Published in final edited form as:

J Consult Clin Psychol. 2013 February ; 81(1): 141–153. doi:10.1037/a0031272.

Disclosure and Concealment of Sexual Orientation and the Mental Health of Non-Gay-Identified, Behaviorally-Bisexual Men

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Abstract

Objective—Although bisexual men report lower levels of mental health relative to gay men, few studies have examined the factors that contribute to bisexual men's mental health. Bisexual men are less likely to disclose, and more likely to conceal (i.e., a desire to hide), their sexual orientation than gay men. Theory suggests that this may adversely impact their mental health. This report examined the factors associated with disclosure and with concealment of sexual orientation, the association of disclosure and concealment with mental health, and the potential mediators (i.e., internalized homophobia, social support) of this association with mental health.

Method—An ethnically-diverse sample of 203 non-gay-identified, behaviorally-bisexual men who do not disclose their same-sex behavior to their female partners were recruited in New York City to complete a single set of self-report measures.

Results—Concealment was associated with higher income, a heterosexual identification, living with a wife or girlfriend, more frequent sex with women, and less frequent sex with men. Greater concealment, but not disclosure to friends and family, was significantly associated with lower levels of mental health. Multiple mediation analyses revealed that both internalized homophobia and general emotional support significantly mediated the association between concealment and mental health.

Conclusions—The findings demonstrate that concealment and disclosure are independent constructs among bisexual men. Further, they suggest that interventions addressing concerns about concealment, emotional support, and internalized homophobia may be more beneficial for increasing the mental health of bisexual men than those focused on promoting disclosure.

Keywords

Disclosure; Concealment; Social Support; Internalized Homophobia; Depression; Anxiety; Bisexuality

Extensive research has documented a consistent pattern of mental health¹ disparities between heterosexual and gay/bisexual men (see King et al., 2008; Marshal et al., 2011; Meyer, 2003 for meta-analytic reviews). These differences are found when sexual orientation is defined based on sexual identity, attractions, or behavior (Marshal et al, 2011). As useful as these studies have been in documenting disparities by sexual orientation, they have typically treated gay and bisexual men as a single group (i.e., non-heterosexual). Only recently have researchers begun to examine the potential mental health differences between gay and bisexual men. Although not all (Balsam, Beauchaine, Mickey, & Rothblum, 2005; Kertzner, Meyer, Frost, & Stirratt, 2009; Mustanski, Garofalo, & Emerson, 2010), a substantial number of studies have documented that bisexual men (variously defined by identity, behavior, or attractions) are at greater risk for lower levels of mental health than gay men (Bostwick, Boyd, Hughes, & McCabe, 2010; Conron, Mimiaga, & Landers, 2010; Jorm, Korten, Rodgers, Jacomb, & Christensen, 2002; Mills et al., 2004; Paul et al., 2002; Robin et al., 2002; Warner et al., 2004). This is somewhat surprising given that gay men are more likely to report experiences of victimization, discrimination, and rejection than bisexual men (e.g., Chesir-Teran & Hughes, 2009; Herek, 2009; Kuyper & Fokkema, 2011), resulting in uncertainty as to what may account for the lower levels of mental health found among bisexual men.

One potential explanation is that bisexual men have been found to be less likely to disclose, and more likely to conceal, their sexual orientation from others (Balsam & Mohr, 2007; Legate, Ryan, & Weinstein, in press; Lewis, Derlega, Brown, Rose, & Henson, 2009; Rosario, Schrimshaw, & Hunter, 2008; Stokes, Vanable, & McKirnan, 1997; Wheeler, Lauby, Liu, Van Sluytman, & Murrill, 2008). Theories of sexual identity development (Cass, 1979; Troiden, 1989) or the “coming out process” (Corrigan & Matthews, 2003; Rosario, Hunter, Maguen, Gwadz, & Smith, 2001) have emphasized the benefits of disclosure on health and well-being. Likewise, minority stress theory (Hatzenbuehler, 2009; Meyer, 2003) and related theories focused on concealment of sexual orientation (Pachankis, 2007) have posited that concealment of sexual orientation may have detrimental effects on mental health.

Much of the theoretical and empirical research has treated disclosure and concealment of sexual orientation as two ends of a single continuum. Following Larson and Chastain (1990), the current research conceptualizes disclosure and concealment as different, albeit related, constructs. While self-disclosure is defined as the revelation (often verbal) of personal information, feelings, and experiences to others (Derlega, Metts, Petronio, & Margulis, 1993; Reis, 1995), self-concealment is defined as the desire to keep personal information from others (Larson & Chastain, 1990). As such, the two constructs are distinct in that the latter is not just the absence of disclosure, but a desire to prevent disclosure. Disclosure and concealment may be significantly overlapping in samples of openly gay men who disclose very widely and have no desire to conceal their sexual orientation. However, among a less open population such as bisexual men, disclosure and concealment may be more distinct. For example, some bisexual men may want to conceal their same-sex behaviors from their female partners and even the general public, but may also confide in a few friends or family members. Other bisexual men may not anticipate highly negative reactions and therefore do not desire to conceal their same-sex behaviors, but have not disclosed their same-sex behaviors to parents, friends, or female partners for a variety of reasons (e.g., religion, not seeing it as a major part of their self-identification). Indeed,

¹In the current report, as with much of the existing literature on the mental health of gay, lesbian, and bisexual individuals, the use of the term “mental health” is not meant to imply that individuals have met the diagnostic criteria for a particular psychiatric diagnosis, nor does it even imply that individuals report experiencing high levels of psychological distress symptoms. Rather the term is used more broadly to describe the level of psychological distress and well-being experienced by the sample.

Larson and Chastain (1990) found that measures of the intention to conceal and disclose personal information (albeit not sexual orientation) were not highly correlated ($r = -.27$) and that items from concealment and disclosure measures loaded on separate conceptual factors when factor analyzed. Therefore, the current study examined potential contributions of both disclosure and concealment of sexual orientation separately to determine which of the two concepts (if not both) are associated with the mental health of bisexual men.

Despite the theoretical consensus that greater disclosure and lower concealment of one's sexual orientation should be beneficial for mental health, the empirical research has been inconsistent. Whereas several studies have documented a positive association between disclosure of sexual orientation and mental health (Beals, Peplau, & Gable, 2009; Bybee, Sullivan, Zielonka, & Moes, 2009; Elizur & Ziv, 2001; Legate et al., in press; Paul et al., 2002; Rosario, Schrimshaw, & Hunter, 2011), other work has either found no association (Balsam & Mohr, 2007; Kuypers & Fokkema, 2011; Lewis, Derlega, Griffin, & Krowinski, 2003; Wright & Perry, 2006) or a negative association (Frable, Wortman, & Joseph, 1997; Hershberger, Pilkington, & D'Augelli, 1997; Rosario et al., 2001). Concealment, while less examined, has been consistently negatively associated with mental health (Frost, Parsons, & Nanin, 2007; Pachankis, Westmaas, & Dougherty, 2011; Ullrich, Lutgendorf, & Stapleton, 2003; Weiss & Hope, 2011).

