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Luis F. Morales Knight  
*University of Nebraska-Lincoln*

Debra A. Hope  
*University of Nebraska-Lincoln, [dhope1@unl.edu](mailto:dhope1@unl.edu)*

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# Correlates of Same-Sex Attractions and Behaviors among Self-Identified Heterosexual University Students

Luis F. Morales Knight and Debra A. Hope

Department of Psychology, University of Nebraska–Lincoln, Lincoln, Nebraska, USA

*Corresponding author* – D. A. Hope, Department of Psychology, University of Nebraska–Lincoln, 238 Burnett Hall, Lincoln, NE 68588-0308, USA, email [dhope1@unl.edu](mailto:dhope1@unl.edu)

## Abstract

Few studies have focused on intragroup variations in sexual orientation and fewer on self-identified heterosexuals with same-sex attractions, fantasies, and/or behaviors. Self-identified heterosexual students at a large public midwestern university ( $N = 263$ ) completed measures of sexuality and gender, attitudes toward lesbian, gay, and bisexual (LGB) people, religious and political beliefs, emotional well-being, and demographics. The sample included 82 individuals (31%; labeled “H+”) who endorsed same-sex attraction, fantasy, and/or behavior and 181 (69%; labeled “H”) who did not. Women were more likely to be categorized as H+ than men. H+ participants had more positive attitudes toward lesbians and gay and bisexual men and reported more support for LGB-positive public policies than did H participants. H+ participants reported less literalistic beliefs about religious scripture than did H participants. H and H+ groups did not differ significantly on measures of emotional well-being. Results were discussed in the context of recent literature arguing for a more nuanced and gender-differentiated approach toward assessing sexual orientation, as well as literature on the flexibility of sexual orientation and on heterosexual identity development.

**Keywords:** sexual orientation, sexual identity, heterosexuality, homosexuality, sexual prejudice

## Introduction

Empirical investigations into same-sex sexuality are complicated by the availability of categories such as *gay*, *lesbian*, *bisexual*, and *heterosexual*, which tempt researchers to ask questions about *identity* that tend to obscure the wide variety of *behaviors* and/or *attractions* that people experience. Perhaps the first clear evidence of the disconnect between these variables was a national survey of sexual behavior in U.S. adults (Laumann, Gagnon, Michael, & Michaels, 1994), in which about 2% of those surveyed identified themselves as lesbian, gay, or bisexual (LGB), whereas fully 8% reported at least some same-sex attraction and 7% reported same-sex behavior since puberty. In the most recent national survey (Chandra, Mosher, Copen, & Sionean, 2011), 5% of women and 3% of men reported an LGB identity whereas 17% of women and 7% of men reported at least some same-sex attraction, and 13% of women and 6% of men reported at least some same-sex sexual contact. Similar results among U.S. adolescents (e.g., Russell, 2006; Savin-Williams & Ream, 2007) and in international samples (e.g., Eskin, Kaynak-Demir, & Demir, 2005; Sell, Wells, & Wypij, 1995; Wichstrøm & Hegna, 2003) suggest that defining people exclusively in terms of sexual orientation identity fails to capture the true incidence and diversity of same-sex sexuality. Savin-Williams (2006), in a review of several of these studies, suggested that distinctions be made among variables of attraction, behavior, and identity; Savin-Williams and Ream (2007) went further, suggesting that researchers “abandon the general notion of sexual orientation and measure only those [variables] relevant for the research question” (p. 385).

Moving beyond identity variables would have important consequences for future research. In particular, the study of the connections among societal attitudes, sexual orientation, and mental health outcomes is based on categorical distinctions between LGB- and heterosexual individuals. Studies of heterosexuals' attitudes toward LGB individuals have made distinctions among heterosexuals by gender (Herek, 1988, 2000) and race (Herek & Capitano, 1995) but not by variations in sexuality. Studies assessing internalized homonegativity (negative societal attitudes about same-sex sexuality) (e.g., Herek & Glunt, 1995; Meyer & Dean, 1998) focus exclusively on its effects on LGB-identified individuals, but there is no information as to effects on self-identified heterosexuals who have engaged in same-sex behavior. The epidemiological literature on LGB mental health (e.g., Cochran, Sullivan, & Mays, 2003; Kessler et al., 1994; Sandfort, de Graaf, Bijl, & Schnabel, 2001) variously defines LGB status by identification or by behavior, but in either case a bright-line categorical distinction is present. Meyer (2003), in outlining a minority stress model that links all of these factors, explicitly connected processes such as vigilance, concealment, and internalized homophobia with persons' identity as lesbian, gay or bisexual, without considering their operation in people who do not identify as LGB but do engage in same-sex sexual attraction, fantasy, and/or behavior.

There is a small but growing literature that compares “complete” heterosexuals to heterosexuals evidencing some same-sex sexuality. Dunne, Bailey, Kirk, and Martin (2000) found that scores on a retrospective questionnaire about childhood gender nonconforming (CGN) behavior prior to age 12 were linked to relatively subtle variations in sexual attraction, behavior, and identity. Thompson and Morgan (2008) offered undergraduate women the option of identifying their sexual identity as “mostly straight/heterosexual” and found

that 20% of their sample chose the “mostly straight” label. Vrangalova and Savin-Williams (2010) reported that 84% of women and 51% of men in their undergraduate sample endorsed at least one indicator of same-sex attraction or fantasy.

