appropriate measure to assess this construct depending on the populations and outcomes of interest in the specific study. For example, in studies examining the association between internalized homonegativity and the formation of a gay identity, measures of internalized homonegativity that assume a gay self-identification may be more helpful than the NATSBI, as it is possible that not all participants have engaged in same-sex sexual behavior.

Similarly, the NATSBI may be valuable to use in clinical settings. Specifically, therapists and health care providers working with individuals who engage in same-sex sexual behavior would benefit from assessing their clients' level of internalized homonegativity regarding their same-sex behavior as it was found to be strongly related to numerous mental and physical health outcomes, as discussed above (for review, Lick, Durso, & Johnson, 2013; Newcomb & Mustanski, 2011). In addition, the NATSBI is somewhat brief, simple to understand, and quite easy to score, which lends support to its use in various clinical settings. The NATSBI may be of particular interest to mental health professionals working with certain subgroups on the broader bisexual spectrum (e.g., non-bisexual identified MSMW) as their presentation of internalized homonegativity and binegativity and its association to mental health and well-being may differ from those who identify or wish to identify as bisexual (Dworkin, 2001). For example, since bisexual individuals experience discrimination and rejection from both the heterosexual and gay and lesbian populations, they face double stigma, which may render them more vulnerable to internalizing negative attitudes towards their same-sex behaviors, and thereby, develop mental health concerns (Mulick & Wright, 2002; Sarno & Wright, 2013).

Limitations

The strengths of the current study should be interpreted in light of its limitations. Although the study sample was diverse in terms of sexual identity, race/ethnicity, and other important factors, the sample was restricted to non-gay-identified, non-disclosing, behaviorally bisexual men. This potentially restricts the generalizability of our findings to this subgroup of behaviorally bisexual men. It is possible that the manifestation of internalized homonegativity among this specific population is unique. However, our findings about the correlates of the NATSBI in this population were consistent with prior research on internalized homonegativity with other gay, lesbian, and MSM populations. Relatedly, the sample of the current study included only bisexual men who resided in the New York City area. Future studies using the NATSBI with other sexual orientation groups, such as gay, lesbian, queer, and pansexual individuals, and in other locations are needed. Such studies would benefit from recruiting a larger sample than this study's sample size given the importance of sample size in psychometric studies. Of particular interest are studies that test the association of the NATSBI with an established measure of internalized homonegativity,

such as the RNHAI (Shidlo, 1994) when conducted with gay-identified samples. Such an investigation would explore the negative attitudes of men toward their gay identity and same-sex behavior, thereby allowing an examination of the unique association between each of these constructs and health outcomes (e.g., depression, sexual risk behavior). These studies could also include specific measures, such as sexuality-related rejection sensitivity (Pachankis, Goldfried, & Ramrattan, 2008) and stigma consciousness (Pinel, 1999), that will further elucidate the discriminant validity of the NATSBI as it was not directly tested in this study.

Likewise, studies examining the reliability and validity of the NATSBI with women who engage in same-sex behavior, including behaviorally-bisexual women, are warranted as other internalized homonegativity measures for women who engage in same-sex sexual behavior assume lesbian self-identification (e.g., the Lesbian Internalized Homophobia Scale; Szymanski & Chung, 2001), and thus, might not be applicable to bisexual women. When studying internalized homonegativity among bisexual, lesbian, and other women who engage in same-sex sexual behavior, it is important to note that the manifestations of internalized homonegativity among bisexual and lesbian women might differ from those of bisexual, gay, and other men who engage in same-sex sexual behavior as they experience dual stigma of being a woman and a lesbian.

In addition, responses to some of the NATSBI items may reflect other sources of stress that are not due to internalized homonegativity. Rather, these responses might be unique to this study's participants, which per the eligibility criteria, had not disclosed their same-sex sexual behavior to their female partners. Thus, it could be speculated that a strong agreement with the item "Whenever I think a lot about the fact that I have sex with men, I am critical of myself" may reflect internalized homonegativity, but also a sense of guilt for engaging in same-sex sexual behavior and/or not telling their female partner. This speculation raises the possibility that scores on the personal homonegativity subscale may reflect internalized homonegativity, infidelity-related distress, or both. Further studies examining the association between the NATSBI and infidelity-related distress measures could potentially address this issue, especially in light of research showing that bisexual women who reported infidelity had higher scores of internalized binegativity (Hoang et al., 2011), which could possibly be true for men as well.