Although there is an extensive literature on the potential role of disclosure and concealment of sexual orientation on mental health, exceedingly little research has examined this issue among bisexual men separately from gay men or lesbians. Indeed, the vast majority of this research has been conducted on samples of gay men who were largely open about their sexual identity and behavior. As such, the inconsistent findings between disclosure and mental health may be partly due to the lack of variability in disclosure/concealment in these samples. The only research that has examined the role of disclosure on the mental health of bisexual men (Lewis et al., 2009; Stokes, McKirnan, & Burzette, 1993) failed to find an association. Concealment and mental health among bisexual men remains unexamined.

Finally, there is little information on the reasons why the disclosure and concealment of sexual orientation may have implications for mental health. Pachankis (2007) and Hatzenbuehler (2009) have both argued that disclosure and concealment of sexual orientation may have indirect implications for mental health. Specifically, greater concealment and less disclosure are theorized to serve as barriers to resolving negative attitudes about one's sexuality (i.e., internalized homophobia) and eliciting social support from friends and family (Corrigan & Matthews, 2003; Pachankis, 2007). Indeed, among samples of gay men and lesbians, those who report greater disclosure or lower concealment of their sexual orientation have been also found to report less internalized homophobia (e.g., Frable et al., 1997; Lewis et al., 2003; Weiss & Hope, 2011; Wright & Perry, 2006) and greater social support (e.g., Balsam & Mohr, 2007; Beals et al., 2009; Elizur & Ziv, 2001; Potoczniak, Aldea, & DeBlare, 2007; Ullrich et al., 2003). Likewise, among bisexual men, nondisclosure is also associated with greater internalized homophobia (Stokes et al., 1993). However, few studies have examined the role of internalized homophobia and social support as mediating mechanisms that potentially explain the association between disclosure/concealment and mental health (e.g., Beals et al., 2009; Frable et al., 1997; Wright & Perry, 2006), and none have done so among bisexual samples.

This study examines the role of disclosure and concealment of sexual orientation in understanding the high levels of mental health problems (i.e., higher depressive and anxious symptoms, low positive affect) found among bisexual men. Unlike most past research, primarily conducted with predominantly open gay men, the greater concealment and lower disclosure found in bisexual men makes them an ideal group to examine the potentially

adverse role of concealment on their mental health. This report also examines potential antecedent demographic and sexual characteristics that might make some bisexual men more likely to conceal their sexual orientation. Finally, this study examines the mechanisms (i.e., internalized homophobia, social support) that potentially mediate the association between disclosure or concealment and mental health. The identification of antecedent characteristics will provide important information on who should be targeted for interventions, while identifying potential mediating mechanisms will provide information on how to disrupt the potential adverse role of concealment/nondisclosure on mental health.

METHOD

Participants

This report is based on a study of an ethnically diverse sample of 203 non-gay identified, behaviorally-bisexual men. 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.

The study aimed to examine bisexual men “on the down low”, a subgroup of bisexual men who live predominantly heterosexual lives and do not disclose their same-sex behavior. These men have been virtually unstudied. Bisexual men in a relationship with a female partner are more likely to not disclose their same-sex behavior to friends, family, or female partners (e.g., Kalichman, Roffman, Picciano, & Bolan, 1998; Stokes, McKirnan, Doll, & Burzette, 1996). Thus, to best represent men “on the down low” and to increase the level of nondisclosure in the sample, the decision was made to focus on men in a relationship or who had been in a relationship with a woman (in the past year, that lasted 3 months or longer) and who had not disclosed to any of his female sexual partners. No constraints were placed on the emotional commitment level of their relationship with a woman; thus, in addition to wives and girlfriends, men were also included if they reported a regular sexual (but not necessarily romantic) relationship with a woman (such as a regular sexual partner that they did not consider a girlfriend). 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. Because ethnic/racial differences were a primary aim of the study, men who identified with multiple racial/ethnic groups, and therefore could not be clearly classified into a single ethnic/racial group, were excluded. Sample characteristics are presented in Table 1.

Procedure

Men who completed data collection were recruited using multiple strategies including venue-based sampling (10%), Internet-based sampling (57%), print advertisements (19%), and from having a recruitment card passed on to them by a non-participant (14%). 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 to give them a card containing study information. Targeting all men in a venue served to eliminate both recruiter bias and the perception that individuals were singled out to receive a recruitment card. In addition, men were told “If the card does not apply to you, please pass it to a friend.” This procedure reduced the stigma of taking a card and was used because past research suggests

that non-gay-identified MSM are more likely to be reached through cards passed on from others (Fisher, Purcell, Hoff, Parsons, & O'Leary, 2006). For Internet recruitment, study information was posted to Craigslislist.org. Recruitment on various other websites was attempted but proved unsuccessful. Advertisements were placed in a free daily newspaper with a general readership that was widely distributed throughout New York City.

All recruitment materials stated that we were looking to interview men who had sex with both men and women and whose female partners did not know. Materials also stated the investigators' university affiliations, emphasized confidentiality, and that the participants would receive \$75. Where possible, the recruitment materials provided the study website address and a telephone number for participants to learn more about the study and to be screened for eligibility. Because several Internet sites prohibit the posting of telephone numbers or web addresses, participants were asked to email the researchers, who then provided the telephone number and website address. Screening and data collection were offered in both English and Spanish.

When a man called the study phone line, a male interviewer answered. The interviewer briefly described the study and asked if the caller would be willing to answer a series of questions to determine if he was eligible. Age and gender of the caller were assessed first to prevent the screening of anyone under age 18 or female. In all other cases, all screening questions were completed regardless of eligibility status and men were not told of their reason(s) for ineligibility in order to minimize the likelihood of individuals calling back at a later time and trying to participate by providing false information.

A total of 699 men called the researchers about the study. Of these, 12 refused screening and 2 discontinued screening. Of the 685 men screened, 397 (58%) were determined to be eligible for the study.² Men determined to be ineligible (e.g., had disclosed) were excluded from the study and did not participate in any further data collection. Of the eligible men, 25 were uninterested in participating, 42 were unwilling to schedule an appointment at the time of screening and were subsequently never able to be contacted or scheduled, and 6 were not scheduled because the study sampling quotas had been met. This resulted in 324 (82%) men who were scheduled for interviews. Eighty-eight (27%) failed to show for their interview and were never able to be rescheduled, resulting in the completion of 236 interviews. Thirty-three (14%) provided data in their interview that contradicted their screening data and rendered them ineligible and were not used in any analyses. This resulted in a final sample for analysis of 203 eligible men.