Worthington, Savoy, Dillon, and Vernaglia (2002) have offered a theoretical basis for comparing exclusively heterosexual individuals to heterosexuals who engage in same-sex behavior. They proposed that nonexclusive heterosexuals may be actively exploring their sexuality as part of a discrete phase of sexual identity development. If Worthington et al. are correct, self-identified heterosexuals who endorse same-sex sexuality would be likely to endorse more positive attitudes regarding same-sex sexuality and regarding LGB-identified individuals, due to their own experience with same-sex sexuality—similarly to heterosexuals with sufficient contact with LGB individuals (Herek & Capitanio, 1996; Herek & Glunt, 1995). In practical terms, these more positive attitudes should translate into greater support for public policies that positively impact LGB-identified people.

Further, Herek (1988, 2000) found that heterosexuals’ negative attitudes regarding LGBT individuals correlated with fundamentalist religious ideology. Accordingly, differences in attitudes toward LGBT individuals between self-identified heterosexuals with and without same-sex sexuality should be accompanied by differences in related variables, such as less literalistic beliefs about religious scripture. Indeed, Vrangalova and Savin-Williams (2010) found that exclusively heterosexual women were higher in religiosity than nonexclusively heterosexual women. However, their single-item measure of religiosity did not indicate which aspects of religion may be important.

Same-sex sexuality is socially stigmatized and this stigmatization has been linked, via the minority stress model (DiPlacido, 1998; Meyer, 2003), to increased psychological symptomatology in LGB individuals (e.g., Cochran et al., 2003; Kessler et al., 1994; Sandfort et al., 2001). There is some evidence that variations in sexual attractions and behaviors, independent of sexual orientation identity, may place individuals at risk of poorer mental health outcomes (e.g., Busseri, Willoughby, Chalmers, & Bogaert, 2006, 2008; Murphy, 2007; Udry & Chantala, 2002); however, there is still relatively little research specifically on heterosexually identified adults with same-sex sexuality and most of these studies examined specific negative outcomes, such as substance abuse and suicidality. It is still not known how heterosexuals with same-sex attractions and/or behaviors compare to heterosexuals who do not on more general measures of emotional well-being.

### *Aims of the Present Study*

In keeping with the current movement toward decoupling sexual orientation/identity variables from attraction and behavior variables, the present study focused on comparing heterosexually identified people who endorsed same-sex attractions and sexual behaviors with those who did not. Specifically, we investigated differences between these groups in attitudes toward LGB-identified people, in support for public policies that have an impact on LGB-identified people, in reported scriptural literalism, and in emotional well-being.

Given that previous research suggests that same-sex sexuality itself differs strongly by gender (e.g., Bailey, Dunne, & Martin, 2000; Baumeister, 2000; Vrangalova & Savin-Williams, 2010), the impact of gender was considered in the analyses.

### ***Research Hypotheses***

The research hypotheses of the present study were as follows:

1. Self-identified heterosexuals who engage in same-sex sexuality ("H+" individuals) will endorse more positive attitudes toward same-sex sexuality and toward LGB-identified people than will self-identified heterosexuals who do not engage in same-sex sexuality ("H" individuals).
2. H+ individuals will endorse more LGB-positive political positions than will H individuals.
3. H+ individuals will endorse less scriptural literalism than will H individuals.
4. H+ individuals will score lower on broad measures of emotional well-being than will H individuals.

### **Method**

#### ***Participants***

A total of 287 individuals were recruited from the University of Nebraska–Lincoln psychology undergraduate participant pool and received course credit in exchange for participation. Since the participant pool has historically been predominately female, males were over-recruited. Participants chose the study from among a few dozen studies available. The study was advertised as "Attitudes Toward Social and Sexual Life," and the description indicated that the study was interested in people's perceptions of themselves and others, including perceptions about sexuality. For the present study, only those students who currently identified as heterosexual were retained. This resulted in the exclusion of 13 participants who identified as lesbian, gay, or bisexual. Eleven additional participants were excluded due to having more than 10 missing variables in their datasets. This resulted in a final *N* of 263. The data sample was 86% white non-Hispanic, 40% men and 60% women, with a mean age of 20.17 years (*SD* = 2.25; range, 19–31 years), and was broadly representative of the overall university undergraduate student population, with the caveat that women were somewhat overrepresented, as the student population is 53% male.

Data collection for several related studies was combined. A survey packet comprising 15 questionnaires collecting information across six content areas (demographics; attitudes toward sexual minorities, gender roles, gender identity and attitudes regarding gender, sexual identity, orientation, and awareness, and emotional well-being) was administered. Questionnaires included in the present analyses are described below.

#### ***Measures***

##### ***Demographic and Background Information***

Participants were asked to provide age, gender, ethnicity, and relationship status. Ethnicities reported were 86% white, non-Hispanic; 4% African-American; 6% Asian American; 3% Hispanic; < 1% Middle Eastern; and < 1% Pacific Islander. These percentages sum to

greater than 100% because the ethnicity item allowed for multiple selection. Eight participants selected more than one category. Relationship statuses reported were 93% "single, never married," 6% "married/partnered," and < 1% "divorced."