Lastly, the potential for self-selection bias is another limitation of the present study as men who self-refer into research studies may not fully represent the true population of interest. That being said, given the limited amount of research about and lack of measures assessing one's negative attitudes toward their own same-sex behavior (especially among bisexual men), these findings provide important insights and bear valuable research and practical implications for diverse populations who engage in same-sex sexual behavior.

CONCLUSIONS

The Negative Attitudes Toward Same-Sex Behavior Inventory (NATSBI) is designed to assess internalized homonegativity regarding one's own same-sex sexual behavior, regardless of one's sexual identity. Given the NATSBI's construct validity and internal

consistency reliability (in general and across diverse demographic characteristics), we propose its use in studies with both gay and non-gay-identified MSM and non-bisexual identified MSMW. Similarly, health- and sex-related studies that focus on sexual behavior rather than sexual orientation identity may also benefit from using the NATSBI for assessing internalized homonegativity. In light of recent shifts toward the expansion and diversification of sexual identity categories (e.g., bisexual, queer, pansexual), empirical data using valid and reliable measures like the NATSBI that are designed for such populations, are warranted. The findings of the current study extend our current knowledge on sexually-diverse and sexually-fluid individuals who engage in same-sex sexual behavior, regardless of their self-identification.

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Public Significance Statement:

This study provides evidence for the use of a newly developed measure of internalized homonegativity, the Negative Attitudes Towards Same-Sex Behavior Inventory, for use in studies with men who engage in same-sex sexual behavior, regardless of their self-identification.

Table 1.

Demographic Characteristics of Non-Gay Identified Behaviorally-Bisexual Men (N = 203).

	N	%	M	SD
Age (in years)			36.9	11.2
18 – 29	59	29%		
30 - 39	56	28%		
40 - 49	57	28%		
50 - 59	26	13%		
60 - 66	5	2%		
Sexual Identity				
Heterosexual or Straight	71	35%		
Bisexual	115	57%		
Something else ^a	17	8%		
Race and Ethnicity				
African American/Black	68	33%		
Hispanic/Latino	59	29%		
Non-Hispanic White	54	27%		
Asian	20	10%		
Native American	2	1%		
Education				
Less than High School	19	9%		
High School or GED	43	21%		
Some College, Associates, or Technical School	68	33%		
College graduate	48	24%		
Graduate or Professional School	25	12%		
Household Annual Income				
Under \$30,000	76	39%		
\$30,000 - \$74,000	75	38%		
\$75,000 or more	45	23%		
Relationship Status				
No Wife or Steady Girlfriend	50	25%		
Girlfriend, but not living together	108	53%		
Lives with Wife or Girlfriend	45	22%		
Regular Male Sex Partner/Buddy	94	46%		

^a Other non-gay identity labels included "not liking labels", "refusing to label oneself", "sexual", "goes either way", "likes both men and women", "between bisexual and heterosexual", "curious", "down low", and "queer".

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#	Item Wording	Mean	SD	Personal Homonegativity	Disclosure Discomfort	Privacy Preference	Item-total
9	My sex with men makes me unhappy	2.03	0.74	.87	03	00.	.80
19	Whenever I think a lot about the fact that I have sex with men, I feel depressed	1.96	0.75	.80	.10	07	.78
×	I wish I did not have sex with men	2.28	0.89	.77	.05	.07	.76
٢	Whenever I think a lot about the fact that I have sex with men, I am critical of myself	2.27	0.82	.76	11.	03	.75
1	When I am in a conversation with a gay man and he touches me, it makes me uncomfortable	2.22	0.85	.75	12	03	.54
ę	I am glad that I have sex with men (R)	2.29	0.82	.73	15	.27	.70
4	When I am sexually attracted to another man, I feel uncomfortable	2.12	0.81	.60	04	05	.66
10	I have sought out help because I wanted to stop having sex with other men	1.82	0.85	.48	.18	21	.47
19	If my peers knew of my sex with men, I am afraid that many would not want to be friends with me	3.05	0.85	.01	96	11	.80
17	If straight men knew that I have sex with men, I'm afraid they would avoid me	3.14	0.83	00	.80	03	.71
20	I am afraid that people will harass me if my sex with men becomes public	2.86	0.89	.03	99.	.01	.64
18	If it were made public that I have sex with men, I would be extremely unhappy	3.30	0.81	00	.62	.32	67.
16	If my straight friends knew that I have sex with men, I would feel uncomfortable	3.28	0.79	03	.56	.35	.75
13	When I am sexually attracted to another man, I do not mind if someone else knows how I feel (R)	3.24	0.81	00	04	.82	.71
12	I wouldn't mind if my boss knew that I have sex with men (R)	3.39	0.74	08	.02	.78	.70
14	I would not mind if my neighbors knew that I have sex with men (R)	3.40	0.72	00	.05	.78	.71
Note.	Note. The numbers presented in this table correspond to the number of the original items as presented to participants	r of the e	original	items as presented to	participants.		