Eligible men were invited to meet with a male interviewer at the researchers' offices. During this meeting, 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 focused interview (Merton, Fiske, & Kendall, 1990) about their sexual relationships with women and men, sexual behavior, disclosure, sexual identity, and HIV testing. The data collection lasted, on average, 3.1 hours (SD = 48 minutes; M = 12 minutes for IAQ, 41 minutes for ACASI, and 134 minutes for interview) and all men were

²Of 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, 13% had been recruited by another study participant, 9% were of multiple racial/ethnic groups, 8% had not had sex with a woman in the past year, 5.5% had been in a relationship with a woman for less than three months, 5.5% had last had sex with a man more than a year ago. Other reasons included never having had sex with a man, not living in the New York area, having previously participated in the study, being female, and being under age 18 (< 5% were ineligible for these reasons).

interviewed between August 2007 and March 2010. At the completion of the interview, participants received \$75 in cash and were reimbursed for their transportation costs. All procedures described above were approved by the Institutional Review Boards of the two participating universities. A certificate of confidentiality was obtained from the federal government to further protect the study participants. For the current report, all measures were assessed via ACASI, with the exception of the demographic and descriptive variables described below.

Measures

Mental Health—The Mental Health Inventory (MHI; Veit & Ware, 1983) was used to assess level of positive and negative mental health symptoms. Veit and Ware (1983) argued that mental health is not comprised only of the absence of psychological distress, but also the presence of positive emotions. Thus, the study employed the depressive symptoms, anxious symptoms, and positive affect subscales of the MHI to better assess the full range of both positive and negative psychological states. Previous research has demonstrated the reliability and validity of this measure among gay and bisexual men (Elizur & Ziv, 2001; Kuyper & Fokkema, 2011). The response scale varies by item, with most using a six-point Likert-type response ranging from 1 (*All of the time*) to 6 (*None of the time*). Respondents are asked to indicate which came closest to how they felt during the past thirty days. The Depression subscale consists of 4 items ($\alpha = .89$), the Anxiety subscale consists of 9 items ($\alpha = .90$) and the Positive Affect subscale consists of 10 items ($\alpha = .94$). The mean score for each subscale was computed, such that higher scores indicated greater frequency of depressive symptoms, anxious symptoms, and positive affect.

Concealment—Participant's level of desire for concealment of their same-sex sexual behavior was assessed using a modified version of Larson and Chastain's (1990) 10-item Self Concealment Scale (SCS) with the original 5-point Likert response scale (1 = *Strongly Disagree* to 5 = *Strongly Agree*). Although the SCS has established reliability and validity among gay and bisexual men (Potoczniak et al., 2007), the original SCS assessed concealment in general ("There are things I haven't shared with anyone"). For this study we modified the scale to focus on concealment of their same-sex behavior ("I haven't shared with anyone that I have sex with other men"). A principal components factor analysis found seven items to load on a single factor (Eigenvalue = 3.52, explaining 35.2% of the variance) with factor loadings ranging between .58 and .79, and an internal consistency of $\alpha = .81$. Three items, with loadings between $-.25$ and $.13$ were dropped from the scale. The mean of the remaining 7 items was computed, such that higher scores indicated greater concealment. The final set of 7 modified items, the factor loadings, and the item means and frequencies are presented in Table 2.

Disclosure to Friends and Family—Although none of the participants had disclosed their same-sex behavior to any of their female sexual partners in the past year, direct and indirect disclosure to other members of their social network was assessed using Zea and colleagues' (2005) measure of disclosure of HIV status that was modified to assess disclosure of same-sex behavior. The modified measure assessed awareness of the participant's same-sex behavior among 4 key individuals: mother, father, best male friend, and best female friend. For the current analyses we defined disclosure as both direct disclosure (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). Both direct and indirect disclosure was used because it was anticipated that this bisexual group, if they did disclose, would be more likely to indirectly disclose (e.g., dropping hints, or being confronted and confess). Similar measures of disclosure of sexual orientation have established reliability and validity in bisexual samples (Stokes et al., 1997). A count of the

number of individuals that the participant responded “Yes, s/he knows” was computed as an index of the level of disclosure to family and friends. As some participants did not have a relationship with these key individuals (and therefore did not disclose to them), we could have alternatively computed disclosure as the percentage of individuals to whom men disclosed of those available. Analysis of the data using this method of computing disclosure did not change the significance of any findings presented. Therefore, we have retained disclosure as the count of individuals to whom the participant disclosed.

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

The perceived availability of general emotional support was assessed using 5 items from the Social Support Survey (Sherbourne & Stewart, 1991) which has demonstrated reliability and validity in a variety of populations, including gay and bisexual men (Fleishman et al., 2000). In addition to emotional support in general (e.g., “Someone to share your most private thoughts and concerns with”), we also assessed emotional support regarding their same-sex behavior by modifying the same 5 items to specify this type of support (e.g., “Someone to share your most private thoughts and concerns about your sex with men with”). Both measures employed a 5-point Likert-type scale ranging from 1 (*None of the Time*) to 5 (*All of the Time*). For both measures, the mean of the five items was computed with higher scores indicating greater emotional support in general ($\alpha = .94$) or greater emotional support for their same-sex behavior ($\alpha = .98$).

Internalized Homophobia—A modified version of the Personal Homonegativity subscale of the Revised Nungesser Homosexual Attitudes Inventory (RNHAI; Shidlo, 1994) was used to assess negative attitudes toward one’s same-sex behavior using a response scale ranging from 1 (*Strongly Disagree*) to 4 (*Strongly Agree*). Three of the original fifteen items were excluded because they assessed suicidality and one was excluded because it was found to have an extremely low item-total correlation in Shidlo’s (1994) validation research. In addition, because RNHAI and most other measures of internalized homophobia assume a participant identifies as gay (e.g., I wish I was not gay), for this non-gay identified sample, these items were modified to refer to men’s sexual behavior with men (e.g., I wish I did not have sex with men). 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. Reliability analysis of the measure indicated that one of the items did not correlate well with the other 10 items and was dropped. The mean of the remaining items was computed such that higher scores indicated greater negative attitudes towards one’s own same-sex behavior ($\alpha = .88$).