#### *Sexual Orientation*

**Klein Sexual Orientation Grid.** Participants completed a modified version of the Klein Sexual Orientation Grid (KSOG), which is designed to assess multiple dimensions of sexual orientation (Klein, 1990; Klein, Sepekoff, & Wolf, 1985). Participants used a 7-point scale ranging from 1 = "only men" to 7 = "only women" (sample items: "In the past, I did find myself sexually attracted to . . ."; "Currently, I find myself sexually attracted to . . ."; "Ideally, I would find myself sexually attracted to . . .") to rate their past, current, and ideal objects of sexual attraction; partners in strong emotional relationships; objects of sexual fantasies; partners in intimate contact (defined as sexual contact not including genital contact); and sexual partners. Ratings for women were reversed so that higher scores indicate more same-sex sexuality, regardless of gender. Participants also endorsed past, current, and ideal sexual identity or orientation on a categorical item (gay, lesbian, bisexual, or other). A previously published factor analysis of the Klein grid suggests it has acceptable validity (Weinrich et al., 1993). A factor analysis performed on the present dataset suggested the same, showing most items loading on one factor (for men) or two factors (for women), with the emotional preference items loading on another factor (Morales Knight, Emge, & Hope, 2008). The KSOG was used to classify participants as H or H+ (see *Classification of Participants' Sexual Orientations*, in the Results section, for the process and rationale).

#### *Attitudes toward LGB Individuals*

Participants completed the Attitudes Toward Lesbians and Gay Men–Short Form (ATLG-S) (Herek, 1984, 1988), which was designed to measure heterosexuals' levels of hostility toward gay men and lesbian women, and the Attitudes Regarding Bisexuality Scale (ARBS) (Mohr & Rochlen, 1999), which measures individuals' attitudes toward bisexuality as a moral and stable sexual identity. The ATLG-S is a 10-item measure using a 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree) (sample items: "Male homosexuality is a perversion"; "Lesbians just can't fit into our society") that has demonstrated excellent reliability ( $\alpha > .90$ ; Herek, 1988) and excellent construct and discriminant validity (e.g., Herek, 1988; Herek & Capitano, 1995, 1996). Herek (2000) found that men's responses to items on the ATLG-S regarding lesbian women became significantly more negative when preceded by items regarding gay men. To avoid these order effects, the order of administration of the lesbian and gay items was counterbalanced. In the present sample, the ATLG-S had an average  $\alpha = .93$  across the two forms. Higher scores indicate more negative attitudes toward gay men and lesbian women.

The ARBS is an 18-item measure using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) (sample items: "Bisexual men are sick"; "Most women who call themselves bisexual are temporarily experimenting with their sexuality") that has demonstrated very good reliability ( $\alpha = .85-.93$ ) and convergent and discriminant validity (Mohr & Rochlen, 1999). In the present sample, the ARBS had  $\alpha = .92$ . Items on the ARBS

were summed to produce a summary score. Higher scores indicate more negative attitudes toward bisexuality and bisexual people.

Scores on the ATLG-S and ARBS were subdivided into summed scores representing attitudes toward lesbians (ATL), gay men (ATG), bisexual men (ARBM), and bisexual women (ARBW). In the present sample, the ATL had an average  $\alpha = .84$  across both forms; the ATG had an average  $\alpha = .90$  across both forms; the ARBM had  $\alpha = .88$ ; and the ARBW had  $\alpha = .81$ .

#### *Religious Affiliation and Scriptural Literalism*

Participants indicated their religious affiliation from the following options: Roman Catholic; Eastern Orthodox; Evangelical Christian; Fundamentalist Christian; Mainline Protestant; Pentecostal Christian; Nondenominational Christian; Other Christian; Jewish; Muslim; Earth-Based Spirituality; Agnostic or Atheist; No Religious Affiliation; and Other. These categories were collapsed into the broader categories specified in Table 1. Participants were asked to indicate whether their religious or spiritual tradition was based on a scripture. The 82.9% who indicated the affirmative were then asked to rate, on a 5-point scale, their belief in scriptural literalism (from "Scripture is the literal Word of the Divine" to "Scripture is primarily metaphorical or symbolic") (e.g., Kellstedt & Smidt, 1991). Rather than examining overall religiosity, which gives little information about specific beliefs about same-sex sexuality, scriptural literalism was selected because it is an index of fundamentalism and reflects connection to religious traditions that disapprove of same-sex sexuality (Harris, Cook, & Kashubeck-West, 2008).

#### *Political Beliefs and Policy Positions*

Participants completed a 15-item questionnaire on their levels of support (on a 5-point Likert scale ranging from "Strongly support" to "Strongly oppose") for various policy positions affecting people who identify as LGBT, including same-sex marriage, allowing LGBT individuals to adopt or foster children, and including LGBT as a protected class in hate crimes legislation (sample item: "How strongly do you support or oppose same-sex marriage, defined as the granting of same-sex couples full federal and state marriage rights?"). Only four nonredundant items relevant to the current study were included in the present analyses.