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R = Item was reverse scored.

Table 3.

Internal Consistency Reliability Estimates and Corresponding Confidence Intervals by Demographic Characteristics

	Personal Homonegativity a. (95% CI)	Disclosure Discomfort a. (95% CI)	Privacy Preference a (95% CI)
Total sample (N = 203)	.90 (.87, .92)	.89 (.87, .91)	.84 (.80, .88)
Sexual Identity Bisexual (n = 115)	.89 (.85, .91)	.92 (.89, .94)	.85 (.79, .89)
Heterosexual (n = 71)	.90 (.86, .93)	.77 (.65, .83)	.70 (.54, .80)
Race and Ethnicity White $(n = 54)$.90 (.84, .93)	.91 (.86, .94)	.86 (.78, .92)
Black $(n = 68)$.88 (.83, .92)	.88 (.82, .92)	.82 (.73, .88)
Latino (n = 59)	.91 (.87, .94)	.90 (.85, .93)	.85 (.76, .90)
Asian (n = 20)	.89 (.80, .95)	.89 (.80, .96)	.83 (.62, .92)
Age 18–29 (n = 59)	.84 (.76, .89)	.87 (.81, .92)	.82 (.71, .88)
30–39 (n = 56)	.92 (.89, .95)	.87 (.80, .92)	.89 (.81, .93)
40–49 (n = 57)	.90 (.85, .93)	.91 (.87, .94)	.81 (.71, .88)
50 or older $(n = 31)$.93 (.89, .96)	.93 (.88, .96)	.87 (.76, .93)
Education High school or less (n = 62)	.94 (.91, .96)	.93 (.89, .95)	.88 (.79, .91)
More than high school $(n = 141)$.87 (.84, .90)	.88 (.84, .91)	.83 (.78, .87)
Relationship Status Married (n = 37)	.90 (.84, .94)	.92 (.86, .95)	.89 (.80, .94)
Unmarried (n = 166)	.90 (.87, .92)	.89 (.86, .91)	.84 (.78, .87)
Has a Female Partner Has wife/girlfriend (n = 153)	.90 (.87, .92)	.89 (.85, .91)	.85 (.80, .89)
No female partner $(n = 50)$.88 (.82, .92)	.91 (.87, .95)	.81 (.69, .88)

Note. CI = confidence interval.

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Correlation Matrix of the Negative Attitudes Toward Same-Sex Behavior Inventory Subscales with Psychological Factors (N = 203)

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$ \begin{array}{cccccccccccccccccccccccccccccccccccc$							
Disclosure 3.13 0.70 1-4 89 .39 *** - Privacy preference 3.34 0.66 1-4 84 .26 *** .62 *** Privacy preference 3.34 0.66 1-4 84 .26 *** .62 *** Depression 2.64 1.01 1-6 89 .31 *** .29 *** Anxiety 2.44 0.95 1-6 .90 .33 *** .29 *** Positive affect 3.80 1.10 1-6 .94 25 *** .27 *** Positive affect 3.80 1.10 1-6 .94 27 *** 27 *** Self-esteen 3.12 0.57 1-4 .88 29 *** 27 *** General emotional 3.29 1.17 1-5 .94 14 *** 44 *** Number of family							
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Number of family	**13	60	.23 *** .11	l .58***	ı		
& Irriends who 0.71 1.04 0-4 .6721 ^{**} 33 ^{***} 27 ^{***} know	**03	02	.12 .07	7 .19 <i>**</i>	.44	,	
11 Number of family 0.62 0.95 0-4 .6329 ^{***} 38 ^{***} 33 ^{***}	**08	08	.15* .13	3 .23 ***	.48***	.87 ***	,
12 Concealment 3.77 0.79 1–5 .81 $.40^{***}$ $.74^{***}$ $.60^{***}$.22	.23 ** _	21 **15 *	5*30 ^{***}	57 ***	45****	50 **