Demographic and Descriptive Variables—A variety of demographic and descriptive variables were also assessed as part of the interviewer administered questionnaire. Specifically, participants’ age, racial/ethnic background, household income, employment status, marital status, whether or not they lived with a female partner, and current religious denomination were assessed. Private sexual identity (e.g., Do you think of yourself as...), rather than how they publicly identify, was assessed. Men were also asked if they “had a regular male sexual partner or buddy that they hook up with.” Finally, average frequency of sexual contact with women and men in the past year were assessed separately with responses ranging from 1 (*More than once a week*) to 6 (*Less than once every 3 months*), which was then reverse scored so that greater values indicated greater frequency of sex.

Data Analysis

Descriptive statistics were computed for all variables. To identify potential factors associated with concealment and disclosure, ANOVA and eta square (for categorical variables) were used to examine mean differences and the Pearson correlation coefficient

was used to examine correlates (for continuous variables) at the bivariate level, followed by simultaneous linear regression of all factors to identify the unique association of each factor to disclosure and concealment. To identify potential covariates of mental health (in addition to those factors associated with disclosure and concealment found earlier), ANOVA and Pearson correlations were used. Pearson correlations among concealment, disclosure, potential mediators, and indicators of mental health were computed. Hierarchical linear regression analysis was used to examine the role of concealment and disclosure (entered in Step 2) after controlling for demographic and sexual covariates (entered in Step 1). A second set of linear regression analyses were conducted to identify potential mediators (entered as a set in Step 3) of the association between concealment and mental health. Given that multiple potential mediators were identified, we used Preacher and Hayes (2008) SPSS macro to employ bootstrapping analyses to simultaneously test for the significance of multiple indirect effects of concealment (through social support and internalized homophobia) on mental health while simultaneously imposing controls for the covariates and disclosure. In addition, this procedure provided a test to examine if significant differences exist in the strength of these indirect effects.

RESULTS

Prevalence of Concealment and Disclosure

The percentage of men who agreed or strongly agreed with each of the individual items of the modified Self Concealment Scale, as well as the mean response on each item and for the total scale are presented in Table 2. A large majority of men agreed that they keep their sex with men to themselves. However, less than 40% reported that they have not shared with anyone that they have sex with men. Consistent with this, in the disclosure measure, of the 4 potential targets of disclosure assessed (i.e., mother, father, best male and female friend), 41% reported that one or more of these individuals knew of his sex with men. Specifically, 32% of participants reported their best male friend knew and 22% reported their best female friend knew about his sex with men. Mothers (18%) and fathers (11%) were less likely to know.

Demographic and Sexual Correlates of Concealment and Disclosure

To examine factors associated with concealment and disclosure, the differences in the level of concealment and disclosure were examined for various demographic and sexual factors. Men having a household income of \$30,000 or more per year reported greater concealment about their same-sex behavior than men with lower incomes ($M = 3.9$ vs. 3.5), $F(1, 195) = 13.79$, $p < .001$, $\eta^2 = .07$; and men who worked full-time reported greater concealment ($M = 3.9$) than men who were working part-time or unemployed ($M = 3.6$), $F(1, 201) = 4.59$, $p < .05$, $\eta^2 = .02$. Married men reported greater concealment ($M = 4.0$) than unmarried men ($M = 3.7$), $F(1, 201) = 4.88$, $p < .05$, $\eta^2 = .02$; and men who lived with a female partner reported more concealment ($M = 4.1$) than men who lived alone or with others ($M = 3.7$), $F(1, 201) = 11.14$, $p < .001$, $\eta^2 = .05$. Men who thought of themselves as heterosexual reported more concealment ($M = 4.1$) than men who self-identified as bisexual or endorsed some other identity ($M = 3.6$), $F(1, 201) = 23.73$, $p < .001$, $\eta^2 = .11$; and men who reported a "regular male partner or buddy that they hook up with" reported less concealment ($M = 3.6$) than men who did not have a regular male partner ($M = 3.9$), $F(1, 201) = 9.10$, $p < .01$, $\eta^2 = .04$. Likewise, more frequent sex with men in the past year was correlated with less concealment ($r = -.31$, $p < .001$), but greater frequency of sex with women was correlated with greater concealment ($r = .17$, $p < .02$). Concealment did not differ by race/ethnicity or religious denomination (i.e., with a religious denomination vs. no religious denomination/atheist/agnostic), nor was it significantly correlated with age.

A similar pattern of findings, albeit somewhat weaker, was found when examining factors associated with disclosure of same-sex behavior to family and friends. Consistent with concealment, men who lived with a wife or girlfriend were less likely to disclose to friends and family ($M = 0.31$) than men who lived alone or with others ($M = 0.83$), $F(1,201) = 9.08$, $p < .01$, $\eta^2 = .04$. Likewise, men who identified as heterosexual reported less disclosure ($M = 0.39$) than bisexually-identified or men with another identity ($M = 0.89$), $F(1,201) = 10.89$, $p < .001$, $\eta^2 = .05$. Men with a regular male partner were more likely to disclose ($M = 1.0$) than men without one ($M = 0.47$), $F(1,201) = 14.14$, $p < .001$, $\eta^2 = .07$. Likewise, men who reported more frequent sex with men were more likely to disclose ($r = .40$, $p < .001$), but men who reported more frequent sex with women were less likely to disclose ($r = -.16$, $p < .05$). Disclosure did not significantly differ by race/ethnicity, household income, employment status, religious denomination, marital status, or age.

Given the potential conceptual overlap among many of these correlates of concealment and disclosure, all of the variables were entered into two multivariate linear regression equations to identify those variables uniquely associated with concealment and disclosure (see Table 3). Having a household income of \$30,000 or more, living with a wife or girlfriend, and self-identifying as heterosexual were each significantly associated with greater concealment. In addition, greater frequency of sex with men in the past year was significantly associated with lower levels of concealment, whereas greater frequency of sex with women in the past year was marginally associated ($p = .09$) with greater concealment. The full model explained 28% of the variance in concealment and was highly significant, $F(13, 182) = 5.54$, $p < .001$.

In a separate multivariate linear regression equation to identify variables associated with disclosure to friends and family, a somewhat different pattern of predictors was identified. Consistent with the associations found with concealment, heterosexually-identified men ($p = .09$), men who reported a greater frequency of sex with women, and men who reported a lower frequency of sex with men were less likely to disclose. However, contrary to the pattern found with concealment, having a household income of \$30,000 or more was associated with greater disclosure (but as noted earlier was also associated with greater concealment). Unlike with concealment, living with a wife or girlfriend was not significantly associated with disclosure. The full model explained 29% of the variance in disclosure to family and friends and was highly significant, $F(13, 182) = 5.67$, $p < .001$.