#### *Emotional Well-Being*

**Sexuality-related self-esteem.** Participants completed a 7-item measure of self-esteem related to sexual identity, using a 5-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." This measure was reworded for universality from Herek and Glunt's (1995) measure of gay and bisexual men's self-esteem (itself based on the Rosenberg Self-Esteem Inventory) (Rosenberg, 1965). For example, Herek and Glunt's original item "As a gay/bisexual man, I feel that I am a person of worth, at least on an equal basis with others" was reworded to read "Thinking about myself and my current sexual orientation, I feel that I am a person of worth, at least on an equal basis with others." Herek and Glunt reported very good reliability ( $\alpha = .87$ ) for the original questionnaire. In the present sample, this measure had  $\alpha = .88$ .

**Table 1.** Demographics of the sample, by H/H+ status and gender

Characteristic	H+ men	H men	H+ women	H women
<i>N</i>	21	83	61	98
Percentage within H+/H	26%	46%	74%	54%
Percentage within gender	20%	80%	39%	61%
Age (in years): <i>M</i> ( <i>SD</i> )	20.10 (1.79)	20.12 (1.52)	20.53 (2.21)	19.93 (1.60)
Ethnicity				
White, non-Hispanic	12 (5%)	71 (27%)	14 (5%)	84 (32%)
Other	2 (< 1%)	19 (7%)	8 (3%)	53 (20%)
Relationship status				
Single, never married	19 (7%)	79 (30%)	54 (21%)	93 (35%)
Married/partnered or divorced	2 (< 1%)	4 (2%)	7 (3%)	5 (2%)
Religious preference <sup>a</sup>				
Roman Catholic	5 (2%)	30 (12%)	13 (5%)	26 (10%)
Mainline Protestant	4 (2%)	17 (7%)	18 (7%)	30 (12%)
Other Christian	4 (2%)	18 (7%)	14 (5%)	29 (11%)
Other/no religious affiliation	7 (3%)	16 (6%)	15 (6%)	10 (4%)

**Note:** Cell values are *ns* and percentages of total *N* = 263 except where noted. Percentages may not sum to 100% due to rounding.

\*\*  $p < .01$

a.  $n = 256$

**Positive and Negative Affect.** Participants completed the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988), which measures the presence of pleasant versus unpleasant mood states. The PANAS is a 20-item instrument on which participants rate “the extent to which [they] generally feel” specific emotions (e.g., “interested,” “guilty,” “enthusiastic”), using a 5-point scale ranging from “Very slightly or not at all” to “Extremely.” The PANAS has shown excellent reliability ( $\alpha = .84-.90$ ) and very good convergent and divergent validity. In the present sample, the PANAS positive affect scale (PANAS-PA) had  $\alpha = .87$  and the negative affect scale (PANAS-NA) had  $\alpha = .72$ . The PANAS was included as general measure of emotional health due to evidence that high negative affect and, to some extent, low positive affect, represent vulnerabilities to emotional disorders (e.g., Brown, Chorpita, & Barlow, 1998).

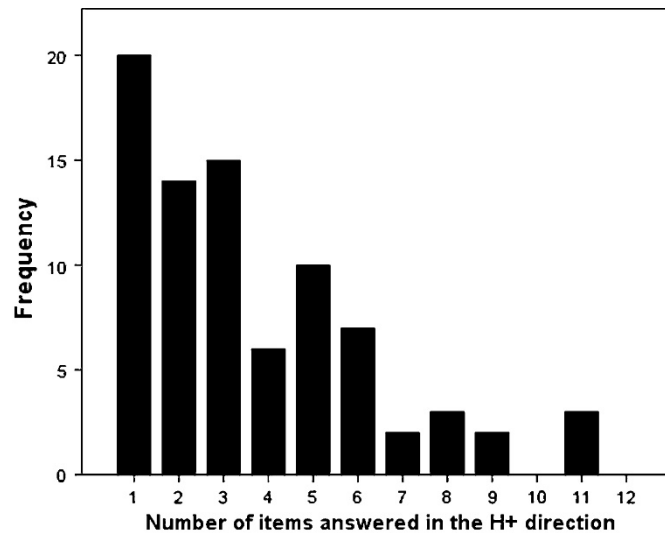
**Social anxiety.** Participants completed a modified version of the Interaction Anxiousness Scale (IAS) (Leary, 1983), which measures the degree to which participants experience anxiety in situations where they are likely to be observed and evaluated by other people. The IAS is a 15-item instrument using a 5-point Likert-type scale, on which participants rated how characteristic certain statements are of them (e.g., “I usually feel uncomfortable when I am in a group of people I don’t know”). The IAS has demonstrated excellent reliability ( $\alpha = .88$ ), good convergent validity, and acceptable divergent validity. Because some items on the standard IAS assume heterosexuality, asking about interactions with a “member of the opposite sex,” for the present study, three additional items were added, asking about interactions with persons “to whom I am sexually attracted.” In the present sample, the IAS (including these three additional items) had  $\alpha = .89$ .