Bivariate Correlations with Mental Health

Pearson correlation coefficients among concealment, disclosure, indicators of mental health, and the psychosocial factors that potentially mediate the association between these variables are presented in Table 4. Concealment and disclosure were only moderately correlated. As hypothesized, greater concealment was correlated with more depressive symptoms, more anxious symptoms, and lower levels of positive affect. In contrast, greater disclosure was not significantly correlated with depressive symptoms, anxious symptoms, or positive affect. With regard to the potential mediators, concealment was negatively correlated with general emotional support and emotional support regarding their same-sex behavior, and positively correlated with internalized homophobia. Disclosure was positively correlated with both general emotional support and emotional support regarding their same-sex behavior, and negatively correlated with internalized homophobia.

To identify potential covariates at the bivariate level, demographic and sexual correlates were examined in relation to the three indicators of mental health. Of the potential covariates examined, only race/ethnicity, working full-time, having a regular male partner, and frequency of sex with men and women were associated with mental health. Race/ethnicity was marginally significantly associated with depressive symptoms, $F(3, 197) = 2.42$, $p = .07$, $\eta^2 = .04$, and significantly associated with anxious symptoms, $F(3, 197) = 2.84$, $p < .05$,

$r^2 = .04$. Post-hoc analyses using Tukey's HSD revealed that Black men and Latino men differed on the level of depressive symptoms ($M = 2.4$ vs. 2.8) and anxious symptoms ($M = 2.2$ vs. 2.7). White men and Asian men did not significantly differ from either group. Men who were working full-time, compared to men who worked part-time or less, reported fewer depressive symptoms ($M = 2.5$ vs. 2.8), $F(1,201) = 3.9$, $p < .05$, $r^2 = .02$. Men who had a regular male sexual partner reported marginally fewer depressive symptoms than men without a regular male partner ($M = 2.5$ vs. 2.8), $F(1,201) = 2.83$, $p = .09$, $r^2 = .01$; and reported significantly more positive affect than men without a regular partner ($M = 4.1$ vs. 3.6), $F(1,201) = 9.14$, $p < .01$, $r^2 = .04$. Finally, more frequent sex with men was correlated with fewer depressive symptoms ($r = -.15$, $p < .05$), fewer anxious symptoms ($r = -.16$, $p < .05$), and more positive affect ($r = .18$, $p < .01$); and more frequent sex with women was correlated with more positive affect ($r = .20$, $p < .01$).

Multivariate Associations with Mental Health

A series of hierarchical linear regressions were conducted to examine the association of concealment and disclosure with each of the three indicators of mental health, controlling for race/ethnicity, household income, employment status, sexual identity, cohabitation with a wife or girlfriend, having a regular male sexual partner, and frequency of sex with men and women. These control variables were entered in the first step of the hierarchical model. Concealment and disclosure were entered in the second step of the model.

As hypothesized, greater concealment was significantly associated with more depressive symptoms, more anxious symptoms, and lower positive affect even after controlling for demographic and sexual control variables (see Model 1 of Table 5). In contrast, disclosure to friends and family was not significantly associated with any of the three mental health measures. The overall model was significant for all three outcome variables. The addition of concealment significantly increased the explained variance beyond that of the control variables, $R^2 = .05$, $F(2, 183) = 4.90$, $p < .01$ for depressive symptoms; $R^2 = .05$, $F(2, 183) = 5.63$, $p < .01$ for anxious symptoms; and $R^2 = .03$, $F(2, 183) = 3.41$, $p < .05$ for positive affect.

Potential Mediators of the Association between Concealment and Distress

To examine potential mechanisms linking concealment with mental health, the hierarchical linear regression analyses were repeated with the inclusion of three potential mediators -- general emotional support, emotional support for same-sex behavior, and internalized homophobia -- entered into the third step of the model (see Model 2 in Table 5).

As hypothesized, the association between concealment and both depressive symptoms and positive affect became statistically non-significant after entering the three potential mediators, suggesting that this block of variables fully mediated the association. The association between concealment and anxious symptoms was reduced from $r = .29$ to $r = .21$, suggesting partial mediation. Emotional support in general and internalized homophobia were significantly associated or marginally significantly associated (in the case of emotional support and anxious symptoms, $p = .10$) with all three indicators of mental health (whereas emotional support for same-sex behavior was not significantly associated with any of the three indicators), indicating that these were the two variables that potentially mediated the association between concealment and mental health. The addition of the variables in Step 3 significantly increased the explained variance beyond that of the control variables and concealment, $R^2 = .08$, $F(3, 180) = 6.25$, $p < .001$ for depressive symptoms; $R^2 = .05$, $F(3, 180) = 3.35$, $p < .05$ for anxious symptoms; and $R^2 = .13$, $F(3, 180) = 11.07$, $p < .001$ for positive affect.

To more formally test the significance of the indirect effect of concealment on mental health (through general emotional support and internalized homophobia), we employed procedures detailed by Preacher and Hayes (2008) to test the significance of the indirect effects. Specifically, using a SPSS macro script designed by Preacher and Hayes to employ bootstrapping analyses with 1000 resamples, we examined the significance of the indirect effects of concealment on each mental health outcome variable through all three mediators (i.e., general emotional support, emotional support for same-sex behavior, and internalized homophobia) simultaneously, while still controlling for disclosure and the aforementioned covariates. These bootstrapping analyses provide a regression coefficient (B) for the total indirect effect of concealment and the indirect effect of concealment through each potential mediator, as well as a 95% confidence interval around the B-value. Confidence intervals that do not include 0 are statistically significant at the $p < .05$ level.

Results revealed that concealment had significant indirect effects (total) on all three mental health indicators (see Table 6). In general, these analyses revealed that concealment has these indirect effects on mental health through both general emotional support and through internalized homophobia; which both served as significant mediators of the effects of concealment on mental health. Specifically, concealment was found to have significant indirect effects on depressive symptoms and positive affect through both general emotional support and internalized homophobia, but the indirect effect through emotional support for same-sex behavior was not significant. In the case of anxious symptoms, however, concealment had significant indirect effects only through internalized homophobia, but the indirect effects through both emotional support variables were not significant. Additional analyses comparing the size of the indirect effects for each of the mediators (not presented) demonstrated that the indirect effect through general emotional support and through internalized homophobia did not significantly differ from one another for any of the three outcome variables (despite the indirect effect through general emotional support not being significant on anxious symptoms).

DISCUSSION

Despite the mental health disparities documented between bisexual and gay men, little research has addressed what factors uniquely contribute to the lower levels of mental health found among bisexual men. Drawing on theories suggesting that greater concealment and less disclosure of sexual orientation may contribute to lower levels of mental health (Hatzenbuehler, 2009; Meyer, 2003; Pachankis, 2007), this study examined a set of factors associated with concealment and disclosure of sexual orientation, the association of concealment and disclosure with mental health, and the potential of social support and internalized homophobia to mediate this association among a sample of non-gay identified, behaviorally-bisexual men. As one of the first studies to address the unique factors associated with mental health among bisexual men (see also Lewis et al., 2009; Sheets & Mohr, 2009), these findings have important theoretical and clinical implications for this population.

Theoretical Implications

Consistent with theory (e.g., Pachankis, 2007), we found that concealment of sexual orientation was associated with more depressive and anxious symptoms, and lower positive affect among bisexual men. This suggests that the constant vigilance and concern required to conceal their sexual orientation serves as a stressor in the lives of some non-disclosing bisexual men (Hatzenbuehler, 2009; Pachankis, 2007). Given past findings that other aspects of minority stress (e.g., rejection, victimization) are less common among bisexual men than gay men (Herek, 2009) and that bisexual men are more likely to conceal their sexual orientation than gay men (e.g., Balsam & Mohr, 2007; Stokes et al., 1997; Wheeler et

al., 2008), the finding that concealment is associated with the lower levels of mental health among bisexual men offers a plausible explanation for why past research has found lower levels of mental health among bisexual men. Future research among samples that include both gay and bisexual men who are both high and low in concealment are needed to confirm if concealment accounts for the disparities in mental health between gay and bisexual men.

In contrast, however, greater disclosure to friends and family was not significantly associated with mental health. This finding draws into question whether the same theoretical models of the “coming-out process” (Cass, 1979; Rosario et al., 2001; Troiden, 1989) can be applied to bisexual men. These theories emphasize that sexual identity development must go beyond self-acceptance to also disclose their sexual orientation to others in order to integrate one’s individual and public sexual identity. Given that these models of sexual identity development have been largely developed and tested with openly gay men and lesbians, these findings suggest different models of sexual identity development may be needed for bisexual men (see also the work of Fox, 2003; Knous, 2005; McLean, 2007). Given that the current study focused on a specific non-disclosing subgroup of bisexual men, these findings may alternatively suggest that distinct factors may be associated with mental health among different subgroups of bisexual men. While greater disclosure may facilitate the mental health of bisexual men who are more public about their bisexuality, this may not be what is needed to promote the mental health of bisexual men who are not yet public about or self-accepting of their sexual orientation (such as those examined here).

These findings also provide clues into the potential mediating mechanisms by which concealment is associated with lower levels of mental health. Theory has suggested that concealment may serve as a barrier to obtaining greater emotional support by leading men to distance themselves from others in order to maintain concealment (Pachankis, 2007). Likewise, concealment may also limit the extent to which men confront, work through, and resolve their own internalized negative attitudes toward their same-sex behaviors (Pachankis, 2007). Nevertheless, this mediational hypothesis has been little examined. Consistent with both of these theoretical pathways, the greater availability of social support to discuss problems in general and lower levels of internalized homophobia were each found to be associated with higher levels of mental health. In contrast, the availability of someone to discuss same-sex behaviors in particular was not associated with better mental health.

Further examination of the potential mediating mechanisms between concealment and mental health revealed that both general emotional support and internalized homophobia significantly mediated (i.e., significant indirect effects) the association between concealment and mental health (except in the context of anxious symptoms, where only internalized homophobia served as a significant mediator). These findings are consistent with past research among lesbian and gay samples whose results also suggested (although not always formally tested) that social support (Beals et al., 2009) and internalized homophobia (Balsam & Mohr, 2007; Wright & Perry, 2006) may mediate the association between disclosure and mental health. However, the current research extends this past research by formally demonstrating that both social support and internalized homophobia simultaneously mediate the association between concealment and mental health and extend this work to bisexual men.

Although not the principal aim of the current study, the findings provide further empirical evidence for Larson and Chastain’s theory (1990) that disclosure and concealment of private information (in this case sexual orientation) are separate constructs, rather than two ends of a single continuum. For example, our measures of disclosure and concealment were only moderately correlated, suggesting that they assessed different, albeit related, constructs. Likewise, the factors found to be associated with disclosure and concealment were

overlapping, but not identical. Specifically, while heterosexual self-identification and living with a wife/girlfriend were associated with greater concealment, they were not significantly associated with lower disclosure. Furthermore, the finding that greater income was associated with both greater concealment and greater disclosure (rather than the inverse) also suggests that disclosure and concealment are separate constructs. Taken together, this evidence builds on Larson and Chastain's (1990) suggestion that disclosure and concealment are different constructs, such that some bisexual men may disclose to a few others, but not necessarily report high levels of a desire for concealment. Likewise, those with high levels of concealment may nonetheless disclose to a few select others to whom they believe will maintain their secret. This evidence has implications for research in this area, which has often examined only disclosure or concealment, rather than both. Nevertheless, as argued earlier, the independence of these two constructs may be more likely in samples of behaviorally-bisexual men, who may have steady female partners and identify as heterosexual, as compared to samples of openly gay or bisexual men.

Implications for Therapeutic Interventions with Bisexual Men

Although this is one of very few studies of the mental health correlates of bisexual men and thus, these cross-sectional findings must be considered preliminary, the findings from this research suggest potentially important implications for the way therapeutic interventions for non-disclosing bisexual men are conducted. Perhaps most importantly, the finding that concealment, but not disclosure, was associated with the mental health of these bisexual men suggests that therapeutic work with non-disclosing bisexual men may not necessarily want to encourage men to publicly disclose their sexual orientation. While such disclosure may result in accepting reactions from family and friends, in other cases (particularly with female partners), disclosure may also result in rejecting reactions, which have been found to be adversely associated with the mental health of LGB samples (Rosario, Schrimshaw, & Hunter, 2009; Ryan, Huebner, Diaz, & Sanchez, 2009). While greater disclosure may facilitate social support specific to their same-sex behavior (indeed, we found disclosure to be correlated with greater support for same-sex behavior), our findings that sexually-specific support is not significantly associated with the mental health suggest that disclosure of sexual orientation may not be a necessary therapeutic goal when working with bisexual men. Rather, these preliminary findings suggest that as long as bisexual men have adequate emotional support to cope with other stressors in their lives, having someone to talk to about their same-sex behavior may not be necessary to their mental health.

Our finding that concealment is indirectly associated with lower levels of mental health by way of greater internalized homophobia may suggest that the mental health of non-disclosing bisexual men may be facilitated by helping them to accept their sexual orientation (e.g., reduce the guilt and desire to change their sexual orientation), reduce the hyper-vigilance associated with the perceived need to conceal, and more realistically assess the potential consequences of a failure to conceal. This emphasis on addressing concerns about concealment, rather than facilitating disclosure, is a departure from efforts aimed at facilitating an integration of men's public and private selves (Cass, 1979; Troiden, 1989). However, these findings do not mean that disclosure may never be an appropriate therapeutic goal. Indeed, with bisexual men who have previously addressed their own internalized homophobia, disclosure may be an appropriate further step in facilitating self-acceptance. Furthermore, to the extent that concealment by bisexual men may be placing their female sexual partners at risk for STD/HIV infection (Kalichman, Roffman, Picciano, & Bolan, 1998; Siegel, Schrimshaw, Lekas, & Parsons, 2008; Stokes, McKirnan, Doll, & Burzette, 1996), work to address disclosure to female partners (or implementation of consistent condom use) may be prioritized.