## Results

### *Classification of Participants' Sexual Orientations*

Participants were classified as H+ if they made any rating other than 1 (for women) or 7 (for men) on any of the items on the KSOG regarding attraction, fantasy, and sexual behavior with men versus women. Conversely, participants were classified as H if they made only ratings of 1 (for women) or 7 (for men) on those items. The KSOG items for attraction, fantasy, and sexual behavior were selected for this purpose because they all loaded on a single factor in a factor analysis of the present sample (Morales Knight et al., 2008). The items regarding preferences for emotional relationships with men versus women loaded on a second factor (consistent with previous factor analyses of the KSOG) (e.g., Weinrich et al., 1993) and were, therefore, not used for classifying respondents as H versus H+. As a result, 21 of the men (20% of the men) and 61 of the women (38% of the women) were classified as H+. A chi-square analysis revealed that women were significantly more likely to be classified as H+ than were men,  $\chi^2(1) = 9.68, p = .002$ . Number of items answered in the nonheterosexual direction in the H+ group ranged from 1 ( $n = 20$ ) to 11 ( $n = 3$ ),  $M = 3.63$ , as shown in Figure 1. A summary score for total distance from complete heterosexuality (which was set as a metaphorical 0) was calculated by summing the ratings made by H+ participants in the nonheterosexual direction; i.e., ratings of "1" were construed as 0, ratings of "2" were construed as 1, and so forth.



**Figure 1.** Distribution of number of KSOG items answered in the nonheterosexual direction, for H+ participants only ( $n = 82$ )

### *Analyses of Group Differences*

Chi-square analyses were performed to examine the relationships between categorical variables and, respectively, H/H+ status and gender. Two-way multivariate analyses of variance (MANOVAS) were conducted using H/H+ status and gender as the independent

variables and conceptually related groups of questionnaire scores as dependent variables. In the case of the ATL, ATG, ARBW, and ARBM, men and women are known to have differing patterns of attitudes depending on the gender of the target person (e.g., Herek, 2000), and so in that case the analyses were structured as  $2(\text{H}/\text{H}+) \times 2(\text{respondent gender}) \times 2(\text{ATL}/\text{ATG or ARBW}/\text{ARBM})$  ANOVAs, with the latter term structured as a repeated-measures analysis. H/H+ status did not interact with gender of the respondent for any of the analyses. See below on gender analyses for more detail. Given the unequal cell sizes, Levene's test of equality of error variances was conducted where appropriate and all were nonsignificant,  $ps > .05$ , unless indicated otherwise. Univariate follow-ups were performed to investigate significant multivariate differences between H+ and H individuals, gender effects, and any significant multivariate interactions. As H/H+ group differences and interactions with gender were of primary interest in the study, respondent gender effects are only briefly summarized at the end of the Results section.

Table 1 shows the *ns* and percentages for demographic variables as a function of H/H+ status and gender. Table 2 shows the univariate means and *SDs* for the variables of interest, also as a function of H/H+ status and gender. The constructed KSOG summary score was correlated with the variables of interest to explore linear relationships between variations in same-sex sexuality within the H+ group and those variables. These correlations are shown in Table 2.

#### *Demographics*

H and H+ participants did not differ in average age. For the purposes of analysis, ethnicity was collapsed to two categories, "White Non-Hispanic" and "Other," due to small cell *ns* in some categories. Chi-square analyses found that H/H+ status was not related to ethnicity. Relationship status was similarly collapsed to two categories, "single/never married" and "married/partnered/ divorced." Chi-square analyses found that H/H+ status was not related to relationship status. Chi-square analyses showed no group differences between H and H+ individuals in religious preference or in whether scripture was applicable to their religious beliefs.

#### *Attitudes toward LGB Individuals*

A  $2(\text{H vs. H}+) \times 2(\text{respondent gender})$  MANOVA with attitudes toward lesbian women and gay men as measured by the ATL and ATG as the dependent measures was performed. The multivariate main effect of H/H+ was significant, Wilks' lambda = .96,  $F(2, 240) = 4.95$ ,  $p = .008$ ,  $\eta^2_p = .040$ . The multivariate interaction was nonsignificant. Univariate follow-ups showed that on the ATL, H+ participants ( $M = 12.98$ ,  $SD = 6.33$ ) had more positive attitudes than did H participants ( $M = 15.91$ ,  $SD = 7.28$ ),  $F(1, 241) = 7.00$ ,  $p = .009$ ,  $\eta^2_p = .028$ , and likewise, on the ATG, H+ participants ( $M = 13.28$ ,  $SD = 7.35$ ) had more positive attitudes than did H participants ( $M = 17.84$ ,  $SD = 8.83$ ),  $F(1, 241) = 9.93$ ,  $p = .002$ ,  $\eta^2_p = .040$ .

Another  $2(\text{H vs. H}+) \times 2(\text{gender})$  MANOVA with attitudes toward bisexual men and women as measured by the ARBM and ARBF as the dependent measures was performed. The multivariate main effect of H/H+ was nonsignificant, with observed power = .54; the multivariate interaction was nonsignificant.

Correlational analyses showed moderate negative correlations between the KSOG summary score and the ATL, ATG, ARBM, and ARBF, indicating that greater nonheterosexuality was related to more positive attitudes about lesbian, gay, and bisexual men and women (Table 2).