This research also provides information on the factors that might contribute to greater concealment among this subgroup of behaviorally-bisexual men. Such information is critical to understanding which of these bisexual men may be at greatest risk for lower levels of mental health. Specifically, we found that men who live with a wife or girlfriend, men who think of themselves as heterosexual, and men who have a lower frequency of sex with men were more likely to conceal their same-sex behavior. Men with higher incomes were also more likely to conceal, but were also more likely to disclose. It is unclear from these data why higher incomes might be associated with both greater disclosure and greater concealment. However, two speculations might be offered. Men with higher incomes may conceal more because they perceive themselves as having more to lose in terms of financial stability, career advancement, and perceived standing in their community than men who have lower incomes. Alternatively, men with higher incomes may disclose more because they may have more educated and less stigmatizing attitudes toward homosexuality. However, the overall pattern of correlates with concealment and disclosure suggest that these men may be more afraid of the consequences of disclosure (i.e., losses of relationship, family income, living arrangement, heterosexual public image). Further, the finding that heterosexually identified men are more likely to conceal highlights the distinction between private sexual identity (which varied), public identity (which was universally heterosexual), and behavior (which was universally bisexual). Future research would be beneficial to understand the reasons for concealment and the mechanisms on how these factors contribute to increased concealment.

In contrast, having a current religious denomination (vs. not currently identifying with any denomination or identifying as agnostic or atheist) was not found to be associated with concealment. Although more religiously-identified men might be expected to conceal more and previous research has found that greater religiosity was associated with non-gay identification (Jeffries, 2009), our findings along with others (Schope, 2002) suggest current religious affiliation may not be associated with concealment or disclosure. Likewise, unlike past research which has found ethnic/racial differences in disclosure among bisexual men (e.g., Stokes et al., 1996), we found no ethnic/racial differences in disclosure/concealment. These nonsignificant findings may be due to the sample being selected to obtain a highly nondisclosing sample; as such all racial/ethnic groups and those with and without a religious denomination all reported relatively high levels of concealment.

Limitations

Despite the important theoretical and clinical practice implications, the findings must be interpreted within the context of the research limitations. First, the study is based on a specific subgroup of bisexual men – those who are non-gay identified, behaviorally-bisexual, and whose female sexual partners do not know of their same-sex behavior. As such, these findings may not generalize to bisexual men who do not have relationships with women, or to the larger population of openly bisexual men whose levels of concealment may be minimal and therefore may have less significance for their mental health. Despite the fact that this sample is a specific subgroup of bisexual men, as noted earlier, research with samples of openly gay/bisexual men may limit the ability to examine the association between concealment and mental health. Further, non-disclosing bisexual men may be in greater need for therapeutic assistance than openly bisexual men, given the association between concealment and mental health found here. Likewise, the current study also chose to focus on an ethnically-diverse, urban population, therefore these findings may not generalize to other subgroups of non-gay-identified bisexual men (e.g., exclusively Black men; rural bisexual men). Another limitation of this research is the potential for self-selection bias. Indeed, men who self-refer into research studies may conceal their sexual orientation less than the true population. However, given the limited amount of research

examining the correlates of bisexual men's mental health (Lewis et al., 2009; Sheets & Mohr, 2009), these findings provide important insights into the mental health of bisexual men. The study is further limited in that additional plausible reasons for lower mental health exist which were not addressed here (e.g., biphobia and acceptance within the gay community). Further research addressing the mental health of bisexual men is needed to replicate and extend our work here. Another potential limitation for this study was that past measures had to be modified to be appropriate for this study population (i.e., who have same-sex behaviors but may not identify as gay or bisexual). As such, many of our measures specified concealment, negative attitudes, and social support regarding "sex with men"; however, different findings may have been found if we assessed concealment of sexual attraction or fantasies regarding men. Although acceptable internal consistency was found, these measures may merit further elaboration and testing (e.g., cognitive interviewing to ensure consistent interpretation of the items) in future research. Finally, due to the cross-sectional nature of this research, we cannot be certain of the causal direction of the associations identified. Although our hypotheses are informed by theory that has suggested the pattern of associations examined, it is also plausible that lower levels of mental health could result in greater internalized homophobia, lower emotional support, and greater concealment. Therefore, future longitudinal research or experimental intervention research are needed to more firmly establish the causal order of variables examined here.

Conclusions

Our findings document the importance of concealment of sexual orientation for understanding the mental health of non-gay-identified behaviorally-bisexual men. They suggest that the lower levels of mental health documented among bisexual men relative to gay men may be attributable to the greater likelihood of bisexual men to conceal their sexual orientation. In contrast, greater disclosure to family and friends were not significantly associated with mental health in this sample. These findings may suggest that concealment of sexual orientation may be a stressor in the lives of some bisexual men, and, if replicated, may suggest that therapeutic work with bisexual men may wish to focus on addressing the men's own perceived need for concealment in order to promote mental health in this population.

Acknowledgments

This research was supported by a grant from the National Institute of Mental Health (R01-MH076680) to K. Siegel, Principal Investigator. Martin Downing's writing and editorial efforts were supported by a postdoctoral fellow in the Behavioral Sciences Training in Drug Abuse Research program sponsored by Public Health Solutions and National Development and Research Institutes, Inc. with funding from the National Institute on Drug Abuse (T32-DA007233). The content is that of the authors and does not necessarily represent the views of the NIMH, NIDA, or NIH. The authors would like to thank Edward Clark, Helen-Maria Lekas, and the recruitment team for their assistance with recruitment and data collection, and the many men who shared their stories with us. The authors would also like to thank Margaret Rosario for her feedback on an earlier version of this report. An earlier version of this report was presented at the Annual Meeting of the American Psychological Association, August 2010.

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Table 1
Demographic Characteristics of Non-Gay Identified Behaviorally-Bisexual Men (N = 203)

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

^aOther non-gay identities 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”.

Table 2

Concealment of Same-Sex Sexual Behaviors (N = 203)

Items of Modified Self-Concealment Scale	% Agree or Strongly Agree	Mean	SD	Factor Loadings
I haven't shared with anyone that I have sex with men	37.9%	3.00	1.41	.57
If I shared with my friends that I have sex with men, they would like me less	51.7%	3.42	1.27	.63
There are lots of things about my sex with men that I keep to myself	91.6%	4.40	0.77	.75
When I have sex with men, I keep it to myself	79.8%	4.20	0.94	.79
I would lie if anyone asked me if I have sex with men	63.0%	3.87	1.14	.79
The fact that I have sex with men is too embarrassing to share with others	51.2%	3.48	1.30	.75
I have thoughts about my sex with men that I never share with anyone	79.8%	4.04	1.12	.60
Mean of All Items =		3.77	0.79	

Note: The scale uses a 5-point response scale ranging from 1 (strongly disagree) to 5 (strongly agree). Items based on Larson and Chastain's (1990) measure of general self-concealment.

Table 3
Simultaneous Multiple Linear Regression of Factors Associated with Disclosure and Concealment

Independent Variables	Concealment			Disclosure		
	B	SE	R ²	B	SE	R ²
Black vs. White	-.20	.14	-.12	.20	.18	.09
Latino vs. White	-.01	.16	-.01	.25	.20	.12
Asian vs. White	.02	.20	.01	-.16	.25	-.05
Age	-.01	.01	-.08	-.00	.01	-.01
Household Income of \$30,000+	.33	.13	.20*	.38	.16	.19*
Working Full Time	-.12	.13	-.07	-.22	.16	-.11
No Current Religious Denomination	.03	.12	.02	.13	.15	.06
Married	.08	.16	.04	-.04	.20	-.02
Lives with Wife/Girlfriend	.29	.14	.16*	-.28	.18	-.12
Self-Identifies as Heterosexual	.42	.12	.25**	-.25	.15	-.12 [†]
Frequency of Sex with Men in past year	-.11	.04	-.21**	.21	.05	.33***
Frequency of Sex with Women in past year	.06	.04	.12 [†]	-.17	.05	-.24***
Has Regular Male Sexual Partner	-.04	.12	-.02	.24	.15	.12
			.28***			.29***

[†] p < .10

* p < .05

** p < .01

*** p < .001

Table 4
Pearson Correlations Among Concealment, Psychological Symptoms, and Other Psychosocial Factors

Study Variables	M	SD	Range	1.	2.	3.	4.	5.	6.	7.	8.
1. Concealment	3.77	0.79	1-5	--							
2. Disclosure	0.71	1.04	0-4	-.45**	--						
3. Emotional Support – General	3.29	1.17	1-5	-.30**	.19**	--					
4. Emotional Support – Same-Sex Behavior	2.28	1.40	1-5	-.57**	.44**	.58**	--				
5. Internalized Homophobia	2.45	0.57	1-4	.50**	-.29**	-.14	-.22**	--			
6. Depressive Symptoms	2.64	1.01	1-6	.22**	-.03	-.26**	-.13	.28**	--		
7. Anxious Symptoms	2.44	0.95	1-6	.23**	-.02	-.16*	-.09	.28**	.79**	--	
8. Positive Affect	3.80	1.10	1-6	-.21**	.12	.36**	.23**	-.32**	-.74**	-.60**	--

* $p < .05$

** $p < .01$

Table 5
Multiple Linear Regression Examining Association of Concealment and Potential Mediators on Mental Health

	Depressive Symptoms			Anxious Symptoms			Positive Affect		
	Model 1	Model 2	R ²	Model 1	Model 2	R ²	Model 1	Model 2	R ²
Step 1: Antecedents to									
Concealment	.11 [*]	.11 [*]	.11 [*]	.08 [†]	.08 [†]	.13 ^{**}	.19 [*]	.13 ^{**}	.13 ^{**}
Black vs. White	-.17 [†]	-.19 [*]		-.08	-.12		.21 [*]		
Latino vs. White	.04	.01		.12	.09		.01		.04
Asian vs. White	.01	-.00		.03	.02		.05		.06
Income of \$30K or more	-.04	-.03		-.05	-.04		-.04		-.03
Working Full Time	-.19 [*]	-.18 [*]		-.10	-.10		.17 [*]		.14 [†]
Self-identifies as Heterosexual	.02	.02		-.05	-.06		-.01		-.01
Lives with Wife or Girlfriend	-.05	-.06		-.08	-.08		-.01		-.01
Has Regular Male Partner	-.03	-.01		-.01	.00		.09		.06
Freq of Sex with Men	-.07	-.03		-.12	-.08		.03		-.02
Freq of Sex with Women	-.15 [†]	-.14 [†]		-.07	-.06		.23 ^{**}		.22 ^{**}
Step 2: Concealment/Disclosure	.05 ^{***}	.05 ^{***}	.05 ^{***}	.05 ^{***}	.05 ^{***}	.03 [*]	.03 [*]		.03 [*]
Concealment	.27 ^{**}	.16 [†]		.29 ^{***}	.21 [*]		-.18 [*]		.00
Disclosure	.07	.07		.10	.09		.05		.03
Step 3: Potential Mediators			.08 ^{**}			.05 [*]			.13 ^{***}
Emotional Support – General	--	-.26 ^{**}		--	-.14 [†]		--		.30 ^{***}
Emotional Support – Same-Sex Behavior	--	.13		--	.10		--		-.03
Internalized Homophobia	--	.22 ^{**}		--	.21 [*]		--		-.29 ^{***}
Model R ² =	.15 ^{***}	.23 ^{***}		.14 ^{**}	.18 ^{***}		.16 ^{**}		.29 ^{***}

[†] p < .10

* p < .05

100' > d
**
10' < d
**

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Table 6

Bootstrapping Analyses to Examine the Indirect Effects of Concealment on Mental Health Through Multiple Mediators

	B	SE	BCa 95% CI
Indirect Effects of Concealment on Depressive Symptoms			
Through Emotional Support – General	.09	.04	.02, .19 *
Through Emotional Support – Same-Sex Behavior	-.05	.05	-.16, .05
Through Internalized Homophobia	.13	.05	.04, .27 *
Total Indirect Effects	.17	.08	.03, .36 *
Indirect Effects of Concealment on Anxious Symptoms			
Through Emotional Support – General	.04	.03	-.01, .12
Through Emotional Support – Same-Sex Behavior	-.04	.05	-.13, .06
Through Internalized Homophobia	.12	.05	.04, .24 *
Total Indirect Effects	.12	.07	.00, .28 *
Indirect Effects of Concealment on Positive Affect			
Through Emotional Support – General	-.13	.05	-.24, -.04 *
Through Emotional Support – Same-Sex Behavior	-.01	.06	-.14, .12
Through Internalized Homophobia	-.19	.06	-.30, -.09 *
Total Indirect Effects	-.32	.10	-.53, -.14 *

Note: BCa 95% CI = bias corrected and accelerated 95% confidence interval; 1000 bootstrap samples.

* = statistically significant CI.