**Table 2.** Means and standard deviations of key variables, by H/H+ status and gender

	H+ men <i>M (SD)</i>	H men <i>M (SD)</i>	H+ women	H women	Correlation with KSOG summary score <sup>a</sup>
Attitudes toward lesbians and gay men					
Attitudes toward lesbians <sup>b</sup>	13 (5.42)	16.12 (6.72)	12.98 (6.62)	15.74 (7.74)	$r = -.19^{**}$
Attitudes toward gay men <sup>b</sup>	15.12 (6.40)	19.95 (8.38)	12.74 (7.58)	16.15 (8.86)	$r = -.24^{***}$
Attitudes toward bisexual individuals					
ARBS for target men <sup>b</sup>	24.86 (6.66)	27.24 (7.03)	22.02 (7.38)	24.56 (7.11)	$r = -.26^{***}$
ARBS for target women <sup>b</sup>	25.43 (6.58)	26.87 (5.96)	24.00 (6.46)	26.52 (6.50)	$r = -.25^{***}$
Religion					
Scriptural literalism <sup>c</sup>	3.38 (.96)	2.53 (1.16)	2.79 (.95)	2.43 (1.04)	
Political beliefs and policy positions					
Support for same-sex marriage <sup>d</sup>	3.81 (1.03)	2.98 (1.32)	3.75 (1.19)	3.27 (1.43)	$r = .21^{**}$
Support for allowing LGBT to adopt <sup>d</sup>	3.86 (1.15)	3.92 (1.08)	3.04 (1.31)	3.38 (1.33)	$r = .22^{***}$
Support for including violence against LGBT in hate-crimes laws <sup>d</sup>	3.48 (1.21)	3.43 (1.04)	3.93 (1.15)	3.59 (1.26)	$r = .18^{**}$
Support for including LGBT in fair-employment laws <sup>d</sup>	3.90 (1.26)	3.61 (1.04)	4.38 (.73)	4.00 (.96)	$r = .21^{**}$
Psychological well-being					
Sexual self-worth	28.90 (6.09)	30.90 (4.21)	30.82 (4.59)	32.22 (5.03)	
PANAS positive affect	34.80 (5.39)	37.15 (5.48)	36.17 (5.88)	36.29 (5.46)	
PANAS negative affect	21.50 (7.11)	21.47 (7.56)	19.85 (6.14)	18.19 (5.34)	
Interaction Anxiety Scale	25.40 (6.02)	24.25 (8.07)	25.12 (7.81)	23.35 (8.47)	

**Note:** *Ns* range from 206 to 261. ARBS = Attitudes Regarding Bisexuality Scale, LGBT = lesbian, gay, bisexual, and transgender, PANAS = Positive and Negative Affect Scale

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

a. H+ group only

b. Higher scores denote more negative attitudes

c. Range, 1–7; higher ratings indicate less literalistic beliefs about religious scripture

d. Range, 1–5; higher ratings indicate greater support

### Religious Beliefs

A 2(H vs. H+) × 2(gender) ANOVA for scriptural literalism was performed. The main effect by H/H+ was significant,  $F(1, 210) = 11.75, p = .001$ . H+ individuals ( $M = 2.94, SD = .98$ ) had less literalistic beliefs about scripture than did H individuals ( $M = 2.47, SD = 1.09$ ). The multivariate interaction was nonsignificant. Correlational analyses showed no significant relationship between the KSOG summary score and scriptural literalism.

*Political Beliefs and Policy Positions*

A 2(H vs. H+)  $\times$  2(gender) MANOVA including participants' ratings of their support for LGBT-related policy positions as dependent variables was performed. Levene's test of equality of error variances was significant for positions regarding same-sex adoption,  $p = .014$ . The multivariate main effect of H/H+ group membership was significant, with H+ individuals endorsing more LGB-positive policy positions than H individuals, Wilks' lambda = .94,  $F(4, 254) = 3.90$ ,  $p = .004$ ,  $\eta^2_p = .058$ . The multivariate interaction was nonsignificant, Wilks' lambda = .990,  $F(4, 254) < 1$ ,  $\eta^2_p = .010$ .

Univariate follow-ups showed that the main effect for H/H+ group membership was shared across most of the individual variables in the MANOVA. H+ individuals showed greater support than H individuals for legalizing same-sex marriage (H+  $M = 3.77$ ,  $SD = 1.15$ ; H  $M = 3.13$ ,  $SD = 1.39$ ;  $F(1, 257) = 11.62$ ,  $p = .001$ ,  $\eta^2_p = .043$ ); for allowing LGBT individuals to adopt children (H+  $M = 3.90$ ,  $SD = 1.10$ ; H  $M = 3.22$ ,  $SD = 1.33$ ;  $F(1, 257) = 13.51$ ,  $p < .001$ ,  $\eta^2_p = .050$ ); and for including LGBT status in fair-employment laws, H+  $M = 4.26$ ,  $SD = 0.91$ ; H  $M = 3.82$ ,  $SD = 1.01$ ;  $F(1, 257) = 9.22$ ,  $p = .003$ ,  $\eta^2_p = .035$ ). No significant difference by H/H+ group membership was found for including violence against LGBT individuals in hate crimes legislation.

Correlational analyses showed moderate positive correlations between the KSOG summary score and support for each of the policy positions, indicating that greater nonheterosexuality was related to greater support for each position (Table 2).

*Emotional Well-Being*

A 2(H vs. H+)  $\times$  2(gender) MANOVA including total score on the sexuality-related self-worth questionnaire, total score on the IAS, and scores on the positive- and negative-affect scales of the PANAS as dependent variables was performed. The multivariate main effect of H/H+ group membership was nonsignificant, with observed power = .55. The multivariate interaction was nonsignificant. Correlational analyses showed no relationship between the KSOG summary score and the various measures of emotional well-being.

*Summary of Respondent Gender Effects*

Univariate effects are reported here where the multivariate main effect of respondent gender was significant ( $p < .05$ ) and where not previously reported as part of an interaction.

Women ( $M = 14.85$ ,  $SD = 8.53$ ) had more positive attitudes than men ( $M = 19.06$ ,  $SD = 8.24$ ) on the ATG,  $F(1, 241) = 5.58$ ,  $p = .019$ ,  $\eta^2_p = .023$ , but not on the ATL. Similarly, women ( $M = 23.56$ ,  $SD = 7.30$ ) had more positive attitudes than men ( $M = 26.76$ ,  $SD = 6.99$ ) on the ARBM,  $F(1, 253) = 6.92$ ,  $p = .009$ ,  $\eta^2_p = .027$ , but not on the ARBF. This replicates the well-established pattern in the literature that women and men have differing attitudes toward sexual minority men (e.g., Herek, 1988, 2000; Kite & Whitley, 2003). However, on the policy-position items, women and men did not report differing support for same-sex marriage, LGB adoption, or sexual orientation hate crimes laws, but women ( $M = 4.15$ ,  $SD = .89$ ) reported greater support for sexual orientation fair-employment laws than men ( $M = 3.67$ ,  $SD = 1.09$ ),  $F(1, 257) = 9.22$ ,  $p = .003$ ,  $\eta^2_p = .035$ .

Women and men did not report differing levels of PANAS positive affect and did not score differently on the IAS, but women ( $M = 18.82$ ,  $SD = 5.70$ ) reported lower PANAS

negative affect than men ( $M = 21.47$ ,  $SD = 7.73$ ),  $F(1, 257) = 6.58$ ,  $p = .011$ ,  $\eta^2_p = .025$ , and women ( $M = 31.69$ ,  $SD = 4.90$ ) reported greater sexual-orientation-related self-esteem than men ( $M = 30.49$ ,  $SD = 4.68$ ),  $F(1, 257) = 5.14$ ,  $p = .024$ ,  $\eta^2_p = .020$ .

## Discussion

The present study attempted to capture the incidence of same-sex attraction, fantasy, and behavior in a sample of self-identified heterosexual college students, and to explore the relationships between H+ status and a selection of variables that are commonly treated in the literature only within the context of LGB identity or only within the context of the assumption that heterosexual identity precludes same-sex sexuality. For example, consistent with Ellis, Robb, and Burke (2005), a significant portion of our sample gave responses that indicated some discrepancy among sexual identity, attraction, fantasy, and/or behavior. However, where Ellis et al. chose to “refine” their measure of sexual orientation post hoc by eliminating the cases with the greatest apparent disparity—over 8% of their sample, almost all of which self-identified as heterosexual—we chose instead to treat such disparities as reflecting meaningful variations in individuals’ choices about self-labeling their sexual orientation identity.

Substantial support was found for the argument that sexuality variables of interest (e.g., attraction, fantasy, sexual contact) should be investigated independent of identity. Fully 31.2% of the self-identified heterosexuals in the present sample were classified as H+.

The data regarding attitudes toward LGB people and support for LGBT-related policy positions showed that H+ participants generally endorsed more positive attitudes than H participants on the ATLG and ARBS as well as more support for most of the LGBT-positive policies. It appears that self-identified heterosexuals with personal experience of same-sex sexuality may comprise a group of particular social and political allies for LGBT concerns. However, it is important to note that all groups’ averages on almost every policy item were tilted in favor of greater LGBT rights, which is in line with population-level data on cohort differences in attitudes toward same-sex sexuality (e.g., Anderson & Fetner, 2008).

Most participants (81%) claimed some religious affiliation, mostly various branches of Christianity. H+ individuals reported less scriptural literalism than H individuals, which is consistent with the association between scriptural literalism and condemnations of same-sex sexuality. While it is possible that H+ individuals selected religious beliefs that were consistent with their sexuality, it seems more likely that the religious affiliation came first, as other unpublished data on this sample indicated most participants (80%) shared their parent’s religious affiliation.

It is worth noting that no group differences in sexual prejudice toward bisexual people emerged nor did gender effects in attitudes toward lesbian women or bisexual women. Although observed power for H/H+ differences in attitudes toward bisexual people was low, it was quite high for gender effects in those attitudes. Bisexual women (and to a lesser extent lesbian women) targets may have a different status in society than do the other types of LGB targets. Certainly, same-sex sexuality between women—or a version of it calculated to appeal to the (heterosexual) “male gaze” (the assumption in visual media that the viewer is a [heterosexual] male; Mulvey, 1975)—has attained some currency in popular media in

recent years. It may be that greater acceptance of female same-sex sexuality (perhaps conditioned on its acceptability to heterosexual men) is a result of this cultural phenomenon (Kite & Whitley, 2003).

However, contradicting the hypothesis about social stigma and sexuality, H+ participants did not differ from H individuals on several broad measures of emotional well-being. These results differ from several studies investigating the connections between mental health outcomes and variations in same-sex sexuality among adolescents that were reviewed earlier (Busseri et al., 2006, 2008; Udry & Chantala, 2002). Of particular note, our results differ from Murphy (2007), who found that heterosexually identified college students endorsing same-sex attractions or behaviors (SSA/SSB) were at much greater risk for suicide than either their non-SSA/SSB peers or their LGB peers, implying that stigma and discrimination may have a disproportionate impact on this population. Although our measures were more broad and we did not specifically assess suicidality, negative affect should be elevated in any sample that is at risk for significant psychopathology, including elevated suicidal intent. The observed power for H/H+ differences was low but negative affect was generally within normal ranges compared to the original normative sample of college students (Watson et al., 1988) for all groups as well. Although it is possible that our H+ respondents simply did not see their own same-sex attraction as stigmatizing, given the whole sample's generally positive attitudes toward LGB individuals, future research is needed to further understand whether same-sex sexuality in self-identified heterosexuals is associated with risk for poor mental health outcomes.

Vrangalova and Savin-Williams' (2010) study was the most similar to the present work that has so far been published and deserves closer discussion. In their sample, among women, exclusive heterosexuality was associated with higher religiosity, greater political conservatism, less comfort with nonmonogamy and casual sex, and fewer sexual partners compared to nonexclusive heterosexuality. Exclusive heterosexuality was not associated with any of those variables for men, with the exception of less acceptance of nonmonogamy. Although Vrangalova and Savin-Williams recruited broadly across their university campus, their particular campus, and the recruitment strategy of advertising for a study about sexuality, may have yielded a sample that was more open about same-sex sexuality than most college students. Indeed, their percentages of individuals who identified some same-sex sexuality were higher than in many other studies (e.g., Dunne et al., 2000; Ellis et al., 2005; Thompson & Morgan, 2008). Although similar to these previous studies in many ways, the present study was conducted at a midwestern university in a much more conservative political environment than either Thompson and Morgan's or Vrangalova and Savin-Williams' studies.

### *Limitations and Directions for Future Research*

The present definition of same-sex sexuality was very broad, so as to capture the maximum possible number of participants. This may have resulted in minimizing effect sizes of the differences observed between H and H+ individuals, due to the relatively wide variation in reported sexuality among "H+" individuals. Most of our observed effect sizes (as measured by the  $\eta^2_p$  effect size metric) fell in the small-to-medium range (Cohen, 1988, p. 283)

although it is worth noting that these effect sizes were generally larger than those found for gender effects. Still, constructing narrower definitions of "H+" might result in capturing larger differences between H and H+ participants. Relatedly, there was no comparison group of LGB-identified participants, which limits our ability to know whether H+ participants more closely resemble H or LGB-identified participants on our variables of interest.

Having assessed variations in sexuality with the KSOG at a single time point, we were not able to test the stability of KSOG scores over time. It seems likely that people with lower summary scores would show less stability over time. On the other hand, all of our H+ participants rated past or current (not ideal) attraction, fantasy, or sexual behavior in the nonheterosexual direction, which suggests that, at least in our sample, H+ status is likely to remain stable over time.

The present sample was highly homogeneous. Future studies in this vein would very likely profit from collecting more diverse samples, both in terms of age and ethnicity. The present sample was almost entirely composed of people of traditional college age, which is certainly appropriate in terms of developmental theories about the exploration of sexual identity. However, an age-stratified sample (or a longitudinal one) might answer the question of whether "H+" status is restricted to individuals who are likely to be, by reason of their age, still exploring their sexuality and sexual identity. Alternately, H+ status might prove to be a generational phenomenon: younger individuals with same-sex attraction, fantasy, and behavior might maintain a heterosexual identity (or at least not find it necessary to assume an LGB identity) throughout the lifespan (Savin-Williams, 2008).

The present study treated self-identified heterosexuals with same-sex attraction and/or behavior as a unitary population. Future research with larger and/or more demographically diverse samples may discover subpopulations within this group that manifest important differences.

Perhaps the greatest limitation of this study is that it is still not known why H+ individuals do not choose to identify as lesbian, gay, or bisexual. It is possible that the simplest explanation is the likeliest: that H+ individuals are primarily heterosexual in their sexual attractions, fantasies, and behaviors and, therefore, are primarily heterosexual in their identities. Alternate possibilities abound, however. Given that this is a college-age sample, Worthington et al.'s (2002) theoretical framework suggests that at least some H+ individuals may be in an "active exploration" phase regarding their own sexuality. Diamond's (2008) longitudinal research with a sample of women beginning in the college years supports this notion generally. Among such individuals, it is plausible that some will eventually decide to identify themselves as lesbian, gay, or bisexual. Others may choose to retain their identity as heterosexual individuals yet continue to experience same-sex sexuality. A third possibility is that, finding their same-sex sexuality not to be central to their self-concept, some will eventually choose not to claim any particular "sexual identity" at all, or choose to inhabit new categories, such as "bi-curious," "mostly straight," or "heteroflexible," that have gained some social currency in recent years (e.g., Essig, 2000; Morgan & Thompson, 2006; Thompson & Morgan, 2008). Others yet may, having explored new territory, choose to return to familiar terrain and cease expressing same-sex sexuality. However, there are more negative possibilities. Some H+ individuals may fear the social stigma involved in claiming an LGB identity, or they may experience strong internalized homonegativity

(e.g., Meyer, 2003). This wide range of possibilities, and the present findings, suggests that H+ sexuality, its development, and its intersection with stigma and discrimination all require further study.

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